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**Financial performance of Finnish private equity
backed companies**

Cohort years 2015-2017 and 2021

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ABSTRACT:

The purpose of this study is to examine how private equity (PE) ownership influences the financial performance of Finnish portfolio companies. Specifically, it investigates whether PE-backed firms outperform comparable non-PE-backed firms in growth, profitability, and capital structure during the early post-investment period.

The analysis is based on firm-level data from the Orbis database, covering four investment-year cohorts (2015, 2016, 2017, and 2021). The final dataset includes 32 Finnish PE-backed firms and 3,918 non-PE-backed firms. To ensure comparability, a Propensity Score Matching (PSM) approach was applied, followed by Average Treatment Effect on the Treated (ATT) estimation and Ordinary Least Squares (OLS) regressions to assess performance differences.

The results show that PE-backed firms achieve significantly higher revenue and employment growth relative to their matched non-PE counterparts, while differences in profitability (EBITDA, ROA) and leverage remain statistically insignificant. These findings indicate that Finnish buyout investors primarily create value through strategic scaling and organizational expansion rather than short-term margin improvements.

Overall, the evidence suggests that private equity ownership in Finland enhances firm growth and development by combining active governance with resource enhancement, supporting long-term value creation over immediate financial restructuring.

KEYWORDS: private equity, buyouts, value creation, financial performance, agency theory, resource-based view theory

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1 Introduction

Over the past four decades, the landscape of global investing has undergone a profound transformation. Where academic finance once concentrated almost exclusively on publicly traded stocks and bonds, investors today operate in a far more diversified environment. The rise of alternative asset classes, including real estate, infrastructure, and private equity, has not only changed how portfolios are constructed but also how financial scholars conceptualize risk and return. These asset classes have attracted attention for providing strong historical performance (Kaplan & Jenkinson, 2014, pp. 1851-1855) and diversification benefits due to their low correlation with public markets (Driessen et al., 2012, pp. 511-514).

Among these alternatives, private equity (PE) has become a dominant force shaping modern capital markets. Its evolution from a niche investment practice into an established asset class reflects both the scale of institutional commitments and the perception that PE offers unique avenues for long-term value creation. While early debates framed private equity primarily as a financial innovation driven by leverage and restructuring, more recent perspectives emphasize its role as an active ownership model—one that seeks to improve operations, governance, and strategic direction within portfolio companies (Wilson, Wright, Siegel & Scholes, 2011, pp. 201-204).

Private equity firms typically invest through structured funds that acquire stakes in unlisted companies using varying strategies. The most common of these, the leveraged buyout (LBO), involves purchasing controlling interests in companies largely with borrowed capital (Kaplan & Strömberg, 2009, pp. 121-123). During the 1980s and 1990s, such transactions sparked considerable public and academic criticism. LBOs were often portrayed as mechanisms of financial engineering that enriched investors through short-term gains, often achieved by cutting costs, selling assets, or downsizing labor (Kaplan, 1989, pp. 217-220; Lichtenberg & Siegel, 1990, pp. 165-167).

However, this narrative has gradually shifted. As the PE industry matured and data availability improved, evidence began to suggest that operational improvements and strategic refocusing—rather than mere financial restructuring—are central to value creation in private equity. This transition has reframed the academic conversation from one focused on exploitation to one exploring efficiency, innovation, and sustainable growth in PE-backed firms.

Performance evaluation has been equally complex. While early studies consistently reported that private equity funds outperform public benchmarks even net of fees (Kaplan & Jenkinson, 2014, pp. 1851-1855), subsequent research has highlighted the opacity of reported returns and the cyclical nature of PE performance (Maeseneire & Brinkhuis, 2012, pp. 155-156). More contemporary analyses attempt to disentangle the sources of returns, distinguishing genuine value creation from gains driven by actual performance enhancements, growth, leverage, timing, or multiple expansion.

1.1 Purpose of the study

This paper focuses on buyout funds in Finland and examines how their portfolio companies have performed over a three-year period compared to non-private-equity-owned counterparts. Through this analysis, the study aims to provide a deeper understanding of how effectively PE-backed companies perform in a smaller market context such as Finland. To guide this investigation, the paper addresses the following overarching research question:

Q1: Do private-equity-backed firms in Finland outperform comparable non-PE firms in the first three years following investment?

To break this down further, the study examines three specific sub-questions:

Q1a: Do PE-backed firms exhibit higher revenue and employment growth compared to matched non-PE firms?

Q1b: Do PE-backed firms demonstrate different short-term profitability dynamics (EBITDA margins) relative to their non-PE counterparts?

Q1c: Do PE-backed firms adjust leverage levels differently than comparable non-PE firms during the early post-investment period?

Although certain performance assessments of Finnish PE-backed companies have been published by organizations such as Tesi and major consulting firms like PwC, there remains a lack of independent academic research that systematically analyzes the performance of PE portfolio companies as a cohort. To address this gap, this study seeks to contribute a comprehensive, data-driven evaluation of Finnish private equity investments across multiple performance dimensions.

To address these research questions, the empirical analysis is guided by the following three hypotheses:

H₁: Finnish private-equity-backed firms exhibit higher post-investment performance in terms of revenue growth and employment expansion during the first three years following the investment.

H₂: Finnish PE investors typically focus on growth and operational scaling in the early post-investment phase, therefore PE-backed firms do not display significantly higher profitability (EBITDA margins) than comparable non-PE firms during the first three years after the investment.

H₃: PE-backed firms do not meaningfully increase leverage levels relative to matched non-PE firms following the investment, as leverage is typically adjusted throughout the entire holding period rather than concentrated in the initial years.

Compared to many other European markets and North America, Finland has received limited academic attention in this field. Therefore, examining this hypothesis will help clarify the economic and strategic value of private equity ownership within Finland's corporate landscape. The findings are also expected to inform the broader discussion on PE as an attractive asset class for institutional investors, particularly pension funds, which play a central role in the Finnish investment ecosystem.

1.1.1 Novelty of the paper

This thesis contributes to the limited academic research on private equity in Finland by providing one of the first multi-cohort, firm-level performance analyses using matched control groups. Prior Finnish studies are scarce, largely descriptive, and often produced by industry associations rather than academic scholars. By applying PSM and examining six key performance dimensions: revenue growth, employment growth, EBITDA level, EBITDA margin, leverage change, and return on assets (ROA), this study offers a more rigorous and comprehensive assessment of post-investment outcomes. Given that Finland is a small but relatively high-performing PE market that receives little attention in international research, the findings of this thesis provide novel empirical evidence on how effectively PE-backed companies create value in smaller but developed market such as Finland.

1.2 Structure

The study is structured as follows. The first section provides an brief overview of the private equity industry. The second section will focus on explaining the buyout funds, by outlining how buyouts are structured, how PE funds operate, and the value creation methodologies they employ. The section also reviews existing evidence on buyout fund performance and the financial outcomes of PE-backed companies.

The third chapter will explore the theoretical foundations of value creation in private equity. Special attention is given to the Agency Theory and the Resource-Based View

(RBV), and how these frameworks explain the relationship between private equity ownership and portfolio company performance.

The fourth section presents the data and methodological framework used in the empirical analysis, describing the sample selection, variables, and statistical techniques applied. Finally, the fifth section presents and discusses the empirical results, followed by a concluding section that synthesizes the key findings and outlines the main conclusions of the study.

2 Private equity

Private equity (PE) is a subset of the broader “alternative assets” category, an investment domain that extends beyond the traditional asset classes of publicly traded stocks, bonds and cash. Alternative assets include vehicles such as real estate, infrastructure, commodities, and private markets investments.

Within this framework, private equity can be understood as equity or equity-like investments made in companies that are not listed on a public stock exchange.

These investments are typically less regulated and less visible to the public than those in the listed markets, which helps explain why private equity historically has operated with lower public scrutiny. At the same time, private equity funds often have the flexibility to acquire publicly listed companies, take them private, and then manage them outside the immediate glare of public capital markets.

From a corporate-financing perspective, private equity offers firms an alternative means of raising capital beyond issuing stock via an initial public offering (IPO) or obtaining bank loans. In this way, it serves as a “non-public market” funding route, one that allows companies to pursue growth, restructuring or operational changes with the backing of long-term investors.

Although the roots of private equity investment trace back to the earliest ventures in industrial and business development, the modern conception of private equity clearly emerged in the mid-20th century in the United States.

2.1 Background of Private equity

The modern form of private equity traces back to the founding of American Research & Development Corporation in 1946 by Georges Doriot, Ralph Flanders and Karl Compton, which is often cited as the first institutional private equity firm (Demaria 2013, pp. 31-

34). In the United States, the first major boom of the PE industry occurred in the early 1980s, aided by declining taxes, the rise of high yield “junk” bonds, and prominent leveraged buyouts (LBOs), such as KKR’s 1988 acquisition of RJR Nabisco (Stowell 2013, pp. 323; Swaay et al., 2015). After a contraction in the 1990s, buyout activity resurged, particularly in the mid-2000s when low interest rates and abundant debt fuelled high transaction volumes (Kaplan & Strömberg, 2009).

More recently, according to McKinsey’s 2024/2025 research, the private equity environment has shifted into a “slower era”: global fundraising fell by around 22 % in 2023 (to just above USD 1 trillion) and private markets assets under management reached approximately USD 13.1 trillion by mid-2023. Dry powder (committed but uninvested capital) rose to roughly USD 3.7 trillion, pointing to deployment constraints rather than capital scarcity.

2.2 The structure of PE

Private equity firms are typically organized as partnerships consisting of general partners (GPs) and limited partners (LPs). GPs act as fund managers, overseeing investment selection, portfolio management, and operational decisions, while LPs provide the capital that finances the funds. Common LPs include institutional investors such as pension funds, insurance companies, endowments, and sovereign wealth funds, as well as high-net-worth individuals (Stowell 2013, pp. 320-321).

PE funds generally follow the “2 and 20” compensation model, a 2 % annual management fee on committed capital, plus a 20 % share of investment profits (carried interest). This structure aligns incentives by rewarding GPs for superior fund performance (Metrick & Yasuda 2010, pp. 2315-2329). Additional transaction or advisory fees may also apply, though these vary across funds and investment strategies.

3 Leverage buyouts

A leveraged buyout (LBO), or simply a buyout, occurs when an investor acquires a controlling interest in a company using a substantial amount of debt relative to equity. This financing structure magnifies equity returns by leveraging borrowed capital to amplify potential gains. LBO transactions typically involve active ownership, where investors play a hands-on role in improving operational efficiency and driving strategic growth in the acquired company. (Rosenbaum & Pearl, 2013, pp. 302-307)

According to McKinsey's Global Private Markets Report 2024, buyout funds remain the dominant strategy within private equity, accounting for approximately 64 % of all global PE fundraising in 2024 (McKinsey 2024, pp. 15-20). Given the prominence and central role of buyout investments in the private equity landscape, this study focuses exclusively on analyzing the financial performance of buyout-backed portfolio companies.

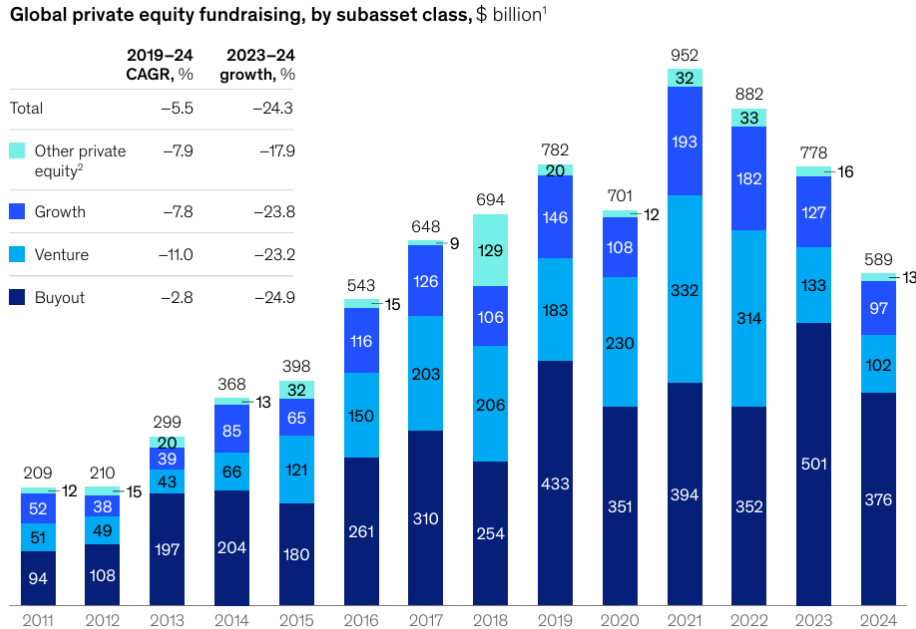


Figure 1: Global private equity fundraising, by subasset class, \$ billion

3.1 Structure and financing methods for buyouts

The capital structure of a buyout typically comprises a high proportion of debt relative to equity, commonly around 70-75 % debt financing (Axelson et al., 2008, p. 3; Maese-neire & Brinkhuis, 2012, p. 171), though this ratio can vary between 60 % and 90 % depending on market conditions and deal characteristics (Rosenbaum & Pearl, 2013, pp. 302-308).

The equity component is raised through a fundraising process, during which general partners (GPs) market their fund to potential limited partners (LPs) such as institutional investors, pension funds, and endowments. This process often lasts 12-18 months, concluding once the targeted capital commitments have been secured and financing arrangements finalized (Invest 2019, pp. 30-55). The level and type of debt financing depend largely on the GP's investment strategy, risk tolerance, and return objectives. While higher leverage can amplify equity returns, it also increases financial distress risk due to greater interest burdens and sensitivity to market fluctuations.

Debt financing for buyouts is generally sourced from investment banks, institutional lenders, hedge funds, and pension funds (Invest 2019, pp. 30-55). Historical data from 1999-2008 show that a typical buyout structure consisted of approximately 70 % debt, divided into 45 % senior loans, 20 % junior or subordinated loans, and 5 % mezzanine financing. Senior debt holds repayment priority and offers lower interest rates, while junior debt is riskier, carries higher interest, and is often structured as a bullet payment at maturity (usually within 7-10 years). Mezzanine financing serves as a hybrid instrument, combining features of both debt and equity, such as convertible bonds or preferred equity instruments, that allow investors to share in potential upside while still receiving fixed returns (Talmor & Vasvari, 2011, pp. 263-266).

governance dimensions of the portfolio company to enhance its performance and, ultimately, generate returns for their LPs (Kaplan & Strömberg, 2009, pp. 130-133).

According to Gadiesh and MacArthur (2008) in *Memo to the CEO: Lessons from Private Equity Any Company Can Use*, effective active ownership can be structured around six distinct stages, which together form a systematic framework for driving value creation within portfolio companies (see Figure 4).

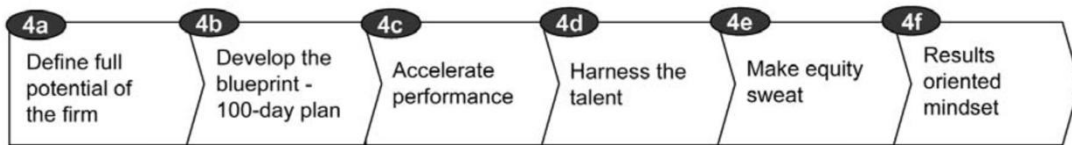


Figure 4. Stages of active ownership in PE buyout funds (Gadiesh et al., 2008).

3.3 Value creation methodologies of buyout funds

Buyout funds create value in their portfolio companies through several key mechanisms identified in the literature. According to Kaplan and Strömberg (2009), the primary drivers of value creation are operational, financial, and governance engineering, through which funds seek to enhance efficiency, optimize capital structures, and strengthen management practices. In addition, growth is recognized as an important value-creation dimension, as research shows it plays a central role in the investment philosophy of buyout funds (Boucly, Sraer & Thesmar, 2011, pp. 432-433). Finally, it is also important to acknowledge the potential for value destruction, providing a more balanced understanding of the overall effects that buyouts can have on their target companies, which will be briefly discussed at the end of this chapter.

3.4 Operational engineering

Operational engineering, also referred to as operational design, involves improving a company's internal functions and processes to enhance efficiency and performance. It

focuses on optimizing key operational elements such as assets, human capital, supply and value chains, information systems, and organizational structures. The approach is typically applied when inefficiencies arise in these areas, for example, outdated equipment, low employee productivity, or bottlenecks within the supply chain (Coates, Duffy, Whitfield & Hills, 2007, pp. 433-442).

There are multiple ways buyout funds can strengthen a firm's internal operations through operational engineering. For instance, investing in modern and more technologically advanced machinery can boost production capacity and cost efficiency. Organizational redesign, such as moving from a hierarchical to a flatter structure, can foster motivation, accountability, and communication across levels. Upgrading information systems can improve coordination between the company and its suppliers, thereby reducing friction and inefficiencies along the supply chain. Additionally, optimizing working capital management by extending payables and accelerating receivables enhances liquidity. Finally, the adoption of digital tools and artificial intelligence enables automation of functions such as sales tracking, reporting, and accounting, further improving operational performance (Coates et al., 2007; Johnson & Whittington, 2017).

3.4.1 Evidence in the literature

After a buyout is completed, funds implement strategies aimed at improving the operational performance of the acquired company to enhance its value prior to exit. With their managerial expertise and access to capital, buyout investors drive improvements through strategic and operational initiatives such as asset optimization, cost reduction, working capital efficiency, and supply chain restructuring (Wilson et al., 2012; Bergström, et al., 2007). As Loos (2007) notes, cost-cutting and asset utilization are the two primary levers of operational performance enhancement in buyouts.

Empirical research confirms the central role of operational improvements in value creation. Achleitner et al. (2010) find that roughly two-thirds of total value creation in European buyouts stems from operational changes, while financial leverage accounts for only

one-third. Their study of 206 transactions between 1991 and 2005 attributes nearly half of all created value to increases in EBITDA and free cash flow. Similarly, Kaplan (1989) observed substantial post-buyout gains in cash flow and operating income ratios, while Harris et al. (2005) documented notable efficiency improvements in U.K. management buyouts through reduced labor intensity and outsourcing. Evidence from Sweden also shows average post-buyout increases of 3.5 % in EBITDA, 17.4 % in ROIC, and 11.6 % in sales growth (Bergström et al., 2007).

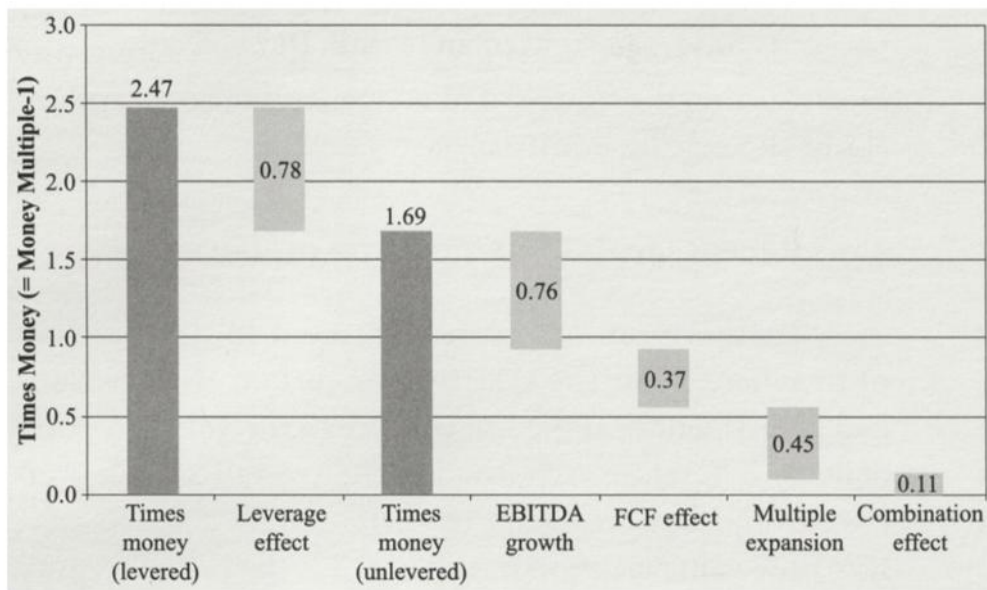


Figure 5. Value drivers of LBO transactions in Europe (Achleitner et al., 2010).

While some studies report more modest effects, such as Guo et al. (2011), who found limited operating improvements but higher overall returns, the literature broadly supports the view that buyout funds create substantial value through operational performance enhancements.

3.4.1.1 Synthesis of the evidence in operational engineering

Taken together, the empirical literature demonstrates that operational improvements represent one of the most consistent and well-documented sources of value creation in

buyouts. Across studies, PE-backed firms show stronger productivity, cash-flow generation, and efficiency gains than comparable firms, although the magnitude varies across industries and time periods. The evidence suggests a common pattern: operational engineering tends to yield meaningful improvements, but the timing and scale of these gains depend on industry characteristics, pre-buyout inefficiencies, and the intensity of PE involvement. This reinforces the view that PE ownership enhances internal capabilities and operational discipline, providing an important foundation for post-investment performance.

3.5 Financial engineering

Financial engineering can be understood through three main dimensions: enhancing financial processes, developing innovative financial instruments, and addressing corporate finance challenges. According to Finnerty (1988), improving financial processes, such as automating billing systems or restructuring corporate entities, reduces transaction costs and thereby creates value. The development of innovative instruments, including convertible bonds, preferred shares, or mezzanine financing, enables more efficient risk and capital management. Finally, financial engineering helps firms resolve financing constraints through tailored debt and capital structure strategies (Finnerty, 1988, pp. 14-17).

Buyout funds apply these methods to optimize the capital structure of their portfolio companies, frequently using leverage to enhance equity returns and adjusting debt-to-equity ratios to achieve more efficient financing. The following discussion explores empirical evidence on how buyout funds employ financial engineering as a key value-creation mechanism.

3.5.1 Evidence in the literature

Financial engineering represents a core dimension of value creation in buyouts, with leverage serving as its primary mechanism. As Kaplan and Strömberg (2009) note, high

leverage disciplines management by restricting excess cash flow, thereby reducing wasteful spending and improving capital efficiency. It also provides a tax advantage, as interest payments are deductible. However, this benefit persists only while the cost of debt remains below the value of the tax shield; excessive leverage can increase financial distress and erode returns (Talmor & Vasvari, 2011, pp. 293-294). Jensen (1988) emphasizes that buyout professionals create value by optimizing the balance between debt and equity to equalize marginal costs and benefits.

Buyout funds also leverage their capital markets expertise and networks to secure favorable financing terms, both during acquisitions and throughout ownership. Their relationships with lenders enable access to cheaper debt, advantageous refinancing, and improved loan and underwriting conditions (Loos, 2007, p. 26; Anders, 1992, pp. 79-83). As Guo, Edith, and Weihong (2011) show, this reduction in the weighted average cost of capital (WACC) enhances exit valuations, allowing funds to realize higher returns upon divestment.

3.5.1.1 Synthesis of the evidence in financial engineering

Overall, the literature suggests that financial engineering contributes to value creation primarily through leverage discipline, tax benefits, and capital structure optimization, although its impact is more context-dependent than operational improvements. While high leverage can amplify returns in favourable environments, recent studies highlight diminishing reliance on extreme debt levels, especially in Europe. Moreover, buyouts appear to benefit more from improved financial structure and access to superior financing terms than from leverage itself. These findings imply that financial engineering remains important, but its role is often complementary to operational and governance mechanisms rather than the dominant driver of performance.

3.6 Governance engineering

Governance engineering plays a crucial role in the value-creation process of buyout-backed companies. As highlighted by Kaplan and Strömberg (2009), governance is one of the three central dimensions through which buyout funds generate value. Similarly, Loos (2007) identifies governance as a critical indirect driver of performance improvement, emphasizing its importance in shaping management behavior and aligning incentives throughout the ownership period (pp. 27-29).

3.6.1 Evidence in the literature

Governance engineering enhances value in buyout-backed firms primarily by reducing agency costs and aligning incentives between owners and management. Following a buyout, fund managers often assume active ownership roles or appoint new executives who are required to invest their own capital, creating a direct link between managerial and shareholder interests (Kaplan & Strömberg, 2009; Loos, 2007). Kaplan (1989) found that managers' equity stakes increased fourfold after public-to-private transactions, while Kaplan and Strömberg (2009) observed an average 16 % equity upside for management in U.S. buyouts, demonstrating stronger alignment and motivation for value creation.

However, higher managerial ownership can also have drawbacks, such as increased risk aversion or excessive ownership concentration, which may limit diverse decision-making (Holthausen & Larcker, 1996).

A further source of governance value stems from board control and monitoring. Buyout investors typically hold majority board positions, enabling close oversight and swift managerial replacement. Acharya, Kehoe and Reyner (2009) report that 39 % of CEOs and 33 % of CFOs in PE-backed firms are replaced within the first 100 days after acquisition. This active monitoring fosters accountability and performance discipline. Moreover, as Cotter and Peck (2001) note, active ownership provides investors with privileged access

to internal information, improving strategic decision-making and enhancing overall governance effectiveness.

3.6.1.1 Synthesis of the evidence in governance engineering

Across empirical studies, governance engineering emerges as a powerful and relatively consistent lever of value creation. Concentrated ownership, managerial co-investment, and active board oversight reduce agency costs and help align incentives, leading to improved decision-making, accountability, and strategic focus. However, the literature also acknowledges trade-offs: high managerial ownership can increase risk aversion, and excessive leverage may create creditor-related agency issues. Nonetheless, the overall evidence supports the conclusion that governance improvements form a core pillar of the private equity model and interact with operational and financial enhancements to drive performance.

3.7 Growth

Although less emphasized in the literature, growth-oriented value creation remains a central driver of increased exit value in buyout investments. PE funds contribute both financial resources and managerial expertise, enabling portfolio companies to pursue aggressive expansion strategies, whether through organic growth or mergers and acquisitions. This support allows PE-backed firms to enter new markets, develop additional product segments, and strengthen their position in existing business lines by investing in talent and operational scale.

Empirical evidence further supports the growth effects of buyouts. Boucly, Sraer and Thesmar (2011), examining 839 French LBOs between 1994 and 2004 against 3,994 non-LBO firms, find that PE-backed companies experience relaxed credit constraints, enabling them to pursue faster expansion. In addition, PE investors contribute specialized expertise, strategic insight, and extensive networks, allowing portfolio firms to identify and

exploit growth opportunities that were previously beyond reach (Boucly et al., 2011, pp. 432-447).

Hammer (2017) examines the buy-and-build growth strategy in buyout-backed portfolio companies using a large sample of 3,399 transactions completed between 1997 and 2020. The study finds that PE firms actively pursue bolt-on acquisitions following the initial buyout, leveraging the acquired company as a platform for expansion into adjacent markets and achieving faster scaling and improved growth. This approach enhances top-line performance, broadens product and service portfolios, and increases profitability through operational synergies. Hammer demonstrates that firms employing buy-and-build strategies achieve significantly higher revenue growth and exit multiples compared to those relying solely on organic growth.

Biesinger et al. (2020) open the “black box” of value creation in buyout funds using proprietary data on value-creation plans within portfolio firms. Their analysis reveals that growth plays a central role: funds outline growth initiatives (both organic and acquisitive) such as entering new geographies, launching new product lines, and consolidating fragmented industries through roll-up strategies. These growth initiatives are often combined with operational improvements and financial engineering, but growth is highlighted by fund managers as a primary lever for value creation. The study finds that firms with clearly articulated growth agendas delivered higher returns at exit compared to those focusing mainly on cost-cutting.

3.7.1.1 Synthesis of the evidence in growth related engineering

Taken together, the empirical literature shows that growth-oriented strategies represent a central and increasingly important source of value creation in buyouts. Across studies, PE-backed firms benefit from relaxed financing constraints, enhanced managerial capabilities, and strategic support that enables faster expansion than comparable non-PE firms. The evidence points to a consistent pattern: PE investors help portfolio companies pursue both organic initiatives, such as entering new markets or expanding product lines,

and acquisitive strategies through buy-and-build platforms. These mechanisms allow PE-backed firms to scale more rapidly, strengthen competitive positioning, and capture synergies that would be difficult to achieve without external ownership. Although the emphasis placed on growth varies across deals and industries, the broader research consensus affirms that growth initiatives form a core pillar of modern private equity value creation, complementing operational, financial, and governance improvements.

3.8 Historical investment performance of buyout-backed companies

The report has so far outlined how buyout funds create value in their portfolio companies through operational, financial, governance, and growth-related mechanisms. To assess the effectiveness of these value-creation methods, the following section reviews several prominent empirical studies on the investment performance of PE buyouts.

Empirical evidence generally supports the view that PE buyouts have outperformed public equity markets, particularly before the mid-2010s. Harris, Kaplan and Jenkinson (2014) analyze over 1,400 buyout and venture capital funds from 1984 to 2008 and find that buyout funds outperformed the S&P 500 by roughly 3 % annually, or 20-27 % in total, based on the Public Market Equivalent (PME) method. Similarly, Higson and Stucke (2012), studying 1,169 U.S. buyout funds between 1980 and 2008, report an annual out-performance of approximately 500 basis points relative to the S&P 500, consistent across both IRR and money-multiple measures. Robinson and Sensoy (2011) also find that private equity funds generated 15 % higher cumulative returns and about 1.5 % annual excess returns after fees compared to public markets between 1984 and 2010, reinforcing evidence of superior long-term buyout performance.

Collectively, these studies suggest that buyout funds have historically delivered higher risk-adjusted returns than public equities, largely driven by active ownership, leverage, and operational value creation, though the performance gap appears to have narrowed after 2010.

While these studies primarily focus on investment performance metrics (IRR and PME) rather than direct financial outcomes of portfolio firms, they indicate that buyout funds have been effective in applying their value-creation strategies. The analysis in this thesis will instead focus on the post-2010 financial performance of PE-backed versus non-PE-backed companies, recognizing that strong portfolio performance is closely linked to overall fund-level success

3.8.1 PE buyout funds performance in Finland

Although there are no peer-reviewed academic studies specifically examining the performance of Finnish private equity buyout funds, several reliable industry analyses have been conducted by Tesi, the Finnish Venture Capital Association (FVCA), and PwC, providing valuable insight into the market's investment returns and economic impact.

Tesi (2024) published its latest Survey of Investment Returns covering 45 Finnish private equity and venture capital funds raised between 2009 and 2020, including 22 buyout and growth funds and 23 venture capital funds. The analysis shows that Finnish PE funds have generated robust returns relative to public benchmarks, with a top-quartile PME of 1.62, a median PME of 1.07, and a bottom-quartile PME of 0.77 when compared to the MSCI Europe Index. The top 75 % of Finnish funds therefore outperformed listed equity markets, indicating strong value creation across vintages. In addition, the IRR for Finnish buyout and growth funds averaged 15 %, while the top-quartile funds achieved IRRs exceeding 20 %, placing them broadly in line with or above European averages. Over 90 % of funds launched after 2010 were reported to have positive net returns, illustrating the sector's consistent performance following the global financial crisis. Tesi concludes that the Finnish PE market has matured into a globally competitive segment, combining local operational expertise, disciplined fund governance, and active international investor participation, resulting in sustainable, long-term value creation.

The Finnish Venture Capital Association (FVCA) and PwC (2023) provide complementary evidence from a portfolio-company perspective, analyzing the economic and operational

impact of PE investors in Finland. Their Impact Study shows that PE-backed Finnish companies achieved an average revenue growth of 43 % over the preceding five-year period, compared to 4 % among comparable non-PE-backed firms. PE-backed firms collectively generated more than €23 billion in annual revenues and employed over 60,000 people, demonstrating the sector's importance to the Finnish economy. The study attributes this strong performance to active ownership, improved strategic focus, and professionalization of management processes following buyouts. These findings provide robust empirical support for the view that private equity ownership enhances financial performance and growth not only at the fund level but also across the broader Finnish corporate landscape.

3.8.2 Synthesis of the historical performance of PE

In summary, the broader performance literature indicates that buyout funds have historically generated competitive or superior returns relative to public markets, particularly before the mid-2010s. While the drivers of this outperformance vary across studies, most papers attribute it to a combination of operational improvements, incentive alignment, disciplined capital structures, and strong growth-oriented value creation. Recent research shows that PE-backed firms often scale faster than their peers, whether through organic expansion or buy-and-build strategies, contributing meaningfully to exit performance. At the same time, performance has become more heterogeneous across vintages and regions, reflecting changing market conditions and the maturation of the industry. Finnish evidence, while not yet widely peer-reviewed, aligns with these international findings: analyses by Tesi (2024), the Finnish Venture Capital Association, and PwC (2023) consistently report strong returns for Finnish PE funds and substantial revenue and employment growth among PE-backed companies. Collectively, this highlights the relevance of examining value creation mechanisms within the Finnish mid-market and underscores the need for firm-level performance analysis, which remains scarce in existing research.

Having discussed the value-creation mechanisms through which buyout funds enhance the performance of their portfolio companies and reviewed empirical evidence comparing PE-backed and non-PE-backed firms investment performance, the following section introduces key theoretical frameworks that help explain the underlying reasons for the strong performance typically observed in PE-backed companies.

4 Theoretical frameworks of PE-backed company performance

This section outlines two key theoretical frameworks, Agency Theory and the Resource-Based View (RBV), that help explain the strong performance typically observed in PE-backed companies.

4.1.1 Agency theory

4.1.1.1 General application of Agency theory

Eisenhardt (1989) provides one of the most comprehensive assessments of agency theory as a framework for understanding incentive alignment and governance within organizations. The theory addresses the principal-agent problem that arises when the goals of owners (principals) and managers (agents) diverge and when information asymmetry prevents perfect monitoring. Eisenhardt explains that optimal contracts, whether behavior- or outcome-based, can align incentives by linking managerial rewards to firm performance or by increasing transparency through stronger information systems. These mechanisms reduce agency costs such as managerial opportunism and inefficient resource allocation, ultimately improving firm performance. By reframing organizational relationships through the lens of risk, incentives, and control, agency theory highlights how effective governance structures and incentive schemes contribute directly to superior economic outcomes

According to Eisenhardt (1989), the effectiveness of agency mechanisms, such as performance-based compensation, managerial ownership, and enhanced monitoring, has direct implications for organizational performance. When managers' incentives are tied to measurable outcomes, they are more likely to prioritize efficiency, profitability, and long-term value creation. Moreover, stronger information systems reduce information asymmetry, enabling better oversight and resource allocation. Conversely, poorly aligned incentive systems can distort managerial behavior, encouraging risk aversion or short-term decision-making that harms firm value. In essence, agency theory explains that by

reducing information and incentive misalignments, firms can achieve higher productivity, improved governance quality, and superior financial performance (Eisenhardt, 1989, pp. 64-69).

The implications of Eisenhardt's framework are highly relevant to the private equity setting, where buyout funds explicitly seek to minimize agency costs through concentrated ownership, active monitoring, and performance-linked compensation. In leveraged buyouts, PE owners reduce the separation between ownership and control by requiring management co-investment and by imposing outcome-based governance systems that mirror Eisenhardt's prescriptions for efficient contracting. These structures motivate managers to act in the investors' interests, mitigate free-cash-flow problems, and foster value creation through productivity and profitability gains. Hence, agency theory provides a powerful theoretical foundation for explaining why PE-backed firms often outperform non-PE firms, their ownership and incentive design directly address the agency conflicts that typically weaken non-PE backed company performance.

4.1.1.2 Agency theory in PE

Bratton (2008) applies agency theory to the private equity model, arguing that buyouts serve as a "laboratory" for testing incentive alignment and control efficiency. He highlights that leveraged buyouts commonly give management equity stakes of 10-20%, a structure that sharply reduces agency conflicts compared to the dispersed ownership in public firms. High leverage further disciplines management by requiring predictable cash flows and curbing wasteful investment behavior. Bratton identifies three central mechanisms for agency-cost reduction: debt discipline, equity-based compensation, and intensive investor monitoring. Empirical evidence cited in the paper shows that post-buyout, operating margins typically improve by 10-20%, demonstrating how concentrated ownership and incentive realignment enhance firm performance while still introducing new, smaller-scale agency risks between general and limited partners.

Analyzing 238 UK buyouts between 1993 and 2003, Meuleman et al. (2009) provide empirical support for the agency theory view that governance alignment drives superior post-buyout performance. Their findings show that management co-investment and PE oversight lead to average productivity increases of 12-15%, sales growth of roughly 10%, and significant employment expansion in firms previously suffering from agency inefficiencies. The study also finds that divisional buyouts, where agency conflicts are initially highest, exhibit the greatest post-buyout performance gains. Moreover, buyouts backed by more experienced PE investors outperform others by up to 8 percentage points in productivity improvements, confirming that incentive realignment and expertise jointly contribute to performance outcomes.

Wright et al. (2009) synthesize multiple international datasets to quantify the impact of private equity ownership on firm performance through agency-cost reduction. They report that, on average, operating profitability (EBITDA/revenue) rises by 5-15% following buyouts, while cash-flow-to-sales ratios improve by roughly 30-40% relative to pre-buyout levels. These improvements are most pronounced in management buyouts, where managerial ownership stakes increase from near-zero to 5-15% of equity. The authors attribute these gains to the elimination of managerial slack and the direct link between managerial wealth and firm performance. However, they also note that excessive leverage can create new agency frictions, particularly with creditors, highlighting the balance required for sustainable performance.

4.1.1.3 Synthesis of the agency theory in PE

Taken collectively, agency-based studies illustrate that PE ownership alters organizational incentives in ways that systematically reduce managerial slack and promote value-oriented behavior. While empirical findings differ in the magnitude of improvements, the overarching pattern remains clear: tighter governance and enhanced incentive alignment tend to increase efficiency, accountability, and strategic execution. This theoretical perspective directly motivates the expectation that PE-backed firms will outperform

non-PE firms in dimensions linked to managerial discipline, such as revenue growth, operational effectiveness, and resource allocation.

4.1.2 Resource-Based View (RBV) Theory

4.1.2.1 General application of the RBV

Barney (1991) introduces the Resource-Based View (RBV) as a theory explaining why some firms perform better than others over time. He argues that a company's competitive advantage comes from its unique internal resources and capabilities, for example, skilled employees, strong brand reputation, proprietary technology, or effective management systems. These resources must be valuable, rare, difficult to copy, and hard to replace (the VRIN framework) for them to create long-term success. According to Barney, differences in performance between firms are not only due to market conditions, but also to how effectively companies identify, develop, and use these internal strengths. Firms that manage to build and protect such distinctive resources can achieve sustained superior performance compared to their competitors.

The Resource-Based View provides a valuable framework for understanding how private equity ownership can enhance firm performance. In the buyout setting, PE investors often act as catalysts that identify and strengthen a company's internal resources and capabilities, whether through improved management expertise, better strategic focus, or access to new networks and technologies. By doing so, they help portfolio companies build valuable, rare, and hard-to-imitate capabilities, consistent with Barney's (1991) VRIN framework. Through active ownership, capital infusion, and managerial development, buyout funds effectively support firms in unlocking and exploiting their underutilized resources, leading to sustained competitive advantage and stronger long-term performance.

4.1.2.2 RBV in Private Equity

Pang (2021) applies the Resource-Based View to analyze how private equity firms create and sustain competitive advantage through the development and use of internal capabilities. Drawing on 14 in-depth interviews with senior practitioners representing over 425 years of cumulative PE experience, the study identifies 32 key value-creation drivers across the PE value chain, most of which exhibit at least one VRIO attribute (valuable, rare, inimitable, and organizationally embedded). The research highlights that 78 % of respondents ranked deal-sourcing competence as the most critical capability, followed by governance and management capabilities and strategic alignment within portfolio firms. Additionally, 93 % emphasized incentive alignment as a vital mechanism for managerial motivation, and 86 % cited accurate market opportunity assessment as key to growth and profitability. The findings confirm that PE firms' proprietary networks, managerial expertise, and change-management capabilities constitute unique internal resources that directly enhance operational efficiency and exit performance, providing strong empirical support for RBV as an explanatory framework of value creation in private equity.

Landau et al. (2012) extend value-creation analysis in private equity by applying the Resource-Based View (RBV) alongside agency theory. Drawing on survey evidence from 271 European buyouts analyzed with PLS-SEM, they show that PE investors create value not only via governance and incentives but also by developing and transferring valuable, rare and hard-to-imitate capabilities within portfolio firms. PE owners contribute managerial know-how, strategic guidance and access to industry networks, strengthening organizational routines and decision-making. These interventions are associated with improvements in profitability, operational efficiency and strategic flexibility, leading the authors to characterize buyout investors as "resource orchestrators" who combine financial capital with intangible resources to generate durable competitive advantages.

Having now discussed the background and functioning of private equity, identified the key value-creation mechanisms employed by buyout funds, and presented empirical

evidence on both their effectiveness and investment performance. This paper has also introduced two theoretical frameworks, Agency Theory and Resource-Based View (RBV), to explain how PE investors enhance the value of their portfolio companies. The following section will present the data and methodology used in this study, followed by an analysis of how Finnish PE-backed firms have performed financially relative to non-PE-backed firms during the period 2015-2024.

4.1.2.3 Synthesis of the RBV theory in PE

Overall, RBV-based studies portray private equity investors as resource orchestrators who strengthen portfolio companies through capability development, strategic guidance, and access to specialized networks. These interventions enhance firms' internal resources in ways that are difficult to imitate, offering a theoretical explanation for sustained performance improvements observed in many buyouts. The RBV perspective therefore complements the agency-based view by emphasizing that PE ownership improves not only incentive structures but also the underlying capabilities that support long-term growth and competitive advantage.

5 Data and methodology

5.1 Data

5.1.1 Data sources

The empirical analysis in this study is based on firm-level data obtained from the Orbis database, provided by Bureau van Dijk. Orbis is one of the most comprehensive global firm-level databases, offering standardized financial, ownership, and industry information across private and public companies. It allows for detailed cross-sectional and longitudinal analyses of company performance, which makes it particularly suitable for studying private equity (PE) investments and their effects on portfolio firms.

The data used in this thesis covers Finnish limited liability companies (Osakeyhtiö) that were active during the period under examination. The dataset includes both PE-backed and non-PE-backed firms, with the investment years defining the cohort structure of the analysis. Specifically, four investment-year cohorts were constructed: 2015, 2016, 2017, and 2021. Each cohort includes firms that received private equity investment during the respective year and a corresponding control group of non-PE-backed firms active in the same period.

The initial sample was extracted directly from Orbis using the following filtering criteria:

- Country: Finland
- Status: Active firms during the observation period
- Minimum annual revenue: €1 million (to ensure economic relevance and exclude micro-firms)
- Availability of key financial variables required for the analysis (revenue, EBITDA, total assets, debt, number of employees)
- Industry classification based on NACE Rev. 2 codes

To ensure comparability of firms, only industries with both PE-backed and non-PE-backed companies were retained. The final dataset therefore represents a broad cross-section of Finnish companies across multiple industries, including, but not limited to, professional services, healthcare, technology, construction, and manufacturing.

Information on private equity ownership was collected primarily from Orbis ownership data and cross-validated through additional public sources when necessary (e.g., company websites, news articles, and private equity firm disclosures). This ensured that only genuine PE-backed firms were included in the treated sample.

Data cleaning procedures were conducted to remove duplicate entries, companies with missing core variables, and extreme outliers (e.g., unrealistically high or negative financial ratios). After this process, the cleaned dataset formed the foundation for the matching analysis and subsequent performance comparisons.

5.1.2 Sample construction

The construction of the analytical sample followed a multi-step process designed to ensure comparability between PE-backed and non-PE-backed firms. The objective was to build a balanced dataset that allows for an unbiased estimation of the performance effects associated with private equity ownership.

The process began with the identification of PE-backed Finnish firms that had received buyout investments during the years 2015, 2016, 2017, and 2021. These firms constitute the treatment group in the analysis. Unlike many previous studies that rely solely on Orbis (or similar database) ownership classifications, the identification in this thesis was conducted manually to ensure higher accuracy. Specifically, the portfolio company lists of all major Finnish private equity buyout funds, including, for example, CapMan, Intera Partners, Sentica, Vaaka Partners, Sponsor Capital, and MB Funds, were systematically reviewed to identify portfolio companies that received investments during the target years.

In addition, smaller domestic buyout funds and other relevant investors active in Finland were also reviewed to ensure comprehensive coverage. International PE funds' portfolio companies were explicitly excluded from the sample, as their Finnish portfolio firms are typically large in scale and not directly comparable to the domestic mid-market focus of Finnish buyout investors. Similarly, minority growth or venture capital investments were excluded to maintain consistency with the study's emphasis on buyout-type ownership structures.

The control group of non-PE-backed firms was constructed from the Orbis database using the same inclusion criteria as the treatment group. Specifically, the dataset included only Finnish limited liability companies (Osakeyhtiö) that were active during the respective cohort year and had sufficient financial data available. To ensure economic relevance and exclude micro-sized entities, firms with annual revenue below €1 million were removed from the sample.

For both PE-backed and non-PE-backed firms, the following key financial and operational variables were extracted from Orbis:

- NACE Rev. 2 industry cod
- Revenue
- EBITDA
- Number of employees (FTE)
- Debt (short-term and long-term)
- Total assets

All financial variables were collected for the investment year (the cohort year) and the three subsequent financial years following the investment. This time frame allows for capturing both the short-term post-acquisition effects on firm performance and the medium-term development trends across the different cohorts.

These variables form the foundation for both the matching procedure and the subsequent performance analyses, which examine indicators such as revenue growth, EBITDA development, leverage changes, and employment growth.

To enhance comparability, only firms operating in industries that contained both PE-backed and non-PE-backed companies were retained. Industry classification was based on the first two digits of the NACE Rev. 2 code, which capture the firm's main sectoral characteristics while maintaining sufficient sample sizes per industry.

After the identification and cleaning process, the data were organized into four investment-year cohorts (2015, 2016, 2017, and 2021). Each cohort includes all PE-backed firms that received investment during the respective year, together with a corresponding pool of non-PE-backed firms active in the same period. This cohort-based structure allows the analysis to account for time-specific factors such as macroeconomic conditions and business cycle effects that may influence firm performance.

Across all cohorts, the total number of PE-backed firms identified manually was 32 while the initial control pool of non-PE firms consisted of approximately 10 651 companies before matching. The subsequent propensity score matching (PSM) procedure, described in Section 5.1.3, was then applied to refine the control sample and create balanced treatment-control pairs. The final sample sizes and industry distributions for each cohort are presented in Table 1.

5.1.3 Matching procedure (PSM)

To ensure that the comparison between PE-backed and non-PE-backed firms is not biased by differences in observable firm characteristics, this study employs a Propensity Score Matching (PSM) approach. PSM is a widely used quasi-experimental technique that allows researchers to estimate the treatment effect of an intervention, in this case, private equity ownership, by constructing a control group of non-treated firms with similar observable characteristics to the treated firms.

The matching procedure was conducted separately for each investment-year cohort (2015, 2016, 2017, and 2021). The first step involved estimating the propensity score, which represents the probability of a firm being PE-backed given a set of observed pre-investment characteristics.

Formally, the propensity score for firm i is defined as:

$$P_i = \Pr (PE_i = 1 | X_i) = \frac{e^{\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki}}}{1 + e^{\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki}}} \quad (1)$$

where PE_i is a binary variable indicating whether firm i is a PE-backed (1) or not (0), and X_i is a vector of a firm-specific covariates

The model parameters were estimated by maximizing the log-likelihood function, defined as:

$$LL = \sum_i [PE_i \ln (p_i) + (1 - PE_i) \ln (1 - p_i)], \quad (2)$$

where p_i represents the estimated probability of being PE-backed. The linear predictor was defined as:

$$Z_i = \beta_0 + \beta_1 X_{1i} + \dots + \beta_k X_{ki}, \quad (3)$$

from which the propensity score for each firm was derived using logistic transformation

$$p_i = \frac{e^{Z_i}}{(1 + e^{Z_i})} \quad (4)$$

The logistic regression model included the following explanatory variables, measured in the investment year (the year of the PE transaction for treated firms):

- Firm size, measured as the natural logarithm of total assets (log size)
- Profitability, measured by EBITDA margin

- Leverage, measured as total debt divided by total assets
- Industry dummies, based on two-digit NACE Rev. 2 codes

The regression parameters were estimated using Excel Solver with the Generalized Reduced Gradient (GRG Nonlinear) optimization method. To ensure model stability and prevent extreme coefficient values, all parameters were constrained between -10 and +10, and the convergence threshold was set to 1E-6.

Once the propensity scores were calculated for all firms, common support was applied to retain only those observations where PE-backed and non-PE-backed firms had overlapping propensity score values. Firms falling outside this region were excluded to avoid extrapolation bias.

After applying common support, each PE-backed firm was matched to comparable non-PE firms using nearest-neighbor matching with replacement, weighted by the estimated Average Treatment effect on the Treated (ATT) weights. These weights were computed directly from the propensity scores to balance the contribution of each control firm according to its similarity to the treated firm.

The final matched sample therefore consists of PE-backed firms (N=32) and their corresponding non-PE counterparts (N=3918) with statistically similar observable characteristics during the investment year. This approach minimizes selection bias and ensures that subsequent comparisons of performance outcomes, such as revenue growth, profitability changes, leverage dynamics, and employment development, can be more confidently attributed to differences in ownership type rather than pre-existing firm heterogeneity.

5.1.4 Descriptive statistics

To provide an overview of the data and to better understand the characteristics of PE-backed and non-PE-backed firms across cohorts, this section presents the descriptive

statistics of the final dataset after the matching procedure. The aim is to highlight the main characteristics of the sample and to confirm that the Propensity Score Matching (PSM) process achieved a balanced and representative comparison between the two groups.

Table 1 summarizes the mean values of key firm-level variables for all four investment-year cohorts (2015, 2016, 2017, and 2021), separately for PE-backed and matched non-PE-backed firms. The variables include firm size (log of revenue), profitability (EBITDA margin), leverage (debt-to-assets ratio), and number of employees (FTE).

Cohort (investment year)	Ownership	N (firms)	Log (revenue), Mean (STD)	EBITDA margin-%, Mean (STD)	Leverage-%, Mean (STD)	Employees, Mean (STD)
2015	PE-backed	8	9.6 (1.3)	10.4 (15.8)	42.5 (24.4)	50 (172)
	Non-PE (matched)	713	8.1 (1.5)	9.1 (24.3)	40.9 (39.9)	67 (160)
2016	PE-backed	7	9.0 (2.3)	15.0 (15.1)	44.0 (30.5)	88 (187)
	Non-PE (matched)	919	9.1 (1.0)	16.0 (22.6)	43.0 (137.7)	80 (120)
2017	PE-backed	6	9.7 (0.83)	9.7 (6.5)	57.9 (46.9)	150 (134)
	Non-PE (matched)	1187	8.3 (1.36)	11.0 (12.0)	93.3 (42.4)	87 (276)
2021	PE-backed	11	9.7 (0.6)	20.0 (20.0)	60.0 (30.0)	86 (94)
	Non-PE (matched)	1099	9.5 (1.6)	10.0 (70.0)	40.0 (90.0)	269 (1172)

Table 1. Summary statistics of PE-backed and non-PE-backed firms by cohort

Note: The values represent sample means of firms included in each matched cohort, with standard deviations shown in parentheses. Log(Revenue) refers to the natural logarithm of firm revenue. EBITDA Margin is calculated as EBITDA divided by revenue, expressed in percentage points. Leverage is total debt divided by total assets, also expressed in percentage points. FTE denotes the number of full-time employees.

The descriptive statistics in Table 1 indicate that PE-backed firms are generally larger in terms of revenue than their non-PE counterparts across most investment-year cohorts, particularly in 2015 and 2017, and to a lesser extent in 2021. This pattern is consistent with the typical investment focus of Finnish buyout funds, which tend to target

established mid-sized firms rather than small or early-stage companies. Profitability, measured by the EBITDA margin, varies across cohorts: PE-backed firms exhibit higher margins in 2015 and 2021, whereas the differences are marginal or slightly negative in 2016 and 2017. This suggests that PE investors may alternate between acquiring already well-performing firms and those with operational improvement potential, depending on prevailing market conditions. Leverage levels and employee counts display substantial variation within both groups, as reflected by the large standard deviations, underscoring the heterogeneity of firms included in the matched samples

In addition to firm-level averages, Table 2 shows the industry distribution of PE-backed and non-PE-backed firms by cohort, based on two-digit NACE Rev. 2 codes. This table illustrates the coverage of the main industries in the Finnish economy and confirms that the control group mirrors the sectoral distribution of the PE-backed sample.

Industry	2015 cohort		2016 cohort		2017 cohort		2021 cohort		All years (total)	
	PE-backed	Non-Pe	PE-backed	Non-Pe	PE-backed	Non-Pe	PE-backed	Non-Pe	PE-backed	Non-Pe
Manufacturing	2	147	1	106	0	0	2	133	5	386
Construction	0	0	2	272	1	477	1	0	4	749
Wholesale / retail	1	58	0	0	0	0	2	0	3	58
ICT	0	0	1	101	1	184	0	0	2	285
Professional / business services	2	261	2	316	3	356	4	822	11	1755
Healthcare & education	1	138	1	124	1	170	1	144	4	576
Other	1	105	0	0	0	0	1	0	2	105

Table 2. Industry distribution of PE-backed and non-PE-backed firms by cohort

5.2 Methodology

5.2.1 Analytical framework

The objective of the empirical analysis is to examine how private equity (PE) ownership influences the post-investment performance of portfolio firms relative to comparable

non-PE-backed companies. Building on the matched datasets described in the previous section, the methodology applies a combination of descriptive and causal inference techniques to evaluate whether PE-backed firms exhibit systematically different development patterns following investment.

The analysis is conducted separately for each investment-year cohort (2015, 2016, 2017, and 2021) to account for potential differences in macroeconomic conditions and deal environments across time. For each cohort, the matched sample of PE-backed and non-PE-backed firms is used to compare post-investment changes in key performance indicators, including revenue growth, EBITDA development, leverage, and employment.

Two complementary analytical approaches are employed. First, the Average Treatment Effect on the Treated (ATT) is estimated using the propensity score matching (PSM) weights derived earlier. The ATT measures the mean difference in post-investment performance between PE-backed firms and their matched non-PE peers, thereby isolating the effect of PE ownership on firms with otherwise similar observable characteristics. Second, as a robustness check, a set of ordinary least squares (OLS) regressions is performed to verify whether the identified performance differences remain significant when controlling for firm-specific factors such as size, leverage, profitability, and industry.

The PSM procedure therefore serves as the methodological foundation for all subsequent analyses. It defines the balanced sample of comparable PE-backed and non-PE-backed firms within the region of common support, provides the ATT weights for estimating weighted mean differences, and forms the basis for the OLS regression robustness checks. As a result, both ATT and OLS analyses are conducted on the same matched dataset, ensuring internal consistency and comparability of results.

All performance metrics are measured over a three-year period following the investment year, consistent with prior literature examining medium-term operational and growth outcomes of buyout investments. This framework allows for assessing both the direction

and magnitude of performance changes attributable to PE ownership while maintaining internal validity through matched sample comparability.

5.2.2 Definition of Variables and Performance Metrics

To evaluate the post-investment development of PE-backed firms relative to their non-PE counterparts, several key financial and operational indicators were selected. The chosen variables capture different dimensions of firm performance, including growth, profitability, financial structure, and employment. All metrics are computed for the investment year (t_0) and the three subsequent financial years (t_1 - t_3) following the investment.

The variables used in the analysis are summarized below:

5.2.2.1 Revenue growth (CAGR):

Calculated as the compound annual growth rate of firm revenue between the investment year and the third post-investment year:

$$Revenue\ CAGR = \left(\frac{Revenue_{t_3}}{Revenue_{t_0}} \right)^{\frac{1}{3}} - 1 \quad (5)$$

This measure captures the average annualized rate of revenue expansion and reflects overall top-line growth performance.

5.2.2.2 EBITDA Development

Two indicators are analyzed in EBITDA development:

1. Absolute EBITDA Change, computed as:

$$\Delta EBITDA = EBITDA_{t_3} - EBITDA_{t_0} \quad (6)$$

2. EBITDA Margin Change (p.p.), measuring the change in profitability relative to revenue:

$$\Delta EBITDA_{Margin} = \left(\frac{EBITDA}{Revenue} \right)_{t3} - \left(\frac{EBITDA}{Revenue} \right)_{t0} \quad (7)$$

Together, these metrics capture both the absolute and relative improvement in operational profitability following PE ownership.

5.2.2.3 Leverage development

Defined as the change in the firm's debt-to-assets ratio over the same period:

$$\Delta Leverage = \left(\frac{Debt}{Assets} \right)_{t3} - \left(\frac{Debt}{Assets} \right)_{t0} \quad (8)$$

This measure reflects whether PE ownership is associated with an increase or decrease in financial leverage.

5.2.2.4 Return on Assets-% (ROA) change

This variable measures the change in operating profitability relative to the total asset base of a firm:

$$\Delta ROA = \left(\frac{EBITDA}{Total Assets} \right)_{t3} - \left(\frac{EBITDA}{Total Assets} \right)_{t0} \quad (9)$$

It captures how efficiently companies generate earnings (measured by EBITDA) from their assets over time.

5.2.2.5 Employment growth

Measured as the absolute change in the number of full-time equivalent employees between the investment year and the third post-investment year:

$$\Delta FTE = FTE_{t3} - FTE_{t0} \quad (10)$$

This provides an indication of human-capital development and organizational expansion over time.

All financial variables are expressed in nominal terms. Revenue and EBITDA values are reported in euros, while ratios (EBITDA margin, leverage) are expressed in percentage points. For all difference-based variables, positive values indicate improvement, while negative values represent a deterioration in performance.

5.2.3 Average Treatment Effect on the Treated (ATT)

To estimate the causal effect of PE ownership on firm performance, this study employs the Average Treatment Effect on the Treated framework. The ATT measures the average post-investment performance difference between PE-backed firms and a matched sample of comparable non-PE firms with similar observable characteristics prior to investment. By focusing on the treated firms (i.e., those that actually received PE investment), the ATT isolates the incremental impact of PE ownership within the region of common support identified through propensity score matching (PSM).

Formally, the ATT is defined as:

$$ATT = E[Y_1 - Y_0 | D = 1] \quad (11)$$

where Y_1 and Y_0 denote the potential outcomes (performance metrics) for treated and untreated firms, respectively, and $D=1$ indicates treatment (PE-backed firm). Because only one of these outcomes is observable for each firm, the counterfactual outcome for the treated firms $Y_0 | D = 1$ is estimated using the matched non-PE firms with comparable propensity scores.

In practice, the ATT for each performance variable was computed as the weighted mean difference between PE-backed and non-PE-backed firms in the post-matching sample:

$$ATT = \bar{Y}_{PE}^w - \bar{Y}_{Non-PE}^w \quad (12)$$

Where $\bar{Y}_{PE}^w - \bar{Y}_{Non-PE}^w$ represent the weighted averages of the outcome variable for the treated and control groups, respectively. The weights correspond to the PSM-derived ATT weights applied to each firm, ensuring that the contribution of control firms is proportional to their similarity to the treated firms in terms of the estimated propensity scores.

All ATT calculations were implemented in Microsoft Excel using the matched datasets for each cohort. Each performance metric, revenue CAGR, EBITDA change, EBITDA margin change, leverage change, ROA and FTE change, was analyzed separately. Statistical significance of the ATT estimates was evaluated using t-tests comparing the weighted means of the treated and control groups.

This approach provides an internally valid estimate of the average performance difference attributable to PE ownership, conditional on the observable firm characteristics included in the matching model. By using separate ATT estimations for each investment-year cohort, the analysis accounts for potential heterogeneity in market conditions and investment environments across time.

5.2.4 OLS Regression analysis

To complement the ATT estimations and verify the robustness of the findings, additional ordinary least squares (OLS) regressions were conducted. While propensity score matching and ATT estimation account for observable differences between PE-backed and non-PE-backed firms, regression analysis provides an additional test of whether the observed performance differences remain significant when controlling for firm-level characteristics within the matched sample.

For each investment-year cohort, a separate cross-sectional regression was estimated using the following general model:

$$Y_i = \alpha + \beta_1 PE_i + \beta_2 \text{Log}(\text{Revenue})_i + \beta_3 \text{EBITDA Margin}_i + \beta_4 \text{Leverage}_i + \sum_s \delta_s \text{Industry}_s + \varepsilon_i \quad (13)$$

Where,

- Y_i represents the post-investment performance metric (e.g., revenue CAGR, EBITDA change, EBITDA margin change, leverage change, ROA change, or FTE change)
- PE_i is a dummy variable equal to 1 for PE-backed firms and 0 for non-PE firms
- $\text{Log}(\text{Revenue})_i$, EBITDA margin_i , Leverage_i are firm-level control variables measured in the investment year
- $\sum_s \delta_s \text{Industry}_s$ are industry dummies based on two-digit NACE Rev. 2 classifications
- E_i is the error term.

The coefficient β_1 captures the estimated impact of PE ownership on the given performance metric, after controlling for firm size, profitability, leverage, and industry effects. Positive and statistically significant values of β_1 indicate that PE-backed firms outperform their non-PE peers in that specific metric.

The regressions were performed separately for each cohort (2015, 2016, 2017, and 2021) and each performance variable to account for temporal variation in investment cycles and sample composition. Statistical significance was assessed using conventional two-tailed t-tests, with standard significance levels of 1 %, 5 %, and 10 %.

This robustness analysis provides an additional layer of validation for the ATT results by testing whether the identified performance differences persist after controlling for firm-specific and industry-related heterogeneity. When interpreted alongside the ATT

estimates, the regression results help confirm the consistency and credibility of the main findings regarding the post-investment performance of PE-backed firms in Finland.

In summary, this chapter has outlined the empirical methodology used to evaluate the performance effects of private equity ownership on Finnish portfolio companies. The propensity score matching (PSM) framework served as the foundation for all analyses, defining the balanced dataset used in both the ATT and regression estimations. The ATT measured the weighted mean performance differences between PE-backed and comparable non-PE-backed firms, while the OLS regressions provided a robustness check for these results by controlling for firm-specific and industry characteristics. The following chapter presents the empirical findings derived from these methods.

6 Results and analysis

This section presents the empirical findings on the post-investment performance of Finnish PE-backed companies compared with matched non-PE-backed firms. The analysis builds upon the datasets and methodological framework described in Chapters 5.1 and 5.2. Each of the four investment-year cohorts (2015, 2016, 2017, and 2021) includes firms that received private equity investment during the respective year, along with a control group of non-PE-backed companies matched using the propensity score matching (PSM) procedure.

The comparison focuses on firm performance over the three-year period following the investment year. The analyzed variables include revenue growth (CAGR), EBITDA development, EBITDA margin, return on assets (ROA), leverage (debt-to-assets ratio), and employment growth (FTE). Together, these indicators capture both growth and profitability dynamics as well as potential changes in firms' capital structure and operational scale.

The following subsections first present the Average Treatment Effect on the Treated (ATT) estimations, which measure the weighted mean performance differences between PE-backed and matched non-PE firms. The subsequent subsection presents the OLS regression results as robustness checks to assess whether the identified relationships remain statistically significant after controlling for firm-level and industry-level heterogeneity.

6.1 ATT results and discussion

Table 3 presents the results of the Average Treatment Effect on the Treated (ATT) estimations for each investment-year cohort. The table compares the weighted mean post-investment performance of PE-backed firms with that of matched non-PE-backed firms across key performance indicators, including revenue growth (CAGR), EBITDA development, EBITDA margin, return on assets (ROA), leverage, and employment growth (FTE). The ATT estimates represent the mean performance differences between the two groups

over the three-year post-investment period, with corresponding p-values and t-statistics indicating statistical significance levels.

Cohort 2015					
Metric	PE weighted mean	Non-PE weighted mean	ATT	P-value	T-test
CAGR	0.233	0.044	0.190	0.004	2.908
Abs EBITDA	0.035	0.062	-0.026	0.642	-0.466
EBITDA margin	-0.043	-0.080	0.037	0.320	0.995
ROA	0.129	0.124	0.005	0.891	0.137
Leverage	-0.021	-0.083	0.062	0.340	0.955
FTE growth	0.944	0.107	0.837	0.004	2.898
Cohort 2016					
Metric	PE weighted mean	Non-PE weighted mean	ATT	P-value	T-test
CAGR	0.660	0.048	0.612	0.003	2.937
Abs EBITDA	0.447	0.029	0.418	0.060	1.881
EBITDA margin	-0.047	-0.006	-0.041	0.441	-0.771
ROA	0.158	0.135	0.023	0.578	0.556
Leverage	0.156	-0.094	0.250	0.096	1.666
FTE growth	2.232	0.251	1.981	0.093	1.682
Cohort 2017					
Metric	PE weighted mean	Non-PE weighted mean	ATT	P-value	T-test
CAGR	0.535	0.056	0.479	0.003	2.961
Abs EBITDA	0.325	0.029	0.296	0.068	1.830
EBITDA margin	0.022	-0.028	0.050	0.758	0.309
ROA	0.217	0.155	0.062	0.702	0.382
Leverage	0.050	-0.036	0.086	0.594	0.533
FTE growth	1.297	0.651	0.646	0.000	3.991
Cohort 2021					
Metric	PE weighted mean	Non-PE weighted mean	ATT	P-value	T-test
CAGR	0.233	0.044	0.190	0.004	2.908
Abs EBITDA	0.035	0.062	-0.026	0.642	-0.466
EBITDA margin	-0.043	-0.080	0.037	0.320	0.995
ROA	0.129	0.124	0.005	0.891	0.137
Leverage	-0.021	-0.083	0.062	0.340	0.955
FTE growth	0.944	0.107	0.837	0.004	2.898

Table 3. ATT analysis results on Finnish PE-backed companies' performance compared to non-PE counterparts (cohort groups 2015-17 and 2021)

6.1.1 Cohort 2015

For the 2015 cohort, PE-backed firms demonstrate significantly stronger post-investment performance in both revenue and employment growth compared to their non-PE counterparts. The ATT for revenue CAGR is positive and statistically significant (+0.19, $p < 0.01$), suggesting that PE-backed firms achieved markedly faster top-line expansion during the first three years following investment. Employment growth (FTE) also shows a significant positive effect (+0.84, $p < 0.01$), indicating that PE-backed firms expanded their workforce more rapidly. In contrast, differences in profitability (EBITDA, ROA) and leverage are statistically insignificant, implying that the early post-investment phase primarily reflects growth-oriented activity rather than immediate efficiency or margin improvements.

6.1.2 Cohort 2016

The 2016 cohort exhibits a continuation of the positive growth effect associated with PE ownership. The ATT for revenue CAGR is again strongly positive and statistically significant (+0.61, $p < 0.01$). EBITDA and employment growth display economically meaningful differences (+0.42 and +1.98, respectively), though statistical significance is marginal ($p \sim 0.06-0.09$). The leverage difference (+0.25, $p = 0.10$) suggests moderate use of financial gearing among PE-backed firms, consistent with expansion financing typical in mid-market buyouts. These results imply that PE-backed firms in this cohort were actively pursuing growth and reinvestment strategies, while profitability improvements were still in the early stages of realization.

6.1.3 Cohort 2017

Results for the 2017 cohort confirm the persistent growth-oriented impact of PE ownership. PE-backed firms outperform their matched counterparts in both revenue and employment expansion, with ATT estimates of +0.48 for CAGR ($p < 0.01$) and +0.65 for FTE growth ($p < 0.001$). Differences in profitability and leverage remain statistically insignificant, although the direction of change (positive EBITDA and ROA effects) suggests

emerging operational improvements. Overall, the 2017 results reinforce the finding that PE-backed firms tend to grow more rapidly than comparable non-PE firms during the initial post-investment years, with profitability gains typically lagging behind.

6.1.4 Cohort 2021

The 2021 cohort displays results that are largely consistent with earlier investment years. PE-backed firms achieved higher revenue and employment growth compared to their matched non-PE peers, with ATT estimates positive across most metrics. Profitability and leverage differences remain statistically insignificant, suggesting that PE investors primarily drove top-line and operational expansion rather than immediate margin improvements. The 2021 cohort includes a sufficiently large number of firms and thus provides robust evidence of continued growth effects associated with PE ownership. Given the post-pandemic recovery environment, increasing inflation and interest rates as well as decreased deal activity during this period, these findings highlight the ability of Finnish PE funds to generate growth even amid changing economic conditions.

6.1.5 Descriptive summary

Overall, the ATT results in Table 3 indicate that Finnish PE-backed firms have consistently achieved superior revenue and employment growth relative to their matched non-PE counterparts across all investment-year cohorts. These effects are statistically significant and economically meaningful, highlighting the central role of growth acceleration as an early outcome of PE ownership. In contrast, the absence of significant profitability effects suggests that margin and efficiency improvements emerge more gradually, often beyond the three-year observation period. The findings align with previous empirical studies, which show that PE investors typically prioritize strategic growth and operational expansion in the early post-acquisition years, with financial performance enhancements materializing over longer horizons.

6.2 OLD regression results and discussion

The regression results presented in Table 4 confirm the consistent and positive association between private equity ownership and post-investment growth performance across all cohorts. The coefficients for revenue CAGR are positive and statistically significant in each investment year, indicating that PE-backed firms systematically outperformed comparable non-PE firms in terms of top-line expansion. These findings remain robust even after controlling for firm size, leverage, and profitability, suggesting that PE investors play an active role in driving sales and market growth within their portfolio companies.

Beyond revenue, the results also show significant positive effects for EBITDA growth in 2016 and 2017 and for FTE growth in 2016, implying that operational expansion and workforce scaling accompany PE ownership. However, changes in profitability metrics (EBITDA margin and ROA) remain statistically insignificant across all cohorts, consistent with prior findings that margin improvement typically materializes only in later ownership stages. Similarly, leverage effects are mixed and generally insignificant, indicating that financial restructuring or increased debt utilization were not primary short-term value creation levers for Finnish PE funds during the sample period.

Overall, the regression outcomes support the interpretation that PE-backed firms in Finland experience faster growth-oriented development during the first three post-investment years, while profitability and capital structure adjustments evolve more gradually. These results reinforce the conclusions drawn from the ATT analysis and align with international evidence highlighting that PE investors initially emphasize scaling, strategic repositioning, and operational expansion as key drivers of value creation.

Dependent variable	Cohort 2015	Cohort 2016	Cohort 2017	Cohort 2021	Commentary
CAGR growth	0.188***	0.603***	0.530***	0.255**	Strong positive effect: significant in all cohorts
EBITDA abs. change	0.096	0.408*	0.313***	0.032	Moderate positive effect (significant 16'–17')
EBITDA% change	0.012	-0.045	0.038	0.043	Positive, but statistically insignificant
ROA change	0.015	0.022	0.050	0.050	Positive, statistically insignificant
Leverage change	0.114	0.237	0.159	-0.034	Mild positive, insignificant or mixed
FTE growth	0.139	2.041***	0.898	0.898	Strong positive effect (significant only in 16')

Table 4. Summary of OLS Regression Results (Coefficient Estimates for PE Ownership Dummy)

Explanation of the table:

- Table reports coefficients for the PE ownership dummy variable obtained from ordinary least squares (OLS) regressions using propensity score-matched samples
- All models control for firm size (log revenue), leverage, EBITDA margin, and industry dummies.
- Statistical significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.
- Dependent variables capture three-year post-investment changes in firm performance relative to the investment year.

Note: Full regression outputs, including all control variables, standard errors, and model statistics for each cohort, are reported in appendices 1–4

6.3 Descriptive summary of both results

In summary, both the ATT and OLS analyses consistently demonstrate that PE-backed firms in Finland exhibit significantly higher revenue and employment growth compared to their matched non-PE counterparts, while short-term profitability and leverage differences remain statistically insignificant. The alignment of results across both estimation methods reinforces the robustness of these findings and supports the conclusion that PE ownership primarily enhances strategic expansion rather than immediate efficiency or margin improvement during the first three post-investment years.

6.4 Interpretation of results through theory and prior research

These findings align closely with the Resource-Based View, which suggests that performance improvements arise when external investors strengthen a firm's internal capabilities, management processes, and resource base. The systematically higher revenue and employment growth observed in PE-backed firms indicates that Finnish PE funds support

strategic initiatives, such as market and product expansions as well as capability upgrades, that enhance growth potential more quickly than they affect efficiency metrics.

Agency Theory also provides a complementary explanation for these results. PE ownership typically introduces stronger governance mechanisms, including closer monitoring, performance-based incentives, and more disciplined strategic decision-making. These mechanisms reduce agency costs and redirect managerial focus toward value-creating actions. However, the lack of immediate profitability or ROA improvement suggests that, in Finland, these governance effects translate first into expansion-oriented activities rather than short-term cost reductions or efficiency gains. This is consistent with the early-phase investment model documented in European buyout research, where operational changes and restructuring benefits tend to materialize only after several years.

The findings also fit well within the broader empirical literature on private equity. Prior studies (e.g., Kaplan & Strömberg, 2009; Acharya et al., 2013; Bergström et al., 2007) commonly report strong revenue growth and organizational scaling in PE-backed firms, while profitability effects are more mixed and often delayed. Research on Nordic buyouts similarly emphasizes operational value creation and conservatively leveraged transactions. This aligns with the insignificant leverage effects in the Finnish sample. Compared with the highly leveraged buyout model seen in U.S. and U.K. markets, Finnish PE deals tend to employ moderate gearing due to more conservative lending environments, smaller firm sizes, and industry compositions that require ongoing reinvestment.

The neutral ROA results reflect the growth-oriented strategies common among Finnish PE-backed companies, many of which operate in professional services, software, and other relatively asset-light sectors. In these industries, value creation often begins with capacity expansion, such as hiring new personnel, investing in digital processes, or scaling commercial functions, rather than with cost reduction or capital-intensive restructuring. These upfront investments increase the asset base and operating cost structure before the corresponding productivity and efficiency gains fully materialize, which can

temporarily suppress ROA in the early post-investment years. As such, flat ROA during the first three years is consistent with PE's focus on building scalable platforms that yield performance improvements over a longer horizon.

Overall, the results from both ATT and OLS analyses strongly support the interpretation that, in Finland, private equity ownership enhances firm growth and organizational development but does not lead to immediate profitability or capital structure adjustments. This outcome is consistent with both RBV and Agency Theory and aligns with prior European PE research, while also highlighting distinctive features of the Finnish market. The consistency across multiple cohorts and empirical methods reinforces the robustness of these conclusions.

7 Conclusion

The empirical results of this study reveal a clear and consistent performance pattern among Finnish PE-backed firms. Across all cohorts, PE ownership is associated with higher revenue and employment growth relative to comparable non-PE firms, while differences in profitability, leverage, and asset returns remain statistically insignificant. These findings indicate that PE investors in Finland predominantly create value through strategic scaling and organizational expansion rather than short-term financial restructuring or margin optimization. This section interprets these results through the theoretical frameworks discussed earlier and situates them within existing research on private equity performance and value creation.

The study's findings provide clear empirical support for the research hypothesis:

H₁: Finnish PE backed companies outperform their non-PE backed counterparts in financial metrics, particularly during the first three years following the investment.

This hypothesis is partially supported. PE-backed firms significantly outperform non-PE-backed firms in growth-related metrics such as revenue CAGR and employment expansion, confirming that PE ownership leads to stronger top-line and organizational growth in the short to medium term. However, the absence of statistically significant profitability improvements (EBITDA, ROA, and margin changes) suggests that this outperformance does not extend to all financial metrics. Instead, Finnish buyouts create value by prioritizing growth and scale during the early post-acquisition phase, with profitability gains likely materializing later in the investment lifecycle.

7.1 Agency-Theory Perspective

Under the Agency theory framework, PE investors improve firm performance primarily by reducing managerial agency costs through stronger governance, active monitoring, and performance-linked incentives. The consistent growth effects observed in the results

align with this interpretation: tighter ownership structures, direct board involvement, and equity-based compensation likely enhance managerial accountability and growth orientation. The statistically significant increases in revenue and employment suggest that management teams under PE ownership operate under clearer performance targets and strategic direction.

At the same time, the absence of short-term profitability effects indicates that efficiency improvements and cost reductions are not the main drivers of early post-investment performance. Instead, resources appear to be reinvested into expansion initiatives such as new market entries, product development, or acquisitions, rather than immediate margin gains. This supports the view that Finnish PE funds emphasize long-term value creation through strategic growth and governance discipline rather than aggressive short-term profit extraction, consistent with earlier findings by Kaplan and Strömberg (2009) and Achleitner et al. (2010).

7.2 Resource-Based View Perspective

From the Resource-Based View (RBV) perspective, the findings suggest that PE investors act as catalysts for resource enhancement and capability development. The positive revenue and employment effects across cohorts imply that PE-backed firms benefit not only from financial resources but also from access to managerial expertise, strategic networks, and operational know-how provided by their investors. These intangible inputs strengthen firms' ability to scale and compete, which explains the observed post-investment growth even in the absence of immediate profitability gains.

In this context, PE investors serve as resource orchestrators, reallocating, combining, and leveraging the portfolio company's internal capabilities to achieve sustainable growth. The Finnish PE environment, characterized by mid-market firms and moderate use of leverage, appears particularly conducive to this model. Rather than relying on high debt levels or cost optimization, Finnish buyouts derive their value creation potential from

strategic guidance, professionalization, and capacity building, echoing the resource-driven model of value creation documented in Northern European markets.

7.3 Comparison to Prior Research

When compared to international evidence, the Finnish results align more closely with the growth- and development-oriented model of PE ownership observed in other mature European markets rather than the highly leveraged, cost-cutting model historically prevalent in the U.S. and U.K. contexts. Similar to studies by Bergström et al. (2007) and Guo et al. (2011), this thesis finds that PE-backed firms outperform peers in growth-related metrics but show limited short-term profitability gains.

These findings also contribute to the limited empirical literature on Nordic PE performance. While prior Finnish studies have largely focused on deal-level characteristics and exit outcomes, this analysis demonstrates measurable post-investment firm-level effects. It confirms that the mechanisms of value creation identified in global PE research, governance alignment, resource enhancement, and professionalization, are also evident in Finland, albeit expressed primarily through growth and scaling rather than through immediate operational efficiency.

7.4 Limitations and future considerations

7.4.1 General limitations

While the results provide consistent evidence of growth-oriented value creation under PE ownership, several limitations should be acknowledged. First, the analysis relies on firm-level financial statements from the Orbis database, which, although extensive, may contain reporting inconsistencies, missing values, or variations in accounting practices among privately held firms. This may affect the precision of profitability and asset-return measures in particular.

Second, the study observes performance only within a three-year post-investment horizon. This captures the early operational phase of ownership but excludes longer-term effects such as margin expansion, productivity enhancement, innovation, international scaling, or exit outcomes. Many efficiency gains documented in prior research typically materialize later in the holding period and therefore remain outside the scope of this thesis.

7.4.2 Econometric limitations

From an econometric perspective, the study faces several constraints. Although PSM reduces observable differences between PE-backed and non-PE firms, unobserved factors, such as management quality, investor involvement intensity, or strategic positioning, may still influence performance outcomes, potentially introducing selection bias or endogeneity. Additionally, the regression models may be subject to multicollinearity among control variables (e.g., size, leverage, and profitability), heteroskedasticity in firm-level data, and omitted variable bias due to factors not captured in Orbis (e.g., governance structures, operational practices, or deal-level characteristics). While robust standard errors and matched samples mitigate some concerns, these limitations constrain the causal interpretation of the results.

Finally, the modest sample size of Finnish PE-backed firms, driven by the relatively small scale of the national buyout market, limits the statistical power of some analyses, particularly those related to profitability and asset returns. This restricts the ability to detect smaller effect sizes or sector-specific patterns.

7.4.3 Future considerations

Future research should extend the analysis beyond the early post-investment period to examine long-term performance dynamics, including margin development, productivity improvements, innovation output, and eventual exit outcomes. Longitudinal studies

covering 5-10 years would help capture whether Finnish PE-backed firms achieve stronger efficiency gains and sustained financial performance beyond the initial scaling phase.

A valuable extension would involve qualitative research, such as interviews with PE investors, portfolio company managers, or board members, to better understand the mechanisms of active ownership, governance involvement, and operational changes. Combining quantitative and qualitative evidence may uncover differences in hands-on involvement, strategic priorities, or managerial changes that are not observable in financial databases.

Cross-country comparisons within the Nordic region or across Europe would also be beneficial. Such studies could reveal how institutional frameworks, lending environments, sector composition, and cultural factors influence PE value-creation strategies and post-investment outcomes. Comparative research could help explain why Finnish buyouts appear more growth-oriented and less leverage-driven relative to Anglo-American markets.

Finally, future studies should explore emerging performance dimensions, including ESG integration, digital transformation capability, internationalization strategies, and buy-and-build acquisition activity. These factors increasingly shape modern PE value creation and may offer deeper insight into how Finnish PE funds adapt to evolving market and regulatory environments.

7.5 Synthesis

Taken together, the results suggest that the Finnish PE market operates under a growth-oriented buyout model, where value creation is achieved through strategic expansion, managerial professionalization, and capability building rather than short-term, leverage-driven restructuring. The coexistence of Agency-based governance alignment and RBV-based capability enhancement explains the consistent post-investment growth observed across cohorts. PE investors appear to act as both monitors and enablers, ensuring

strategic discipline while simultaneously strengthening and expanding the resource base of portfolio firms.

This dual mechanism positions Finnish PE as an important driver of mid-market firm development and a facilitator of sustainable corporate growth, emphasizing scaling and long-term competitiveness over immediate cost efficiency or margin maximization.

8 References

- Acharya, V., Kehoe C. & M. Reyner (2009). Private Equity versus Plc Boards in the U.K.: A Comparison of Practices and Effectiveness. *Journal of Applied Corporate Finance*, 21(1), 45-56. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1324019.
- Achleitner, A.K, Braun, R., Engel, N., Figge, C. & Tappeiner, F. (2010). Value Creation Drivers in Private Equity Buyouts: Empirical Evidence from Europe. *The Journal of Private Equity*, 13(2), 17-27. https://www-jstor-org.proxy.uwasa.fi/stable/43503632?seq=1#metadata_info_tab_contents.
- Anders, G. (1992). The `barbarians' in the boardroom. *Harvard Business Review* 70(4): 79. <https://hbr.org/1992/07/the-barbarians-in-the-boardroom>.
- Axelsson, U., Jenkinson, T., Strömberg, P. & Weisbach, M.S. (2008). Leverage and Pricing in Buyouts: An Empirical Analysis. Swedish Institute for Financial Research. IDEAS Working Paper Series from RePEc. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1027127.
- Batt, R. & Applebaum, E. (2021). The agency costs of private equity: Why do limited partners still invest? *Academy of Management Perspectives*, 35(1), 45-68. Doi: 10.5465/amp.2018.0060
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://journals.sagepub.com/doi/10.1177/014920639101700108>
- Bergström, C., Grubb, M. & Jonsson, S. (2007). The Operating Impact of Buyouts in Sweden: A study of Value Creation. *The Journal of Private Equity*, 11(1), 22-39. <https://search-proquest-com.proxy.uwasa.fi/docview/236395841>.

- Biesinger, M., Bircan, C. & Ljungqvist, A. (2023). Value Creation in Private Equity. Swedish House of Finance Research Paper, 20-17, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607996
- Boucly, Q., Sraer, D. & Thesmar, D. (2011). Growth LBOs. *Journal of Financial Economics*, 102(2), 432-453. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0304405X11001371?via%3Dihub>.
- Burrough, B. & Helyar, J. (1989). *Barbarians at the gate: The fall of RJR Nabisco*. Harper-Collins Publishers.
- Bratton, W. (2008). Private Equity's Three Lessons for Agency Theory. *European Business Organization Law Review*, 9, 509-533. Doi: 10. 1017/S1566752908005090
- Coates, G., Duffy, A., Whitfield, I. & Hills, W. (2007). Engineering management: operational design coordination. *Journal of Engineering Design*, 15(5), 433-446. <https://www-tandfonline-com.proxy.uwasa.fi/doi/full/10.1080/09544820410001697145>.
- Cotter, J. F. & Peck, S.W. (2001). The structure of debt and active equity investors: The case of the buyout specialist. *Journal of Financial Economics*, 59(1), 101-147. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0304405X00000830?via%3Dihub>.
- Demaria, C. (2013). *Introduction to Private Equity: Venture, Growth, LBO and Turn-Around Capital*. John Wiley & Sons. <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/detail.action?docID=1212550>.

- Driessen, J., Lin, T.C. & Phalippou, L. (2012). A New Method to Estimate Risk and Return of Nontraded Assets from Cash Flows: The Case of Private Equity Funds. *The Journal of Financial and Quantitative Analysis*, 47(3), 511-535. https://www-jstor-org.proxy.uwasa.fi/stable/41653558?seq=1#metadata_info_tab_contents.
- Eisenhardt, K. (1989). Agency Theory: An Assessment and Review. *The Academy of Management Review*, 14(1), 57-74. <https://www.jstor.org/stable/258191>
- Fama, E.F. (1980). Agency Problems and the Theory of the Firm. *Journal of Political Economy*, 88(2), 288-307. <https://www.jstor.org/stable/1837292?seq=1>.
- Finnerty, J.D. (1988). Financial Engineering in Corporate Finance: An Overview. *Journal of Financial Management*, 17(4), 14-33. <http://web.a.ebsco-host.com.proxy.uwasa.fi/ehost/pdfviewer/pdfviewer?vid=1&sid=32329643-184d-4901-8d3e-d3348fbaf2a0%40sessionmgr4006>.
- Gadiesh, O. & MacArthur, H. (2008). *Memo to the CEO: Lessons from Private Equity Any Company Can Use*. Harvard Business Press.
- Guo, S., Edith, H.S. & Weihong, S. (2007). Do Buyouts (Still) Create Value? *The Journal of Finance*, 66(2), 479-517. https://www-jstor-org.proxy.uwasa.fi/stable/29789787?seq=1#metadata_info_tab_contents.
- Hammer, B., Knauer, A., Pflucke, M. & Schwetzler, B. (2017). Inorganic growth strategies and the evolution of the private equity business model. *Journal of Corporate Finance*, 45, 31-63, <https://www.sciencedirect.com/science/article/abs/pii/S0929119917302122?via%3Dihub>.
- Hammer, B., Marcotty-Dehm, N., Schweizer, D. & Schwetzler, B. (2022). Pricing and value creation in private equity-backed buy-and-build strategies. *Journal of Corporate*

Finance, 77, 102285, <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0929119922001286>.

Harris, R.S., Jenkinson, T. & Kaplan, S.N. (2016). How Do Private Equity Investments Perform Compared to Public Equity? *Journal of Investment Management*, 14(3), 1-27. <https://search-proquest-com.proxy.uwasa.fi/docview/1812855947/?pq-origsite=primo>.

Harris, R., Siegel, D. & Wright, M. (2005). Assessing the Impact of Management Buyouts on Economic Efficiency: Plant level Evidence from the United Kingdom. *The Review of Economics and Statistics*, 87(1), 148-53. https://www-jstor-org.proxy.uwasa.fi/stable/40042929?seq=1#metadata_info_tab_contents.

Higson, C. & Stucke, R. (2012). *The Performance of Private Equity*. London Business School & University of Oxford.

Holthausen, R.W. & Larcker, D.F. (1996). The financial performance of reverse lever-aged buyouts. *Journal of Financial Economics*, 42(3), 293-332. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/0304405X96008847?via%3Dihub>.

Invest, L. (2019). *Private Equity: Minority Investments and Buyouts, a Guide to working with Private Equity*. John Wiley & Sons.

Jensen, M.C. (1989). Eclipse of the Public Corporation. *Harvard Business Review*. <https://hbr.org/1989/09/eclipse-of-the-public-corporation>.

Jenkinson, T. & Sousa, M. (2015). What determines the exit decision for leveraged buyouts? *Journal of Banking & Finance*, 59, 399-408. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0378426615001715?via%3Dihub>.

- Johnson, G. & Whittington, R. (2017). *Exploring Strategy*. Pearson. <https://vaasa.vst-bridge.com/#/collection>.
- Kaplan, S.N. & Strömberg, P. (2009). Leveraged Buyouts and Private Equity. *The Journal of Economic Perspectives*, 66(12), 2642-2649. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0148296312001798?via%3Dihub>.
- Kaplan, S.N., Jenkinson, T. & Harris, R.S. (2014). Private Equity Performance: What do we know? *The Journal of Finance*, 69(5), 1851-1882. https://www-jstor-org.proxy.uwasa.fi/stable/43612946?seq=1#metadata_info_tab_contents.
- Kaplan, S. (1989). The Effects of Management Buyouts on Operating Performance and Value. *Journal of Financial Economics*, 24(2), 217-54. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/abs/pii/0304405X89900470?via%3Dihub>.
- Kaplan, S. & Schoar, A. (2005). Private Equity Performance: Returns, Persistence, and Capital Flows. *The Journal of Finance*, 60(4), 1791-1823. https://www-jstor-org.proxy.uwasa.fi/stable/3694854?seq=1#metadata_info_tab_contents.
- Landau, C., Bock, C., & Friesl, M. (2012). Beyond Agency Theory: Resource-Based Value Creation by Private Equity Firms. *Academy of Management Annual Meeting Proceedings*, 2012(1), 16810. <https://journals.aom.org/doi/10.5465/AMBPP.2012.16810abstract>
- Lichtenberg, F. & Siegel, D. (1990). The effects of leveraged buyouts on productivity and related aspects of firm behavior. *Journal of Financial Economics*, 27(1), 165-194. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/abs/pii/0304405X9090025U?via%3Dihub>.

- Loos, N. (2007). Value creation in leveraged buyouts: analysis of factors driving private equity investment performance. Springer Science & Business Media. <https://www.springer.com/gp/book/9783835093294>.
- Maeseneire, W.D. & Brinkhuis, S. (2012). What drives leverage in leveraged buyouts? An analysis of European leveraged buyouts' capital structure. Accounting and Finance 52. Accounting and Finance Association of Australia and New Zealand.
- McKinsey Global Private Markets Report 2025. <https://www.mckinsey.com/industries/private-capital/our-insights/global-private-markets-report#/>.
- Metrick, A. & Yasuda, A. (2010). The Economics of Private Equity Funds. The Review of Financial Studies, 23, 2303-2341. <https://gsm.ucdavis.edu/sites/main/files/file-attachments/metrickyasuda2010.pdf?1335905167>.
- Meuleman, M., Amess, K., Wright, M. & Scholes, L. (2008). Agency, strategic entrepreneurship and the performance of private equity backed buyouts. Entrepreneurship theory and practice, 33(1), 213-239. <https://journals-sagepub-com.proxy.uwasa.fi/doi/full/10.1111/j.1540-6520.2008.00287.x>
- Pang, K. (2021). Value Creation by Private Equity Firms: A Resource-based View. University of Missouri, Dissertations, 1039, <https://irl.umsl.edu/dissertation/1039>.
- PWC & Finnish Venture Capital Association (2023). Venture capital and private equity investors' impact on the Finnish economy: Impact Study. https://paaomasijoittajat.fi/app/uploads/2023/10/FVCA_PwC_Impact-study_2023.pdf.
- Robinson, D.T. & Sensoy, B.A. (2011). Private Equity in the 21st Century: Liquidity, Cash Flows, and Performance from 1984-2010. SSRN Electronic Journal. http://efa2011.efa-online.org/fisher.osu.edu/blogs/efa2011/files/FIE_2_1.pdf.

- Rosenbaum, J. & Pearl, J. (2013). *Investment Banking: Valuation, Leveraged Buyouts, and Mergers and Acquisitions*. John Wiley & Sons.
- Stowell, D.P. (2013). *Investment Banks, Hedge Funds, and Private Equity*. Academic Press cop. <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/detail.action?docID=1001359>.
- Swaay, Van Hans & Megally, Esmeralda & Leleux, Benoit (2015). *Private Equity 4.0*. John Wiley & Sons. <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/detail.action?docID=1895776>.
- Talmor, Eli & Vasvari, Florin (2011). *International Private Equity*. John Wiley & Sons. <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/detail.action?docID=699500>.
- Tesi (2024). *Tesi's Survey of Investment Returns: Finnish VC and PE Market*. <https://tesi.fi/wp-content/uploads/2025/04/Survey-of-investment-returns-from-the-Finnish-PEVC-2025.pdf>.
- Valkama, P., Maula, M., Nikoskelainen, E. & Wright, M. (2013). Drivers of holding period firm-level returns in private equity-backed buyouts. *Journal of Banking & Finance*, 37(7), 2378-2391. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0378426613000757?via%3Dihub>.
- Wilson, N., Wright, M., Siegel, D. & Scholes, L. (2011). Private equity portfolio company performance during the global recession. *Journal of Corporate Finance*, 18(1), 193-205. <https://www-sciencedirect-com.proxy.uwasa.fi/science/article/pii/S0929119911001258?via%3Dihub>.

Appendices

Appendix 1. OLS regression full results (cohort 2015)

Block 1: Dependent variable: CAGR 2015-18				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.304	0.053	5.719	0.000
Manufacturing	-0.051	0.025	-2.015	0.044
Healthcare/Education	-0.136	0.024	-5.627	0.000
Wholesale/Trade	-0.045	0.036	-1.233	0.218
Professional/Admin	-0.061	0.021	-2.902	0.004
Transportation	-0.051	0.085	-0.601	0.548
Log revenue 2015	-0.025	0.006	-3.801	0.000
EBITDA 15	-0.036	0.028	-1.269	0.205
Leverage 2015	0.060	0.018	3.424	0.001
PE status	0.188	0.066	2.830	0.005
R ²	0.112			
Observations	721			

Block 2: Dependent variable: Absolute EBITDA change 2015-18				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.203	0.087	2.331	0.020
Manufacturing	-0.015	0.041	-0.356	0.722
Healthcare/Education	-0.073	0.040	-1.838	0.066
Wholesale/Trade	-0.021	0.060	-0.352	0.725
Professional/Admin	-0.050	0.035	-1.458	0.145
Transportation	-0.091	0.139	-0.655	0.512
Log revenue 2015	-0.016	0.011	-1.555	0.120
EBITDA 15	0.264	0.047	5.673	0.000
Leverage 2015	-0.010	0.029	-0.335	0.738
PE status	0.096	0.109	0.880	0.379
R ²	0.058			
Observations	721			

Block 3: Dependent variable: EBITDA margin p.p. change 2015-18				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.139	0.028	4.868	0.000
Manufacturing	-0.072	0.014	-5.314	0.000
Healthcare/Education	-0.114	0.013	-8.783	0.000
Wholesale/Trade	-0.102	0.020	-5.207	0.000
Professional/Admin	-0.061	0.011	-5.436	0.000
Transportation	-0.130	0.046	-2.847	0.005
Log revenue 2015	0.000	0.003	0.081	0.936
EBITDA 15	-0.613	0.015	-40.245	0.000
Leverage 2015	-0.013	0.009	-1.411	0.159
PE status	0.012	0.036	0.332	0.740
R ²	0.698			
Observations	721			

Block 4: Dependent variable: ROA 2018				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.354	0.064	5.557	0.000
Manufacturing	-0.032	0.030	-1.047	0.296
Healthcare/Education	-0.078	0.029	-2.688	0.007
Wholesale/Trade	-0.014	0.044	-0.313	0.754
Professional/Admin	0.034	0.025	1.341	0.180
Transportation	-0.130	0.102	-1.278	0.202
Log revenue 2015	-0.021	0.008	-2.722	0.007
EBITDA 15	0.147	0.034	4.315	0.000
Leverage 2015	-0.028	0.021	-1.336	0.182
PE status	0.015	0.080	0.194	0.846
R ²	0.098			
Observations	721			

Block 5: Dependent variable: Leverage change 2015-18				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.139	0.080	1.729	0.084
Manufacturing	-0.033	0.038	-0.874	0.382
Healthcare/Education	-0.090	0.037	-2.453	0.014
Wholesale/Trade	-0.037	0.055	-0.674	0.500
Professional/Admin	-0.006	0.032	-0.179	0.858
Transportation	0.007	0.129	0.052	0.959
Log revenue 2015	-0.001	0.010	-0.086	0.931
EBITDA 15	-0.055	0.043	-1.276	0.202
Leverage 2015	-0.330	0.027	-12.465	0.000
PE status	0.114	0.100	1.131	0.259
R ²	0.185			
Observations	721			

Block 6: Dependent variable: FTE growth				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.110	0.265	0.416	0.678
Manufacturing	-0.168	0.126	-1.333	0.183
Healthcare/Education	0.080	0.121	0.664	0.507
Wholesale/Trade	-0.176	0.182	-0.967	0.334
Professional/Admin	-0.054	0.105	-0.515	0.607
Transportation	-0.083	0.424	-0.196	0.845
Log revenue 2015	0.007	0.032	0.218	0.828
EBITDA 15	0.071	0.142	0.499	0.618
Leverage 2015	0.160	0.087	1.833	0.067
PE status	0.139	0.331	0.419	0.675
R ²	0.012			
Observations	721			

Appendix 2. OLS regression full results (cohort 2016)

Block 1: Dependent variable: CAGR 2016-19				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.470	0.156	3.005	0.003
Business services	-0.239	0.136	-1.761	0.079
Manufacturing	-0.236	0.136	-1.733	0.083
Healthcare	-0.239	0.137	-1.745	0.081
ICT	-0.168	0.136	-1.230	0.219
Construction	-0.288	0.135	-2.125	0.034
Log Size 2016	-0.018	0.008	-2.377	0.018
EBITDA 2016	-0.050	0.031	-1.611	0.108
Leverage ratio 2016	0.000	0.005	-0.011	0.992
PE status	0.604	0.072	8.350	0.000
R ²	0.115			
Observations	926			

Block 2: Dependent variable: Absolute EBITDA change 2016-19				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.486	0.204	2.380	0.018
Business services	-0.219	0.177	-1.237	0.216
Manufacturing	-0.220	0.178	-1.236	0.217
Healthcare	-0.256	0.179	-1.431	0.153
ICT	-0.159	0.178	-0.894	0.372
Construction	-0.248	0.177	-1.401	0.162
Log Size 2016	-0.024	0.010	-2.344	0.019
EBITDA 2016	-0.077	0.041	-1.889	0.059
Leverage ratio 2016	0.000	0.006	0.058	0.954
PE status	0.408	0.094	4.324	0.000
R ²	0.044			
Observations	926			

Block 3: Dependent variable: EBITDA margin p.p. change 2016-19				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	-0.083	0.105	-0.786	0.432
Business services	0.066	0.091	0.720	0.472
Manufacturing	0.062	0.092	0.673	0.501
Healthcare	0.076	0.092	0.829	0.407
ICT	0.069	0.092	0.757	0.450
Construction	0.090	0.091	0.991	0.322
Log Size 2016	0.004	0.005	0.788	0.431
EBITDA 2016	-0.212	0.021	-10.167	0.000
Leverage ratio 2016	0.002	0.003	0.737	0.461
PE status	-0.045	0.049	-0.928	0.354
R ²	0.111			
Observations	926			

Block 4: Dependent variable: ROA 2019				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.117	0.150	0.779	0.436
Business services	0.108	0.131	0.826	0.409
Manufacturing	0.083	0.131	0.634	0.526
Healthcare	0.062	0.132	0.473	0.636
ICT	0.115	0.131	0.876	0.381
Construction	-0.034	0.130	-0.258	0.796
Log Size 2016	-0.008	0.007	-1.075	0.283
EBITDA 2016	0.220	0.030	7.371	0.000
Leverage ratio 2016	-0.003	0.004	-0.604	0.546
PE status	0.022	0.070	0.319	0.750
R ²	0.098			
Observations	721			

Block 5: Dependent variable: Leverage change 2016-19				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.135	0.314	0.430	0.667
Business services	-0.078	0.272	-0.286	0.775
Manufacturing	0.112	0.273	0.410	0.682
Healthcare	-0.073	0.275	-0.266	0.790
ICT	0.027	0.273	0.099	0.921
Construction	0.052	0.272	0.190	0.849
Log Size 2016	0.022	0.015	1.430	0.153
EBITDA 2016	0.029	0.062	0.471	0.638
Leverage ratio 2016	-0.956	0.009	-103.392	0.000
PE status	0.237	0.145	1.630	0.103
R ²	0.104			
Observations	926			

Block 6: Dependent variable: FTE growth				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.379	1.530	0.248	0.804
Business services	-0.607	1.329	-0.456	0.648
Manufacturing	-0.853	1.333	-0.640	0.522
Healthcare	-0.093	1.339	-0.069	0.945
ICT	-0.703	1.333	-0.527	0.598
Construction	-0.891	1.326	-0.672	0.502
Log Size 2016	0.050	0.075	0.666	0.506
EBITDA 2016	0.194	0.304	0.640	0.523
Leverage ratio 2016	-0.009	0.045	-0.198	0.843
PE status	2.041	0.708	2.883	0.004
R ²	0.922			
Observations	926			

Appendix 3. OLS regression full results (cohort 2017)

Block 1: Dependent variable: CAGR 2017-20				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.461	0.052	8.849	0.000
Professional services	-0.008	0.019	-0.391	0.696
Healthcare	-0.091	0.023	-4.002	0.000
ICT	0.057	0.024	2.322	0.020
Log size 17	-0.049	0.006	-7.928	0.000
EBITDA 17	-0.103	0.064	-1.610	0.108
Leverage 17	0.065	0.018	3.654	0.000
PE status	0.530	0.098	5.422	0.000
R ²	0.100			
Observations	1193			

Block 2: Dependent variable: Absolute EBITDA change 2017-20				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.223	0.053	4.247	0.000
Professional services	-0.079	0.019	-4.054	0.000
Healthcare	-0.097	0.023	-4.201	0.000
ICT	0.043	0.025	1.754	0.080
Log size 17	-0.014	0.006	-2.335	0.020
EBITDA 17	-0.399	0.064	-6.191	0.000
Leverage 17	0.029	0.018	1.624	0.105
PE status	0.313	0.099	3.181	0.002
R ²	0.064			
Observations	1193			

Block 3: Dependent variable: EBITDA margin p.p. change 2017-20				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	-0.121	0.204	-0.592	0.554
Professional services	-0.080	0.075	-1.057	0.291
Healthcare	-0.003	0.089	-0.037	0.970
ICT	-0.012	0.096	-0.128	0.898
Log size 17	0.012	0.024	0.509	0.611
EBITDA 17	-0.043	0.250	-0.173	0.863
Leverage 17	0.056	0.069	0.815	0.415
PE status	0.038	0.382	0.098	0.922
R ²	0.003			
Observations	1193			

Block 4: Dependent variable: ROA 2020				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.118	0.039	3.069	0.002
Professional services	-0.040	0.014	-2.803	0.005
Healthcare	-0.071	0.017	-4.230	0.000
ICT	-0.014	0.018	-0.772	0.440
Log size 17	0.000	0.005	0.098	0.922
EBITDA 17	0.502	0.047	10.617	0.000
Leverage 17	0.051	0.013	3.896	0.000
PE status	0.050	0.072	0.694	0.488
R ²	0.169			
Observations	1193			

Block 5: Dependent variable: Leverage change 2017-20				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.237	0.069	3.446	0.001
Professional services	-0.126	0.025	-4.983	0.000
Healthcare	-0.111	0.030	-3.684	0.000
ICT	-0.091	0.032	-2.822	0.005
Log size 17	0.000	0.008	0.020	0.984
EBITDA 17	-0.278	0.084	-3.302	0.001
Leverage 17	-0.385	0.023	-16.478	0.000
PE status	0.159	0.129	1.230	0.219
R ²	0.195			
Observations	1193			

Block 6: Dependent variable: FTE growth				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	1.023	0.552	1.855	0.064
Professional services	0.228	0.204	1.121	0.262
Healthcare	0.305	0.242	1.260	0.208
ICT	0.066	0.259	0.254	0.799
Log size 17	-0.063	0.065	-0.969	0.333
EBITDA 17	-1.133	0.677	-1.675	0.094
Leverage 17	-0.131	0.188	-0.697	0.486
PE status	0.898	1.035	0.867	0.386
R ²	0.010			
Observations	1193			

Appendix 4. OLS regression full results (cohort 2021)

Block 1: Dependent variable: CAGR 2021-24				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.220	0.284	0.773	0.440
Professional services	0.140	0.280	0.500	0.617
Manufacturing	0.138	0.280	0.492	0.623
Healthcare	0.264	0.281	0.939	0.348
Log size 17	-0.034	0.006	-5.882	0.000
EBITDA 17	0.113	0.011	10.516	0.000
Leverage 17	-0.006	0.009	-0.636	0.525
PE status	0.255	0.099	2.567	0.010
R ²	0.175			
Observations	1110			

Block 2: Dependent variable: Absolute EBITDA change 2021-24				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	-0.207	0.504	-0.411	0.681
Professional services	0.261	0.497	0.525	0.599
Manufacturing	0.297	0.497	0.597	0.551
Healthcare	0.293	0.497	0.590	0.555
Log size 17	-0.017	0.010	-1.609	0.108
EBITDA 17	0.995	0.019	52.073	0.000
Leverage 17	0.037	0.016	2.289	0.022
PE status	0.032	0.176	0.182	0.856
R ²	0.715			
Observations	1110			

Block 3: Dependent variable: EBITDA margin p.p. change 2021-24				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	-0.195	0.403	-0.485	0.628
Professional services	0.141	0.397	0.355	0.723
Manufacturing	0.029	0.397	0.074	0.941
Healthcare	0.142	0.398	0.358	0.720
Log size 17	0.014	0.008	1.711	0.087
EBITDA 17	-0.897	0.015	-58.743	0.000
Leverage 17	-0.006	0.013	-0.445	0.656
PE status	0.043	0.141	0.306	0.760
R ²	0.762			
Observations	1110			

Block 4: Dependent variable: ROA 2024				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	-0.014	0.228	-0.063	0.950
Professional services	0.224	0.224	0.997	0.319
Manufacturing	0.170	0.225	0.756	0.450
Healthcare	0.217	0.225	0.964	0.335
Log size 17	-0.006	0.005	-1.390	0.165
EBITDA 17	0.023	0.009	2.657	0.008
Leverage 17	-0.004	0.007	-0.594	0.553
PE status	0.050	0.080	0.632	0.528
R ²	0.018			
Observations	1110			

Block 5: Dependent variable: Leverage change 2021-24				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	0.129	0.378	0.341	0.733
Professional services	-0.213	0.372	-0.571	0.568
Manufacturing	-0.213	0.373	-0.572	0.567
Healthcare	-0.205	0.373	-0.549	0.583
Log size 17	0.013	0.008	1.687	0.092
EBITDA 17	0.005	0.014	0.335	0.738
Leverage 17	-0.160	0.012	-13.150	0.000
PE status	-0.034	0.132	-0.259	0.796
R ²	0.139			
Observations	1110			

Block 6: Dependent variable: FTE growth				
Variable	Coefficient	STD. Error	t-stat	p-value
Intercept	1.0233891	0.55172	1.854906	0.06386
Professional services	0.228365	0.203695	1.121113	0.26247
Manufacturing	0.3045182	0.241703	1.259886	0.20796
Healthcare	0.0658313	0.258721	0.254449	0.79919
Log size 17	-0.0631591	0.065177	-0.96903	0.33273
EBITDA 17	-1.1334383	0.676781	-1.67475	0.09425
Leverage 17	-0.1307871	0.187569	-0.69727	0.48577
PE status	0.8978374	1.035109	0.867384	0.38591
R ²	0.047			
Observations	1110			