

Beyond the IPO

**Does Sponsor Engagement Matter? Evidence from Nordic
Sponsor-Backed IPOs**

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Beyond the IPO: Does Sponsor Engagement Matter? Evidence from Nordic Sponsor-Backed IPOs

Abstract:

This paper examines whether continued sponsor engagement following an initial public offering (IPO) is associated with stronger operating performance among sponsor-backed firms. Using a sample of 91 Nordic sponsor-backed IPOs between 2000 and 2020, we exploit variation in post-IPO sponsor engagement, measured through retained ownership and board representation, and examine its relationship with operating performance over the three years following listing. We find no evidence that continued sponsor engagement has a positive effect on operating performance. Across all model specifications, neither ownership nor board representation is positively associated with ROA, EBITDA margin, or sales growth. Where statistically significant, the relationship is uniformly negative. We further show that for profitability measures, it is the existence of a retained stake rather than the size of that stake that is associated with performance differences, suggesting that retained ownership more likely captures exit difficulty rather than active governance. In contrast, leverage at IPO is consistently and positively associated with the profitability measures of operating performance, pointing to the capital structure at listing as a more robust predictor of post-listing outcomes than continued sponsor engagement.

Keywords:

Private Equity, Initial Public Offerings, Corporate Governance, Sponsor Engagement, Post-IPO Operating Performance

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1. Introduction

Private equity (PE) has become one of the most important forces in modern corporate finance. Through concentrated ownership, active governance, and operational involvement, private equity sponsors are closely associated with improvements in firm performance during the private phase of ownership. The Initial Public offering (IPO), however, marks a structural shift. Ownership is dispersed, leverage declines, and the intensity of sponsor involvement that characterised the private phase begins to decline. Despite this, sponsors rarely exit fully at IPO. Equity stakes and board seats are retained, and the sponsor often has a visible presence in the firm for years after listing. Fürth and Rauch (2015) report that PE investors remain invested for an average of 2.8 years post-IPO, while Jenkinson et al. (2025) find that only 3% of general partners exit fully at the time of flotation, with board presence maintained in around 85% of cases. Whether the value creation associated with these governance mechanisms in the private phase persists in a public setting, and whether the degree of continued engagement explains variation in post-IPO operating performance, remains largely unresolved in the literature.

Most existing research on sponsor-backed IPOs compares sponsor-backed firms to non-sponsor-backed ones. While informative, this approach conflates the long-term effects of pre-IPO restructuring with any post-IPO governance contribution and largely overlooks the considerable variation in how actively sponsors remain engaged after listing. Far less attention has been paid to what happens within the sponsor-backed universe itself, and whether firms in which sponsors remain actively engaged perform differently from those in which sponsors disengage. The distinction matters as it carries direct implications for how post-IPO investors should interpret sponsor retention. Retained equity and board presence may reflect genuine governance commitment, positioning sponsors to sustain the operational improvements created during private ownership through the monitoring and incentive alignment mechanisms described by Jensen and Meckling (1976) and Kaplan and Strömberg (2009), while retained stakes may additionally signal confidence in future performance to outside investors (Barry et al., 1990). Equally, however, retention may reflect exit difficulty rather than committed governance. Jenkinson et al. (2025) document that general partners are often reluctant to sell poorly performing portfolio companies, in which case any observed engagement-performance relationship would reflect selection rather than governance causality. Increasing this ambiguity, much of the prior work focuses on market-based outcomes such as stock returns, while accounting-based operating measures remain comparatively underexplored despite providing a more direct test of whether governance translates into firm-level improvements.

This paper addresses these gaps by examining how variation in post-IPO sponsor engagement, measured through both ownership retention and board representation, relates to operating performance in the three years following listing. Rather than comparing sponsor-backed to non-sponsor-backed firms, we focus on variation within a

sample of 91 Nordic sponsor-backed IPOs between 2000 and 2020, allowing us to isolate engagement intensity from the binary fact of sponsor backing. The Nordic region offers a particularly relevant setting for this question. Characterised by strong governance standards, high investor protection, and regulatory transparency (Thomsen, 2016), the Nordics represent a setting where the external governance environment may already perform many of the functions that sponsors typically provide, making it a context in which the marginal value of continued sponsor oversight may differ from markets that have dominated prior literature.

Building on the agency theory of Jensen and Meckling (1976) and Jensen (1986, 1989), and the value creation framework of Kaplan and Strömberg (2009), the paper tests whether concentrated ownership, active board oversight, and governance mechanisms associated with PE value creation retain their operational force once firms transition to public markets. The empirical analysis employs a longitudinal panel design with lagged governance variables, fixed effects, and firm-clustered standard errors. Three accounting-based operating performance metrics are examined, Return on Assets, EBITDA Margin, and Sales Growth, across five model specifications. We also tested an instrumental variable approach to address the potential endogeneity of sponsor equity retention decisions, though the instrument proved too weak to support causal inference.

Our findings do not support the hypothesis that continued sponsor engagement post-IPO is positively associated with operating performance. Across all fifteen model specifications, neither retained ownership nor board representation is positively associated with any of the three performance metrics. Where statistically significant effects emerge, they are uniformly negative, potentially consistent with the reverse selection mechanism documented by Jenkinson et al. (2025), whereby sponsors tend to remain engaged when exit is unattractive, rather than when governance contribution is greatest. The economically most robust finding concerns leverage, as IPO capital structure is positively and significantly associated with operating performance across the profitability specifications, consistent with Jensen's free cash flow hypothesis (1986) and pointing towards leverage as a more persistent performance driver than any post-IPO governance effort. Alternatively, the relationship may reflect reverse causality, since more profitable firms typically have greater debt capacity and may therefore enter public markets with higher leverage. Overall, our findings are consistent with the possibility that any sponsor value creation may be concentrated in the private phase and suggest that in a well-governed Nordic public market, continued sponsor engagement carries limited explanatory power for post-IPO operating performance. While the empirical design mitigates the most direct reverse causality concerns, the results should be interpreted as conditional correlations rather than causal effects.

2. Literature Review

Since this paper investigates how post-IPO operating performance varies across Nordic sponsor-backed firms depending on the degree of retained sponsor engagement, there are two main categories of literature that are relevant. The first one is the literature examining the theoretical mechanisms through which financial sponsor ownership creates value, and the empirical evidence on whether such value creation materialises during the private phase. The second one is the literature focusing on whether these gains persist after the transition to public markets, and specifically on the role of retained sponsor engagement in sustaining them. In this section, we first establish a theoretical and empirical understanding of how financial sponsors create value in their portfolio firms. We then review the evidence on post-IPO performance persistence before addressing conflicting evidence on exit timing, the endogeneity of sponsor retention decisions, and the institutional context within which these relationships operate. The section concludes by identifying the research gap and contribution of our study.

2.1. Private Equity Monitoring and Governance Mechanisms

2.1.1. Agency Theory and Active Ownership

The theoretical foundation for private equity's governance advantage lies in agency theory. Jensen and Meckling (1976) describe the firm as a nexus of principal-agent relationships in which the separation of ownership and control produces systematic misalignments of incentives. Their framework defines agency costs as the sum of monitoring expenditures by principals, bonding costs by agents, and residual welfare losses arising from misaligned incentives. Concentrated ownership, they argue, reduces these frictions by giving large shareholders both the incentive and capacity to monitor management closely, thereby tightening the link between managerial action and firm value (Jensen and Meckling, 1976). This insight provides the fundamental rationale for why private equity ownership, characterised by concentrated equity stakes, governance oversight, incentive alignment, and monitoring mechanisms, should produce measurable improvements in firm-level performance.

Jensen (1989) extends this logic to the leveraged buyout (LBO) structure specifically, characterising it as a superior organisational form for resolving the owner-management conflict inherent in public firms. By combining concentrated equity stakes with high financial leverage and managerial incentive systems, the LBO structure subjects management to multiple, mutually reinforcing disciplinary mechanisms. Debt service obligations constrain the discretionary deployment of free cash flows, the primary channel through which Jensen (1986) argues that managers pursue value-destroying projects in the absence of external discipline, while equity co-investment aligns managerial interests with those of the controlling sponsor. Jensen (1989) argues that the

combination of these mechanisms allows sponsors to reach levels of monitoring intensity and incentive alignment that dispersed owners and their boards are unlikely to replicate. As a result, the LBO structure is expected to generate improvements in operational efficiency, productivity, and overall firm performance.

2.1.2. Channels of Value Creation

While agency theory provides the rationale for why concentrated ownership and incentives should improve organisational performance, it does not specify the mechanisms through which PE sponsors actually create value in practice. Kaplan and Strömberg (2009) provide a useful framework distinguishing three broad channels of value creation in PE buyouts: financial engineering, governance engineering, and operational engineering. Financial engineering refers to leverage-related mechanisms, including tax benefits from interest deductibility and the disciplinary effects of debt service obligations described above. Governance engineering refers to the control mechanisms PE sponsors exercise through board representation, active monitoring and performance-based managerial incentives. Operational engineering, by contrast, involves more direct engagement in firm strategy and operations through which sponsors leverage their industry and operating expertise to improve firm economics independently of capital structure (Kaplan and Strömberg, 2009).

2.2. Evidence of Value Creation During the Private Phase

2.2.1. Performance During Buyout Phase

A substantial body of empirical work documents measurable improvements in firm-level operating performance during the PE holding period, providing direct support for the governance and incentive mechanisms described above (Guo et al. 2009; Holthausen and Larcker, 1996; Kaplan, 1989; Levis, 2011). Kaplan (1989), examining 76 large management buyouts completed between 1980 and 1986, documents systematic increases in operating income, margins, and net cash flows during the three years following the buyout, attributing these gains to improved incentives and governance structures. Complementary evidence is provided by Baker and Wruck (1989), whose case study of the LBO of O.M. Scott & Sons links performance gains to organisational changes such as new incentive plans, decentralisation of decision-making, and management equity ownership, providing evidence that PE value creation often operates through the governance channels theorised by Jensen and Meckling (1976) and Jensen (1989). Evidence from larger samples similarly document improvements in operating performance following buyouts, which are consistently attributed to the same governance mechanisms. Lichtenberg and Siegel (1990) as well as Davis et al. (2014) find significant improvements in total factor productivity in U.S. buyouts, while Harris et al. (2005) report similar productivity gains for UK buyouts. Consistent with these results, Cressy et al.

(2007) find that operating profitability of PE-backed companies exceeds those of comparable firms by 4.5% following the transaction.

While these studies broadly support the view that PE sponsors improve firm performance, there is less consensus on the magnitude and underlying drivers of these gains. A significant share of literature attributes performance improvements to enhanced governance and incentive alignment (Jensen and Meckling, 1976; Nikoskelainen and Wright, 2007). However, complementary evidence suggests that these channels may not fully account for observed performance improvements. Guo et al. (2009), studying 192 U.S. LBOs from 1990-2006, find that gains in post-buyout operating performance are either comparable to, or moderately exceed, those observed for benchmark firms. While they explicitly test commonly cited governance mechanisms, their findings provide limited support for these channels and instead point to increased leverage as the more robust predictor of operating gains, consistent with Jensen's (1986) free cash flow discipline hypothesis. Recent evidence by Davis et al. (2025) further suggests that the drivers of value creation vary systematically across credit cycles, with tight credit conditions amplifying productivity gains, consistent with limited financial engineering and greater reliance on operational improvements. By contrast, Cohn et al. (2022) find that in PE-backed buyouts, financial engineering plays a limited role, with value creation instead driven primarily by the relaxation of financing constraints for firms with strong investment opportunities.

2.3. Post-IPO Engagement and Performance Persistence

2.3.1. Conceptual Dimensions of Post-IPO Engagement

Having established that PE ownership can drive operational improvements during the private phase, the question naturally arises whether these gains persist after firms move to the public market. The mechanisms associated with PE value creation such as concentrated ownership, active board oversight, and leverage, should logically diminish at the IPO transition as ownership disperses, sponsor control is reduced, and leverage is typically lowered. From an agency perspective, these changes would imply that the governance advantages and performance gains associated with PE ownership weaken after listing. Yet, the evidence on whether performance gains persist is mixed, with some studies documenting continued outperformance, while others report a deterioration among sponsor-backed firms. Even where a relationship between engagement and performance is observed, the direction of causality remains contested, and the underlying dynamics are debated.

The literature generally conceptualises post-IPO engagement along two main dimensions: ownership retention and board representation. Retained equity stakes preserve investors' financial incentives to monitor managerial decisions and may additionally signal firm quality to outside investors (Barry et al., 1990). Consistent with the signalling role, Megginson and Weiss (1991) argue that sponsor retention at IPO can

serve as a certification mechanism that enhances credibility by reducing information asymmetry at the point of listing, though this interpretation does not necessarily imply that continued monitoring drives subsequent operating performance. Board representation captures a complementary governance channel through which PE sponsors can maintain strategic oversight even as their ownership stake declines (Cornelli and Karakaş, 2008). Jenkinson et al. (2025) document that PE funds maintain board presence at IPO in approximately 85% of cases, with involvement often continuing well beyond listing, while Hochberg (2011) finds that VC-backed firms enter public markets with stronger governance characteristics, suggesting that governance arrangements established during private ownership can carry over to a public setting. Further, Lerner (1995) introduces an important qualification, suggesting that sponsors strategically adjust board involvement over time, increasing engagement when monitoring needs are higher, indicating that sponsor engagement is state-contingent rather than static.

2.3.2. Evidence of Post-IPO Performance Persistence

Before examining the PE-specific evidence, we recognise that the IPO itself, independent of any change in sponsor engagement, may alter a firm's operational environment in ways that constrain post-listing performance. Pagano et al. (1998) document that both profitability and investment decline following listing, and that firms go public primarily to rebalance capital structure and exploit valuation windows rather than to fund future growth. Bernstein (2015) similarly argues that going public shifts managerial priorities away from long-term value creation as dispersed shareholder expectations collectively reshape the incentive architecture, regardless of who occupies the board and how much equity the original sponsor retains. These structural changes suggest that post-IPO performance may partly reflect the inherent dynamics of the listing process itself, making retained PE engagement a potentially secondary determinant of outcomes.

Consistent with this, a number of studies document a decline in operating performance following IPOs. Jain and Kini (1994) identify a significant decline in operating performance subsequent to the IPO, while Mikkelsen et al. (1997) find that operating performance tends to decline from the year prior to the offering to the end of the first year of public trading. Ritter and Welch (2002) similarly document long-run underperformance among IPO firms, while emphasising that the magnitude of such underperformance is sensitive to measurement choices and sample periods. As Bernstein (2015) suggests, reductions in sponsor engagement may therefore matter not only because monitoring declines, but also because firms become more exposed to external pressures that can erode the persistence of operational improvements achieved during private ownership.

Despite broad agreement on the existence of post-IPO performance deterioration, there is less agreement on its underlying causes. A governance-based explanation, rooted in Jensen and Meckling (1976), attributes the decline to increased agency costs following the dilution of managerial ownership, whereby reduced insider stakes weaken incentive

alignment and increase managerial discretion. Consistent with this view, Jain and Kini (1994) argue that the decline may reflect both worsening incentives and informal frictions, including earnings management prior to listing and the timing of IPOs during periods of unusually strong but unsustainable performance. Holthausen and Larcker (1996) similarly raise the possibility that deteriorating accounting performance following IPOs could reflect management exploiting information asymmetry with public investors.

Alternative explanations place less emphasis on governance and instead highlight the role of market timing, investor sentiment, and firm selection. Ritter and Welch (2002) argue that IPOs frequently occur during “hot” market periods characterised by elevated valuations and investor overoptimism, where the original owners exploit a window of opportunity. Similarly, Mikkelsen et al. (1997) find no systematic relationship between changes in ownership structure and operating performance. Instead, they attribute post-IPO performance declines to mean reversion from strong pre-IPO performance, mechanical effects from asset growth following capital raising, and the timing of insider sales during peak performance, suggesting that performance is driven more by underlying firm characteristics and market dynamics than by the governance effects predicted by Jensen and Meckling (1976).

Against this backdrop, a parallel stream of literature, focused specifically on PE-backed IPOs, provides evidence more consistent with a governance-based view. Holthausen and Larcker (1996), examining 90 reversed LBOs (RLBOs), find that operating performance improvements achieved during private ownership persist after listing and that declines in ownership concentration are accompanied by sharper declines in accounting performance. Levis (2011), examining UK private equity-backed IPOs, finds that long-run operating performance is positively related to the equity retained by the sponsor post-flotation, suggesting that the degree of sponsor involvement influences post-IPO performance outcomes. Levis also notes that lock-up agreements, incentive structures, and liquidity considerations often result in PE sponsors retaining a significant, but reduced, stake in the company for a considerable period, facilitating continued monitoring and reduction in information asymmetries.

Cao and Lerner (2009) report similar results for RLBOs, emphasising that retained ownership and board presence provide both the incentives and the governance capacity to sustain value creation after listing. They further argue that the reputational costs associated with portfolio company underperformance in public markets create an additional mechanism reinforcing governance efforts even as formal control decreases. Evidence from emerging markets also supports this pattern, with Sincerre et al. (2019) finding that sponsor-backed firms in Latin America outperform non-invested peers in profitability and sales growth during the first three years after listing, attributing part of this to continued sponsor ownership and board participation. Similarly, Matanova et al. (2022), in a large U.S. sample, document that higher levels of retained sponsor ownership are positively associated with long-run aftermarket performance.

2.3.3. Exit Timing and Selection Considerations

The evidence of performance persistence documented above raises a fundamental identification challenge. If sponsors retain equity and board presence in high-performing firms while exiting weaker prospects, the observed relationship between performance and engagement may reflect selection rather than governance causality. Baker and Gompers (2003) highlight this specifically, explaining that governance structures may be determined by performance characteristics rather than the other way around. The opportunistic timing hypothesis, formalised by Degeorge and Zeckhauser (1993), predicts this pattern and hypothesises that sponsors with private information about weakening future profitability will exit opportunistically through secondary offerings and offload their equity to uninformed investors before the decline becomes observable. Under this view, high retention signals strong fundamentals rather than ongoing governance contribution.

Further, Lerner (1994) demonstrates that experienced sponsors are particularly proficient at timing IPOs to coincide with market peaks, suggesting that the strategic timing of an IPO is not merely a financial exit but a sophisticated governance act. While this timing proficiency serves to minimise ownership dilution for investors and increase the attractiveness of follow-on offerings, it raises the question of whether IPOs timed for valuation rather than firm maturity create a path dependency for subsequent performance, where early listing may expose firms to public market pressures before the operational improvements embedded during private ownership are sufficiently durable. Evidence consistent with this concern is found in the “grandstanding” behaviour of young venture capital firms. Gompers (1996) finds that these firms take companies public earlier and with less maturity than established firms in order to signal ability to limited partners during subsequent fundraising cycles. Similar behaviour is observed in the PE buyout context, where Cao (2011) finds that sponsors tend to shorten the private restructuring phase to capitalise on favourable IPO market conditions. He further shows that this market timing strategy leads to greater deterioration of performance, and that the IPO timing itself does not affect sponsors’ post-IPO exit decisions, but is rather driven by company fundamentals, market conditions and reputation.

Subsequent empirical evidence does not uniformly confirm the opportunistic timing prediction. Dong et al. (2020) find that firms exhibit superior industry-adjusted ROA and EBITDA margins following sponsor secondary offerings, directly contradicting the Degeorge and Zeckhauser’s (1993) hypothesis that sell-down precedes performance deterioration. They argue that exits occur only after sufficient operational restructuring has been embedded in the firm, such that the firm is prepared to continue performing under dispersed ownership. They further document that sponsors rarely sell substantial stakes at the IPO itself, showing that the average ownership declines from 46.5% to 28.8% after the first secondary offering. Importantly, they explain that sponsors typically retain board representation and strategic influence throughout this period, suggesting that

gradual sell-down and continued governance rather than immediate exit characterises post-IPO sponsor behaviour.

Yet a third selection channel runs in the opposite direction to Degeorge and Zeckhauser and warrants equal attention. Jenkinson et al. (2025) find that general partners are often reluctant to sell poorly performing portfolio companies, which is a pattern more consistent with the loss aversion and reputational constraints proposed by Cao and Lerner (2009) than with the exploitation of private information of future strength. Under this view, sponsors may remain engaged not because firm prospects are strong, but because poor performance and low valuations make exit difficult or reputationally costly. This reversed selection story implies that high ownership retention could be associated with weaker rather than stronger operating performance, not because engagement causes poor performance, but because poor performance causes sponsors to stay.

At the structural level, the fixed life cycle of private equity funds (typically ten years) creates institutional pressure on the PE firm to exit and return capital to its investors regardless of firm-level performance (Kaplan and Strömberg, 2009), generating variation in retention that may be partly exogenous to portfolio company operating performance. Consistent with this, Arcot et al. (2015) find that funds facing such institutional pressure exit at lower multiples and engage more frequently in secondary buyouts, suggesting that the urgency to liquidate aging funds weakens bargaining power and accelerates exit independently of firm conditions.

Previous work shows that the interplay between sponsor engagement and post-IPO operating performance is also likely to be sensitive to the institutional environment in which it is studied. La Porta et al. (1998) demonstrate substantial cross-country variation in legal investor protections and show that ownership concentration can act as a substitute governance mechanism in weaker legal environments, implying that the marginal value of additional monitoring is lower in countries characterised by strong legal systems and investor protection. This pattern is especially relevant in the Nordic region. Thomsen (2016) documents that the Nordic countries rank at an average of 3.9 out of approximately 215 countries on the World Bank composite governance indicator over the period 1996-2012, compared to 21.4 for the US and 42.8 for the Euro area. A similar pattern holds for corruption control, where the Nordics rank 3.3 against 17 for the US and 36.9 for the Euro area, reflecting the region's strong protection for minority shareholders, high transparency, and effective regulatory frameworks. As a result, the oversight role that PE investors provide during the private stage may partly be replaced by the surrounding legal and regulatory system following the IPO, implying that the links between sponsor involvement and performance documented in empirical studies from the UK, US, Euro area and Latin America may not straightforwardly generalise to Nordic markets.

2.4. Research Gap and Contribution

As illustrated above, previous literature establishes that private equity sponsors can create meaningful operational value during private ownership, but whether this value creation continues after the IPO is empirically contested and subject to significant identification challenges. Several gaps in the existing literature motivate this study.

First, most studies compare sponsor-backed IPOs to non-sponsor-backed firms or to market benchmarks. While this approach captures the overall effects of private equity, it provides limited insight into whether post-IPO performance differences are related to the degree of continued sponsor engagement after listing. As a consequence, grouping all sponsor-backed firms together regardless of post-IPO engagement intensity conflates firms where the original sponsor remains actively involved with firms where the sponsor has disengaged substantially. As highlighted by Jenkinson et al. (2025), sponsor engagement varies considerably across firms post-IPO, yet this variation remains largely unexplored in the existing literature. Moreover, the direction of any engagement-performance relationship remains unresolved, as observed correlations may reflect governance effects or selection effects due to firm quality or exit difficulty, each carrying different empirical implications.

Second, much of existing literature focuses on market-based performance measures such as stock returns and buy-and-hold abnormal returns (Cao and Lerner, 2009; Matanova et al., 2022). While informative, these metrics often reflect investor sentiment, market-wide conditions, risk premia, and IPO pricing dynamics rather than underlying operational improvements. Accounting-based operating measures such as ROA, margins, and sales growth provide a more direct assessment of whether sponsor governance translates into tangible improvements in firm operations post-listing. Despite this, operating performance remains comparatively understudied in the context of firm behaviour after listing. Third, the geographic concentration of existing studies in the UK and US limits generalisability to the Nordic setting, where strong institutional governance, high investor protections, and regulatory transparency may reduce the engagement effects documented elsewhere.

This thesis contributes to the literature by addressing these limitations in several ways. First, instead of comparing sponsor-backed to non-sponsor-backed IPOs, we focus on variation within only sponsor-backed firms and examine how differences in post-IPO sponsor engagement, captured through both ownership retention and board representation, are associated with operating performance during the first three years after listing. By restricting the sample to sponsor-backed firms, the design isolates variation in engagement intensity from the binary fact of sponsor backing. Second, our study links engagement directly to accounting-based outcomes, complementing the existing literature centred on aftermarket performance. Third, building on work highlighting the role of institutional constraints (Kaplan and Strömberg, 2009) and behavioural biases (Jenkinson et al., 2025), the analysis attempts to address the endogeneity of retention

decisions by using an end-of-lifecycle dummy based on fund age at IPO as an instrument for ownership retention in order to isolate the causal effect of sponsor engagement on performance. To the best of our knowledge, this is the first study to examine how within-sponsor variation in post-IPO engagement relates to operating performance among sponsor-backed IPOs in the Nordics.

3. Hypothesis Development

In the following section, we develop hypotheses on whether the governance mechanisms associated with sponsor value creation in the private phase retain explanatory power for operating performance once portfolio companies transition to the public market. The hypotheses are grounded in the findings and theoretical mechanisms reviewed in the literature section, and the rationale underlying each predicted relationship will also be discussed. While acknowledging that sponsor behaviour post-IPO is multifaceted, we focus on the dimensions of engagement that the literature identifies as most significant for firm-level governance, such as ownership and board representation. We further limit ourselves to the engagement mechanisms that theoretically have a measurable and direct impact on the operating performance of publicly listed firms.

Building on the agency logic of Jensen and Meckling (1976) and Jensen (1989), as well as the governance framework developed by Kaplan and Strömberg (2009), we argue that the operational gains created during the private phase are not self-sustaining after listing, but depend on whether the mechanisms that produced them: concentrated ownership, active monitoring, and incentive alignment, remain active. This interpretation is also consistent with earlier buyout research emphasising that the value of LBOs lies in its incentive-intensive governance structure, rather than in organisational changes that persist independently of those mechanisms (Kaplan, 1989). More recent evidence further suggests that post-IPO involvement is often gradual rather than immediate, with sponsors frequently retaining equity and board presence for years after flotation (Dong et al., 2020; Jenkinson et al., 2025; Matanova et al., 2022), which makes the degree of retained engagement a natural source of variation for testing governance and performance persistence.

3.1. Ownership Retention and Post-IPO Operating Performance

Since previous research documents that PE-backed firms often outperform their non-PE-backed counterparts and that these operational gains frequently persist after listing, a natural question is whether the extent of such persistence depends on the level of sponsor engagement post-IPO, rather than solely on the binary fact of backing. A first implication of the literature is that retained ownership should matter in this regard. Retained equity stakes preserve the sponsors' financial exposure to the firm's future performance and strengthen the incentive to continue monitoring managerial decisions. In the literature on PE-backed IPOs, retained ownership is therefore commonly interpreted both as a governance mechanism and as a signal of continued sponsor commitment. Studies such as Levis (2011) and Cao and Lerner (2009) show that sponsors often maintain meaningful equity stakes for several years after flotation, and that higher continued ownership is commonly associated with stronger operational performance. Therefore, we would expect

that sponsors who retain larger holdings post-IPO are better positioned to protect and extend the operational improvements achieved during the private phase.

Retention decisions, however, are not random. Sponsors may selectively maintain ownership in firms they expect to perform well, as hypothesised by Degeorge and Zeckhauser (1993), which would then likely result in estimates of the ownership-performance relationship to overstate any causal governance effect. At the same time, sponsors may also take the opportunity to exit when market conditions are favourable, even if the process of value creation is not yet fully complete. Equally, sponsors may remain invested in firms where poor performance and low valuations make an exit difficult or reputationally costly, a pattern documented by Jenkinson et al. (2025) which could generate an inverse relationship between retention and performance that reflects selection rather than governance. We attempt to address this endogeneity concern empirically through an instrumental variable strategy, while recognising that retention decisions remain difficult to identify causally. We acknowledge this concern here to clarify the interpretation of H1 and to motivate the identification strategy that follows. Accordingly, the first hypothesis is:

H1: Post-IPO operating performance is positively related to the existence and size of the financial sponsor's retained ownership stake following listing.

3.2. Board Representation and Post-IPO Operating Performance

Retained ownership alone does not fully capture sponsor engagement. The literature also emphasises board representation as a distinct governance channel through which PE sponsors can influence firm behaviour after going public. Board seats provide sponsors with direct access to strategic oversight, monitoring of management, and decision-making, even when ownership begins to decline. Kaplan and Strömberg (2009) describe board control and active monitoring as central features of private equity investors, while Cornelli and Karakas (2008) explain that board involvement is an important component of active ownership. Empirically, Jenkinson et al. (2025) document that PE sponsors frequently remain represented on the board of their portfolio companies after listing, indicating that sponsor influence often extends beyond the initial flotation event. Thus, if board representation preserves the monitoring and advisory role of the sponsor, then the firm where sponsors remain on the board should be better able to sustain the operational gains created during the private phase. This leads to the second hypothesis:

H2: Post-IPO operating performance is positively related to the financial sponsor's continued engagement through board representation following listing.

3.3. The Complementarity of Ownership and Board Representation

The two dimensions of post-IPO engagement are likely to be complementary rather than substitutes. As established by Jensen and Meckling (1976), the value of concentrated ownership lies in the incentive and capacity it gives large shareholders to monitor management closely. However, ownership retention alone may be insufficient to realise this potential after listing. A sponsor who holds a residual equity stake without board representation may lack the direct oversight capacity to intervene in management and shape strategic decisions, which are precisely the mechanisms through which PE governance creates value during the private phase. In this sense, equity ownership provides the financial incentive to act, whereas board representation provides the governance channel through which that incentive can actually be exercised. The two mechanisms are therefore not interchangeable, but rather, one could expect that the effectiveness of retained ownership as a governance tool depends on whether the sponsor also retains the board access to translate financial alignment into operational influence.

The literature on PE governance supports this reasoning. Kaplan and Strömberg (2009) argue that PE firms apply three complementary mechanisms to their portfolio companies: financial, governance, and operational engineering, including tools such as leverage discipline, incentive structures, active board oversight, and operational expertise. Together, these mechanisms address the agency costs inherent in the separation of ownership and control. Crucially, board representation is the primary channel through which sponsors maintain the strategic influence such operational engagement requires. Retained ownership may therefore provide financial incentives to monitor, but it is board presence that enables sponsors to act on those incentives in a meaningful way. We would therefore expect the performance effect of retained ownership to be amplified when the sponsor also maintains board representation post-IPO. We therefore formulate the following hypothesis:

H3: The positive relationship between sponsor ownership retention and post-IPO operating performance is stronger when the sponsor retains board representation post-IPO.

Overall, these three hypotheses formalise the governance persistence argument that it is continued sponsor engagement, rather than sponsor backing alone, that sustains operational performance after listing. The progression from ownership (H1) to board representation (H2) to their interaction (H3) builds directly on the persistence of the sponsor governance channels identified in literature and motivates the following empirical design.

4. Data

This section describes the dataset and data collection methods used to test the hypotheses presented in Section 3. It also outlines the sample selection criteria and reports descriptive statistics for the final sample.

4.1. Collection of the Sample Data

The primary universe of Nordic Initial Public Offerings (IPOs) was identified using the SDC Platinum and PitchBook databases. The Nordic region was selected due to its active Private Equity market, combined with regulatory transparency that provides access to high-quality data. To ensure the completeness and accuracy of our dataset, we systematically cross-referenced the initial extraction with industry sources such as the Swedish Private Equity & Venture Capital Association (SVCA) and Argentum. Following the identification of the preliminary universe, we conducted a rigorous manual verification process. For each individual firm, we examined the official IPO prospectuses retrieved from company websites, the Swedish Financial Supervisory Authority's (Finansinspektionen) prospectus register, and the ESMA registers (European Securities and Markets Authority), and subsequent annual reports to confirm the presence of a financial sponsor and to initially map the ownership structure.

Once the sample of sponsor-backed IPOs was established, we collected longitudinal financial and governance data. To accommodate the lagged empirical design, the measurement intervals differed between governance and financial variables, whereby governance variables were measured one period earlier than the corresponding financial variables. We systematically extracted governance data, specifically the sponsor's ownership stake and board representation, at the IPO date, 12 months, and 24 months post-IPO. We primarily retrieved these metrics from the specialised ownership database Holdings.se and annual reports and supplemented by prospectuses when coverage was incomplete. Furthermore, to compute the initial firm size, we collected the market capitalisation at the time of the IPO through press releases and the Holdings.se database. Finally, to determine the age of the sponsor's investment fund, we identified the specific fund names via annual reports and extracted their corresponding vintage years using the PitchBook database.

We concurrently gathered accounting and operational performance metrics. Because financial performance is tied to corporate fiscal years rather than exact IPO anniversaries, we extracted these metrics based on the firms' annual reporting cycles. Specifically, we collected financial data from the first full annual report published after the 12-month anniversary of the IPO, followed by the subsequent two annual reports. This approach effectively captures the operational periods corresponding to roughly 12, 24, and 36 months post-IPO. The primary source for this financial data was the FactSet

database, which was manually cross-referenced with the firms' published annual reports to ensure data integrity and address any missing values.

4.2. Sample Selection Criteria

To construct the final dataset, we applied several inclusion and exclusion criteria to the initial universe of firms. First, the sample was geographically restricted to IPOs executed on the public equity markets in the Nordic region (Sweden, Denmark, Norway, and Finland). Focusing on these core Nordic countries provides a robust environment to study post-IPO governance. Furthermore, given similar corporate governance and regulations, the Nordic countries are frequently viewed as one coherent financial market (Spliid, 2013). We explicitly excluded Iceland from the sample due to its significantly lower private equity activity and smaller economy. Furthermore, the sample was limited to IPOs executed between the years 2000 and 2020. This timeframe captures multiple macroeconomic cycles, ensuring that the empirical findings are not driven by a single market anomaly, while the chronological cutoff at 2020 allows for a complete 36-month post-IPO tracking period for all included firms.

Second, a firm was classified as sponsor-backed and included in the sample only if a Private Equity (PE) or Venture Capital (VC) firm was the principal shareholder at the time of the IPO. While pre-IPO literature often separates the two due to differences in target firm maturity, this study includes a limited number of VC-backed IPOs under specific conditions. Crucially, since our sample inclusion criteria strictly require the sponsor to be the principal shareholder, the included VC firms hold significant equity stakes that resemble traditional PE buyouts. This reduces the practical distinction between minority VC investments and PE buyouts, allowing us to treat them as functionally equivalent sponsors. On the public market, both sponsor types face identical exit mechanisms, standard lock-up agreements, and comparable fund lifecycle pressures. Empirically, combining both sponsor types within the relatively small Nordic market is necessary to secure a sufficiently large sample size, thereby preserving the statistical power and degrees of freedom required for robust panel data regressions. To capture these post-IPO exit dynamics, the firms are evaluated over a three-year (36-month) horizon. This tracking period is strategically chosen to extend well beyond the expiration of standard IPO lock-up periods (typically 180 to 360 days), and to capture the primary strategic windows where sponsors make active decisions regarding their continued engagement, including whether to retain board seats and ownership stakes or to exit the firm.

Finally, to ensure the mathematical integrity of the operational performance metrics, we applied two specific exclusion criteria. Companies reporting zero revenues at the time of the IPO (often early-stage biotechnology ventures) were excluded, as the lack of operational sales renders relative metrics such as EBITDA Margin and Sales Growth mathematically undefined or heavily distorted. Importantly, firms with operating losses

(negative earnings) were strictly retained to avoid selection bias, as prioritising top-line growth over immediate profitability is a common strategy among sponsor-backed firms. Additionally, companies that were delisted within 36 months of their IPO, whether due to bankruptcy or being taken private, were excluded to avoid incomplete data. We acknowledge that excluding such firms inherently introduces a degree of survivorship bias. However, retaining these firms would result in an unbalanced panel with missing-data issues, fundamentally skewing the dual time-fixed effects and the lagged empirical design.

Summarising the sample construction, the initial database extraction yielded a gross universe of 278 potential sponsor-backed Nordic IPOs. Following a manual verification process, 170 firms were excluded as they did not meet the primary inclusion criteria, such as the sponsor not being the principal shareholder, leaving 108 confirmed sponsor-backed firms. The subsequent application of firm-level data filters, specifically the exclusion of companies with zero revenues and firms delisted within the 36-month tracking window, eliminated an additional 17 firms. Consequently, the final refined sample consists of 91 sponsor-backed firms, yielding a balanced longitudinal panel of 273 firm-year observations.

4.3. Variable Definitions

4.3.1. Dependent Variables

To evaluate the firms' financial and operational performance post-IPO, this study employs three distinct metrics measured at time t , corresponding to the operational periods of roughly 12, 24, and 36 months post-IPO. We collect the data for these variables from the FactSet database and published annual reports. These specific metrics are deliberately selected to capture both underlying operational efficiency and growth, reflecting the primary value-creation strategies employed by financial sponsors.

The first metric is Return on Assets (ROA), serving as a broad indicator of how efficiently a firm's management and board utilise its asset base to generate earnings. While traditional ROA formulations rely on net income, this study utilises EBITDA. Since sponsors frequently involve highly leveraged capital structures, using purely bottom-line metrics can obscure actual operating improvements due to heavy interest expenses. Using EBITDA isolates the core operating efficiency of the assets. Furthermore, because earnings are generated continuously over the fiscal year while the balance sheet is static, EBITDA is divided by the average of the opening and closing total assets for the period to provide a more accurate measure of the utilised asset base. It is defined as:

$$ROA_t = \frac{EBITDA_t}{\left(\frac{\text{Opening Assets}_t + \text{Closing Assets}_t}{2} \right)}$$

The second metric is the EBITDA Margin. Building on the rationale for utilising EBITDA established above, this metric isolates core operating profitability from the firm's capital structure and tax environment. While ROA captures asset efficiency, the EBITDA margin provides a complementary view by measuring profitability relative to revenue, thus reflecting the firm's pricing power and operational cost control. It is calculated as:

$$\text{EBITDA Margin}_t = \frac{\text{EBITDA}_t}{\text{Total Revenue}_t}$$

Finally, Sales Growth is included as a dynamic performance metric. Financial sponsors often prioritise top-line growth over immediate short-term profitability to maximise valuation multiples at exit. In order to capture the firms' ability to expand these top-line operations, Sales Growth is calculated as the year-over-year percentage change in total revenue:

$$\text{Sales Growth}_t = \frac{\text{Total Revenue}_t - \text{Total Revenue}_{t-1}}{\text{Total Revenue}_{t-1}}$$

To mitigate the effect of potential extreme outliers and heavy-tailed distributions, all three dependent variables (ROA, EBITDA Margin, and Sales Growth) are winsorised at the 5th and 95th percentiles prior to analysis. This approach ensures that the Ordinary Least Squares (OLS) estimations are not driven by a few abnormal observations.

4.3.2. Independent Variables

The study measures the continued engagement and influence of the sponsors post-IPO through two main variables constructed using historical ownership and board data. To appropriately model the relationship between sponsor involvement and firm outcomes, these independent variables are measured with a time lag. Specifically, they are observed at time $t-1$ (i.e., at the IPO date, and 12 and 24 months post-IPO) to predict the operational performance at time t . This lagged empirical design is implemented to account for the natural delay between the execution of strategic board-level decisions and their subsequent materialisation in corporate financial statements. The first variable, Sponsor Ownership, is a continuous variable measuring the financial sponsor's percentage ownership stake at the lagged measurement interval ($t-1$). The second variable, Board Representation, is a binary dummy variable that takes the value of 1 if the sponsor has at least one representative on the firm's board of directors at the lagged measurement interval ($t-1$), and 0 otherwise. This serves as a proxy for active corporate governance and direct strategic influence prior to the realised financial performance.

4.3.3. Control Variables

To isolate the effect of sponsor engagement and mitigate omitted variable bias, the model includes several control variables to account for firm-specific characteristics. Firm Size is defined as the natural logarithm of the firm's market capitalisation at the time of the

IPO to account for positive skewness. This controls for size effects often observed in IPOs (Brav and Gompers, 1997). Leverage is included to control for the capital structure and the potential disciplinary effects of debt on operational efficiency (Jensen, 1986). To avoid endogeneity issues, leverage is measured as a static control variable at the time of the IPO. It is calculated as the liabilities-to-assets ratio, defined as total liabilities divided by total assets:

$$\text{Leverage} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

To handle extreme outliers, the leverage variable is winsorised at the 95th percentile. Finally, the model incorporates Calendar Year, Measurement Interval, Country, and Sector fixed effects. The specific econometric rationale for these inclusions is discussed in the methodology Section 5. Finally, detailed industry classifications are grouped into five broad sector categories based on characteristics: Consumer & Retail, Industrials, Technology & Media, Healthcare, and Financials, to effectively control for industry-specific differences while maintaining sufficient statistical power in the sample.

4.3.4. The Instrumental Variable

To address potential endogeneity in the sponsor engagement variable, we constructed an end-of-lifecycle dummy as an instrument for retained ownership. According to private equity literature (Kaplan and Strömberg, 2009), the standard lifecycle of a sponsor fund is around 10 years. The instrument takes the value of 1 if the sponsor's fund is 8 years or older at the time of the IPO (representing the final years of its lifecycle), and 0 otherwise. The 8-year threshold is chosen as a reasonable point to capture funds entering the late stage of the standard 10-year fund lifecycle after which exit pressure increases. To preserve degrees of freedom in the First-Stage regression, the temporal fixed effects in the 2SLS specification were grouped into macroeconomic periods rather than calendar years (specifically: pre-2008, 2008–2014, and post-2015), preventing the instrument from being absorbed by individual year dummies. As reported in Section 6.2, the instrument proved too weak to support causal inference, and OLS therefore serves as the primary estimation strategy.

4.4. Descriptive Statistics

Table 1 below presents summary statistics for 273 firm-year observations across 91 sponsor-backed firms. The sample firms exhibit a mean ROA of 11.5%, a mean EBITDA margin of 13.3%, and mean sales growth of 14.7%, indicating generally profitable and growing operations across the three-year tracking period after flotation. The mean IPO leverage of 54.7% is consistent with the leveraged capital structures typical among PE-backed firms at listing. Turning to the dummy variables in Panel B, board representation is recorded in 68.9% of all firm-year observations, while the sponsor ownership dummy

(indicating any retained equity stake) is present in 65.2% of observations. The close alignment between the two figures is consistent with the high correlation between ownership and board presence (see Table 5), suggesting that sponsors typically retain board representation throughout the sell-down period, as evidenced by prior literature (Dong et al., 2020; Jenkinson et al., 2025). In 45.1% of cases, the sponsor's fund is classified as being at the end of its lifecycle.

TABLE 1
Summary statistics

Panel A: Continuous variables

	N	Mean	Std. Dev.	Min	Median	Max
Sponsor ownership (%)	273	0.1885	0.1964	0.0000	0.1580	0.9672
ROA	273	0.1151	0.0830	-0.0947	0.1143	0.2698
EBITDA margin	273	0.1325	0.1215	-0.1493	0.1120	0.4167
Sales growth	273	0.1470	0.1928	-0.1658	0.1071	0.6416
IPO leverage	273	0.5472	0.1795	0.0492	0.5519	0.8601
Log market cap	273	21.5634	1.1276	19.1138	21.7529	24.3991

Panel B: Dummy variables

	N	Count (=1)	Percentage
Board representation	273	188	68.9%
Sponsor ownership dummy	273	178	65.2%
End of lifecycle dummy	273	123	45.1%

Table 1: All continuous variables winsorised at the 5th and 95th percentiles. Leverage winsorised at the 95th percentile only.

Figure 1 illustrates the distribution of sponsor-backed IPOs across the sample period, with activity concentrated in 2014-2018, and a clear absence during the financial crisis years of 2008 and 2009, reflecting broader Nordic IPO market conditions.

FIGURE 1
Number of sponsor-backed IPOs by year

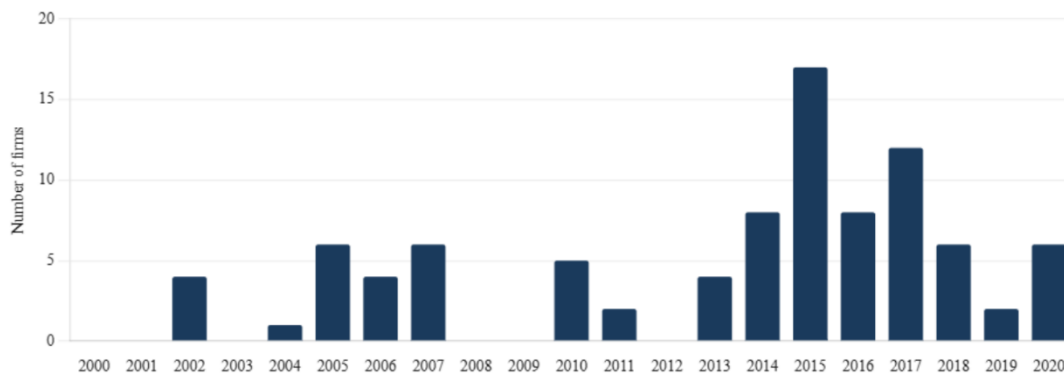


Figure 1: Sample: 91 sponsor-backed firms, Nordic IPOs 2000–2020. Years with zero IPOs: 2000, 2001, 2003, 2008, 2009, 2012.

Figure 2 confirms the geographic composition of the sample, with Sweden accounting for 64.8% of observations, broadly reflecting its dominant position in the Nordic PE market.

FIGURE 2
Sample distribution by country

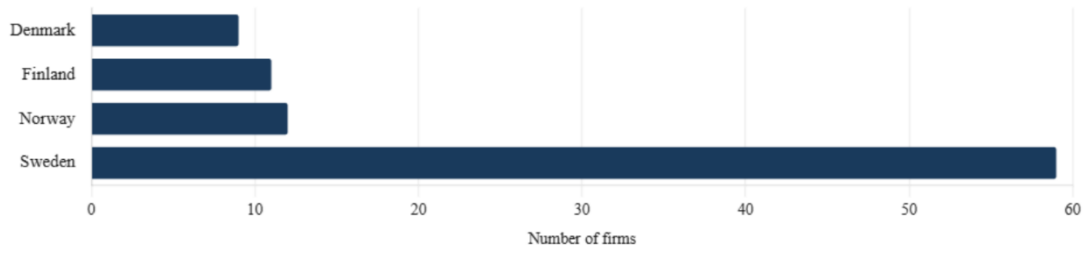


Figure 2: $N = 91$ firms. Percentages: Sweden 59 (64.8%), Norway 12 (13.2%), Finland 11 (12.1%), Denmark 9 (9.9%).

Table 2 reveals patterns of sponsor disengagement over time. The mean ownership declines from 30.4% at 0 months to just 9.7% at 24 months, with the median reaching zero at the 24-month mark. This indicates that more than half of the sponsors have fully divested two years after listing, aligning with the findings of Fürth and Rauch (2015) that PE investors typically remain invested for an average of 2.8 years after listing. Board representation follows a similarly sharp trajectory, falling from 93.4% at IPO to 42.9% at 24 months, aligned with Jenkinson et al.'s (2025) finding that sponsors usually remain on the board of portfolio companies following listing. Despite the rapid reduction in engagement in the sample, mean ROA declines only modestly from 11.96% to 11.11% across the three intervals, EBITDA remains broadly stable, and sales growth shows no clear directional trend.

TABLE 2
Descriptive statistics by time since IPO

	12m	24m	36m
Mean ownership (%)	0.304	0.164	0.097
Median ownership (%)	0.261	0.128	0.000
Board representation (%)	93.4%	70.3%	42.9%
Mean ROA	0.1196	0.1146	0.1111
Mean EBITDA margin	0.1331	0.1312	0.1331
Mean sales growth	0.1492	0.1332	0.1585
Mean leverage	0.5472	0.5472	0.5472
Number of firms	91	91	91

Table 2: Governance variables (ownership, board) measured at $t-1$. Financial variables measured at t . Column headers refer to the financial measurement period; governance values shown correspond to the IPO date (12m column), 12 months post-IPO (24m column), and 24 months post-IPO (36m column).

Table 3 compares high-and low-ownership firm-intervals, defined by within period median split. The most notable finding is that high ownership observations are associated with significantly lower sales growth than low-ownership observations (11.49% versus 17.40%), as well as lower ROA and EBITDA margin, although these latter differences are not statistically significant. It is also notable that high ownership is more likely to have board representation (92.0% versus 49.3%), indicating that the two engagement

dimensions move closely together. This is further supported by their correlation of 0.528 reported in Table 5, motivating their joint consideration in the multivariate analysis.

TABLE 3

Univariate comparison: high vs. low sponsor ownership

	High ownership	Low ownership	Difference	p-value
ROA	0.1083	0.1208	-0.0125	0.213
EBITDA margin	0.1245	0.1391	-0.0146	0.323
Sales growth	0.1149	0.1740	-0.0591**	0.011
Board representation	0.9200	0.4932	0.4268***	0.000
IPO leverage	0.5264	0.5647	-0.0382*	0.082
Log market cap	21.6743	21.4697	0.2046	0.142
Unique firms appearing in group	62	69		

Table 3: Groups defined by within-interval median split on sponsor ownership. Difference = High – Low. Firm counts are not mutually exclusive because firms may move between high- and low-ownership groups across measurement intervals.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (Welch two-sample t-test).

Table 4 examines performance by board representation. Despite a large ownership difference between board and non-board observations, all three performance measures are statistically indistinguishable across the two groups.

TABLE 4

Univariate comparison: board representation vs. no board representation

	Board = 1	Board = 0	Difference	p-value
Sponsor ownership (%)	0.2581	0.0345	0.2236***	0.000
ROA	0.1134	0.1188	-0.0054	0.577
EBITDA margin	0.1268	0.1450	-0.0183	0.212
Sales growth	0.1405	0.1612	-0.0206	0.424
IPO leverage	0.5385	0.5663	-0.0278	0.226
Log market cap	21.6158	21.4476	0.1682	0.219
Unique firms appearing in group	85	53		

Table 4: Firm counts are not mutually exclusive because firms may change board-representation status across measurement intervals.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (Welch two-sample t-test).

Table 5 reports pairwise correlations, where sponsor ownership and board representation are both negatively correlated with all three performance outcomes. IPO leverage is positively correlated with ROA (0.257) and EBITDA margin (0.360), consistent with Jensen's (1986) free cash flow discipline effect.

TABLE 5
Pairwise correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Sponsor own. (%)	1.0						
(2) Board rep.	0.528	1.0					
(3) ROA	-0.108	-0.03	1.0				
(4) EBITDA margin	-0.088	-0.07	0.534	1.0			
(5) Sales growth	-0.134	-0.05	0.161	0.048	1.0		
(6) Log market cap	0.124	0.069	-0.032	0.275	-0.17	1.0	
(7) IPO leverage	-0.086	-0.072	0.257	0.36	-0.026	0.27	1.0

Table 5: Pairwise correlation matrix of the variables used in the regression analysis.

5. Empirical Methodology

This section outlines the econometric framework used to evaluate the impact of sponsor engagement, specifically retained ownership and board representation, on the post-IPO operating performance of sponsor-backed firms. To rigorously test this relationship, the primary analysis relies on a longitudinal panel data approach, incorporating a comprehensive fixed effects strategy and robust standard errors.

5.1. Regression Setup and Model Specification

To examine the relationship between financial sponsor engagement and a firm's post-IPO operating performance, the baseline empirical specification is estimated using the following Ordinary Least Squares (OLS) panel data set-up:

$$Y_{i,t} = \beta_1 \text{Ownership}_{i,t-1} + \beta_2 \text{Board}_{i,t-1} + \gamma_1 \text{Leverage}_i + \gamma_2 \text{Size}_i + \alpha_s + \alpha_c + \alpha_y + \alpha_m + \varepsilon_{i,t}$$

Where t indexes the measurement periods (roughly corresponding to 12, 24, and 36 months post-IPO), i indexes individual firms, s indexes sectors, c indexes countries, y indexes calendar years, and m indexes the measurement intervals.

$Y_{i,t}$ is the dependent variable of interest representing the operational performance (ROA, EBITDA Margin, or Sales Growth). α_s , α_c , α_y , and α_m are sector-, country-, year-, and measurement interval-fixed effects. To capture the dimensions of sponsor engagement, $\text{Ownership}_{i,t-1}$ represents the continuous percentage of the sponsor's retained equity stake, and $\text{Board}_{i,t-1}$ is a binary dummy indicating whether the sponsor holds at least one board seat. Furthermore, in alternative specifications, the continuous variable for ownership is substituted with $\text{OwnershipDummy}_{i,t-1}$, a binary dummy indicating whether the sponsor retains any equity. To avoid issues of multicollinearity between the engagement metrics, they are analysed both independently and jointly. To control for firm-specific characteristics, the model includes Leverage_i , representing the firm's time-invariant, winsorised capital structure at the time of the IPO, and Size_i , representing the time-invariant natural logarithm of the firm's market capitalisation at the time of the IPO.

The main coefficients of interest are β_1 and β_2 , which measure the respective effects of the sponsor's previous ownership engagement and board representation on the subsequent realised operational performance. Crucially, the independent variables capturing sponsor engagement ($\text{Ownership}_{i,t-1}$, $\text{Board}_{i,t-1}$, and $\text{OwnershipDummy}_{i,t-1}$) are systematically lagged by one measurement period relative to the dependent variable. This lagged structure is implemented to address the risk of reverse causality, as it ensures that the sponsor's choice to retain ownership or board seats chronologically precedes the financial performance, thereby strengthening the directionality of the estimated relationship.

To isolate the sponsor effect and mitigate omitted variable bias, the model incorporates a comprehensive fixed effects approach. α_y represents Calendar Year fixed

effects, which absorb macroeconomic trends, market-wide shocks, and mechanical structural shifts in accounting standards, such as the introduction of IFRS 16 from 2019. Meanwhile, α_m represents Measurement Interval fixed effects, controlling for "event time" to capture the natural maturation of the firm following its public listing. Furthermore, α_c controls for institutional, regulatory, and macroeconomic differences across the Nordic region (La Porta et al., 1998), while α_s captures unobserved time-invariant heterogeneity across industry sectors. While the inclusion of these fixed effects consumes a number of degrees of freedom, introducing a risk of over-specification, this empirical trade-off is deliberately accepted to mitigate omitted variable bias. To ensure the reliability of the estimated coefficients and the stability of the model, we conducted diagnostic tests for multicollinearity using Variance Inflation Factors (VIF). Lastly, we cluster standard errors at the firm level to account for within-firm correlation over time (Petersen, 2009).

Finally, to ensure the stability of the baseline results, a brief set of supplementary robustness checks is performed. These include introducing squared terms to control for non-linear (U-shaped) relationships, testing an interaction term between ownership and board representation to assess potential complementarity effects, and restricting the sample to the post-financial crisis period (2009–2020). The five nested specifications are also re-estimated separately for each measurement interval and without IPO leverage as a control, to assess the sensitivity of the engagement coefficients to the pooled structure and to the inclusion of leverage. We also attempted an Instrumental Variable (2SLS) specification using the end-of-lifecycle dummy, but this produced a weak first-stage and is therefore reported in Section 6.2 as a diagnostic only. As these supplementary tests serve only as diagnostic controls, they are briefly summarised in the results section, allowing the primary focus to remain entirely on the robust baseline OLS estimates.

6. Results and Analysis

This chapter presents the empirical findings of the study. Section 6.1 reports the baseline OLS regression estimates across the three operational performance metrics, while Section 6.2 summarises the supplementary robustness tests. The theoretical implications and formal evaluations of these findings are discussed in Chapter 7.

6.1. Baseline Regression Results

The baseline analysis relies on Ordinary Least Squares (OLS) panel regressions to test the relationship between financial sponsor engagement and post-IPO operating performance. We cluster standard errors at the firm-level throughout.

The three dependent variables: Return on Assets, EBITDA Margin, and Sales Growth, are each estimated across five nested model specifications. Models 1 and 2 introduce the continuous and binary measures of sponsor ownership, respectively. Model 3 isolates the effect of board representation. Models 4 and 5 present joint specifications combining board representation with each of the two ownership measures. All models include IPO leverage and log market capitalisation as firm-level controls, as well as sector, country, calendar year, and measurement interval fixed effects. We cluster standard errors at the firm level throughout. Table 6 reports the results for ROA.

TABLE 6
Main regression results: ROA

	(1) Own. %	(2) Own. dummy	(3) Board	(4) Own. % + Board	(5) Own. dum. + Board
Sponsor ownership (%)	-0.0316 (0.0400)			-0.0346 (0.0429)	
Sponsor ownership (dummy)		-0.0235* (0.0136)			-0.0316* (0.0165)
Board representation			-0.0025 (0.0138)	0.0032 (0.0147)	0.0142 (0.0164)
Log market cap	-0.0074 (0.0079)	-0.0072 (0.0079)	-0.0084 (0.0083)	-0.0075 (0.0080)	-0.0073 (0.0079)
IPO leverage	0.1077** (0.0497)	0.0988** (0.0500)	0.1098** (0.0504)	0.1079** (0.0496)	0.0972* (0.0501)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Interval FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R-squared	0.237	0.245	0.233	0.234	0.245
Observations	273	273	273	273	273

Table 6: Standard errors clustered at the firm level in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table reports the OLS regression coefficients for Return on Assets (ROA). Models 1-2 test ownership, Model 3 tests board representation, and Models 4-5 test their joint effects. All models include firm-level controls (Size, Leverage) as well as fixed effects (sector, country, year, and measurement interval).

The continuous ownership variable in Model 1 is negative (−0.032) but statistically insignificant, indicating that the size of the sponsor's retained equity stake has no measurable relationship to post-IPO ROA. The binary ownership dummy in Model 2, in contrast, is significant at the 10% level (−0.024), implying that firms in which the sponsor retains any equity exhibit on average 2.4 percentage points lower ROA than firms in which the sponsor has fully exited. Compared to the sample mean ROA of 11.5%, this corresponds to an approximately 21% reduction in ROA relative to the sample mean. Board representation in Model 3 is both economically and statistically insignificant (−0.003). The joint specifications reinforce the single-variable findings: in Model 4, the continuous ownership variable remains insignificant, and in Model 5, the ownership dummy retains its negative sign and 10% significance (−0.032) while board representation continues to show no effect. The adjusted R-squared ranges from 0.233 to 0.245 across the five specifications, suggesting that a meaningful share of the variation in ROA is absorbed by the combination of firm-level controls and fixed effects. IPO leverage is positive and significant across all specifications (ranging from 0.097 to 0.110), while log market capitalisation is negative but consistently insignificant. Table 7 presents the corresponding results for EBITDA Margin.

TABLE 7
Main regression results: EBITDA Margin

	(1) Own. %	(2) Own. dummy	(3) Board	(4) Own. % + Board	(5) Own. dum. + Board
Sponsor ownership (%)	-0.0379 (0.0532)			-0.0190 (0.0540)	
Sponsor ownership (dummy)		-0.0328* (0.0178)			-0.0284 (0.0187)
Board representation			-0.0227 (0.0216)	-0.0195 (0.0221)	-0.0076 (0.0238)
Log market cap	0.0187* (0.0101)	0.0191* (0.0104)	0.0183* (0.0107)	0.0188* (0.0102)	0.0192* (0.0104)
IPO leverage	0.1605*** (0.0616)	0.1476** (0.0601)	0.1597** (0.0622)	0.1587*** (0.0613)	0.1485** (0.0600)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Interval FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R-squared	0.383	0.392	0.386	0.384	0.390
Observations	273	273	273	273	273

Table 7: Standard errors clustered at the firm level in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table reports the OLS regression coefficients for EBITDA Margin. Models 1-2 test ownership, Model 3 tests board representation, and Models 4-5 test their joint effects. All models include firm-level controls (Size, Leverage) as well as fixed effects (sector, country, year, and measurement interval).

The continuous ownership variable in Model 1 is negative but insignificant (−0.038). The ownership dummy in Model 2 is significant at the 10% level (−0.033), closely mirroring the ROA finding: firms with any retained sponsor equity exhibit EBITDA margins 3.3 percentage points lower than firms with complete sponsor exit, a reduction of roughly

25% relative to the sample mean margin. However, this effect does not persist in the joint specification. In Model 5, the ownership dummy coefficient (-0.028) falls below the 10% threshold once board representation is controlled for. Board representation itself is insignificant in Models 3, 4, and 5. Among the control variables, IPO leverage enters positively and significantly across all five specifications (ranging from 0.148 to 0.161), consistent with the disciplinary role of debt on operational efficiency as hypothesised by Jensen (1986). Log market capitalisation is also positive and significant at the 10% level throughout, suggesting that larger firms at IPO sustain higher operating margins in the post-IPO period. The adjusted R-squared ranges from 0.383 to 0.392, noticeably higher than for ROA, indicating that the model explains a larger share of cross-sectional variation in margins than ROA. Table 8 presents the results for Sales Growth.

TABLE 8
Main regression results: Sales Growth

	(1) Own. %	(2) Own. dummy	(3) Board	(4) Own. % + Board	(5) Own. dum. + Board
Sponsor ownership (%)	-0.0998 (0.0683)			-0.1242* (0.0722)	
Sponsor ownership (dummy)		0.0007 (0.0295)			-0.0031 (0.0368)
Board representation			0.0050 (0.0276)	0.0254 (0.0298)	0.0066 (0.0346)
Log market cap	-0.0137 (0.0124)	-0.0171 (0.0126)	-0.0173 (0.0128)	-0.0139 (0.0124)	-0.0171 (0.0126)
IPO leverage	-0.0261 (0.0837)	-0.0177 (0.0858)	-0.0171 (0.0888)	-0.0237 (0.0840)	-0.0184 (0.0855)
<i>Sector FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Country FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Interval FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Clustered SE</i>	Firm	Firm	Firm	Firm	Firm
Adj. R-squared	0.128	0.121	0.121	0.127	0.117
Observations	273	273	273	273	273

Table 8: Standard errors clustered at the firm level in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table reports the OLS regression coefficients for Sales Growth. Models 1-2 test ownership, Model 3 tests board representation, and Models 4-5 test their joint effects. All models include firm-level controls (Size, Leverage) as well as fixed effects (sector, country, year, and measurement interval).

The pattern for Sales Growth differs from that observed for the two profitability measures. The continuous ownership variable in Model 4 is significant at the 10% level (-0.124), suggesting that a 10 percentage point increase in retained sponsor ownership is associated with a 1.24 percentage point reduction in annual revenue growth, once board representation is controlled for. The ownership dummy, in contrast, is entirely insignificant and economically negligible across all specifications (0.001 in Model 2, -0.003 in Model 5). Board representation remains insignificant in every specification. In contrast to the profitability regressions, neither IPO leverage nor log market capitalisation reaches statistical significance in any Sales Growth specification, suggesting that the capital structure and size effects documented for the profitability measures do not extend

to Sales Growth. The adjusted R-squared ranges from 0.117 to 0.128, substantially lower than for the profitability measures and reflecting the considerably higher unexplained variance in firm-level growth outcomes.

To summarise, the results across all three dependent variables and fifteen model specifications reveal no statistically significant positive association between sponsor engagement and post-IPO operating performance. The four instances in which an engagement variable reaches the 10% significance threshold, including the ownership dummy in Models 2 and 5 of the ROA regressions, the ownership dummy in Model 2 of the EBITDA Margin regressions, and the continuous ownership variable in Model 4 of the Sales Growth regressions, are all negative in sign. Board representation is insignificant in every specification, whether tested in isolation or jointly with either ownership measure. The adjusted R-squared ranges from approximately 12% for Sales Growth to 39% for EBITDA Margin, indicating that firm-level controls and fixed effects capture a substantial share of the variation in profitability, while cross-sectional variation in growth is driven predominantly by firm-specific factors outside the dimensions of sponsor engagement captured in this study. Hypothesis 3, predicting complementarity between ownership and board representation, is tested through an interaction term and reported in Section 6.2.

6.2. Robustness Tests

To address the potential endogeneity of sponsor engagement decisions, a Two-Stage Least Squares (2SLS) specification was estimated using an end-of-lifecycle dummy as an instrument for sponsor ownership. The instrument takes the value of one if the sponsor's fund is eight years or older at the time of the IPO, capturing the institutional pressure to exit arising from the fixed lifecycle of PE funds (Kaplan and Strömberg, 2009). To assess instrument relevance, first-stage regressions were run for each engagement variable (continuous ownership, the ownership dummy, and board representation) separately. The first-stage F-statistics range from 0.01 to 0.64 across the three specifications, all well below the conventional threshold of 10, indicating that the instrument lacks sufficient power to isolate exogenous variation in engagement. First-stage results are reported in Appendix Table 9. The 2SLS estimates can therefore not be interpreted causally. The OLS specifications in Section 6.1, combined with the lagged empirical design, are thus the primary strategy.

The remaining robustness checks confirm the stability of the baseline findings. Variance Inflation Factors (VIF) for all variables range from 1.10 to 1.41, well below the conventional threshold of 5, indicating no issues with multicollinearity. To test for a non-linear relationship between ownership and performance, a squared ownership term was introduced; the coefficient is insignificant across all three dependent variables, providing no evidence of a non-linear U-shaped effect. We included an interaction term between sponsor ownership and board representation to directly test Hypothesis 3. The coefficient

is insignificant in all specifications, confirming that board representation does not amplify the ownership effect. Finally, restricting the sample to firms listed after the global financial crisis (IPO years 2009–2020, $N = 210$) yields directionally consistent results, with the negative ownership coefficient for Sales Growth strengthening slightly to -0.145 .

Re-estimating the five specifications separately for each measurement interval (Appendix Tables 14–16), using grouped year fixed effects to preserve degrees of freedom, yields directionally consistent results across horizons, with the strongest negative associations between ownership and operating performance observed at the 12-month interval. We note, however, that this period coincides with the expiration of standard IPO lock-up agreements, so the sharper negative coefficients at this horizon may partly reflect lock-up-constrained retention rather than active sponsor engagement choices. Removing IPO leverage from the model (Tables 17–19) leaves the engagement coefficients qualitatively unchanged and, if anything, slightly larger in absolute magnitude, indicating that the leverage control does not mask the engagement-performance relationship. Regression tables for all robustness tests are reported in Tables 9–19 in the Appendix.

7. Discussion and Limitations

7.1. Discussion

7.1.1. Sponsor Engagement and Post-IPO Operating Performance

As shown in the results section, the empirical results across all fifteen model specifications provide no support for our three hypotheses. H1, predicting a positive relationship between the existence and size of retained sponsor ownership stake and post-IPO operating performance, is rejected. The continuous ownership variable is insignificant for both ROA and EBITDA Margin, while the binary ownership dummy is negative and significant for ROA and negative and significant in the standalone EBITDA specification. For Sales Growth, the continuous ownership measure is significantly negative only in the joint specification. H2, predicting that operating performance is positively related to board representation, is not supported as board representation is insignificant across all specifications and dependent variables. H3, predicting that the positive effect of retained ownership is amplified when the sponsor also retains board representation, is equally unsupported as the interaction term is insignificant in every specification. The overarching findings therefore suggest that neither dimension of post-IPO sponsor engagement is associated with improved operating performance, and where statistical significance emerges, it runs counter to the predictions of the governance persistence hypothesis.

One pattern within these results is particularly insightful. The binary ownership dummy, simply capturing whether any equity stake is retained, is more consistently significant than the continuous ownership measure. Under a governance mechanism, we would expect performance to scale with the size of the retained stake. However, the fact that for profitability measures it is instead the binary presence of a retained stake rather than its size that carries a signal already suggests that the observed relationship may not reflect governance intensity. This interpretation is further reinforced by the insignificance of board representation across all specifications. Since board involvement represents a more direct governance channel, a genuine governance story would predict the relationship with performance to be even stronger for board presence than for residual equity ownership. The absence of any board effect is therefore arguably more consistent with the Jenkinson et al. (2025) story of exit difficulty, whereby sponsors retain equity not out of governance commitment but because poor performance and low valuations make exit unattractive.

7.1.2. Selection into Retention Rather than Governance Causality

One plausible explanation for the negative ownership coefficients is that retention decisions are not exogenous governance choices but are at least partly determined by underlying firm performance. Rather than sponsors choosing to remain engaged in order

to protect and create operational improvements, the direction of the relationship may run in the reverse, where weaker operating performance causes sponsors to retain ownership because depressed valuations and limited buyer appetite might make exit unattractive or reputationally costly. Under this interpretation, the negative coefficients do not imply that sponsor ownership causes operational deterioration. Rather, they reflect the fact that firms where sponsors remain present are disproportionately those where performance has been insufficient to enable a profitable exit. This reverse selection story finds support in Jenkinson et al. (2025), who document that general partners tend to be reluctant to sell underperforming portfolio companies, generating precisely the pattern we observe, namely high retention concentrated among weaker performers. Baker and Gompers (2003) similarly emphasise that governance arrangements are endogenous outcomes of performance characteristics rather than independent inputs into it, which in our setting includes the possibility that sponsor engagement reflects underlying firm quality or exit conditions rather than actively influencing performance.

This pattern is further reinforced by Lerner (1995), who shows that if sponsors rationally increase engagement when monitoring needs are higher (such as when firms are struggling) a negative correlation between engagement intensity and performance is consistent with rational sponsor behaviour, rather than evidence that engagement causes underperformance. What the ownership variable captures in our data may therefore not be the governance contribution of retained sponsors, but the performance characteristics of firms they were unable to exit. The descriptive statistics point in the same direction. High-ownership firm-intervals exhibit significantly lower sales growth than low-ownership intervals (11.49% versus 17.4%) as well as lower profitability measures, although the latter two are statistically insignificant. Notably, if retained ownership had a beneficial governance effect, we would anticipate the opposite pattern. The stronger explanatory power of the binary ownership indicator further reinforces this interpretation. What appears to matter empirically is whether the sponsor is still present at all, which in a reverse selection framework potentially captures the inability or unwillingness to exit, rather than the size of any retained stake.

7.1.3. The Role of the Nordic Institutional Environment and the Timing of Value Creation

A second, complementary explanation may more specifically account for the absence of any significant effect of board representation on performance. In the Nordic context, the marginal monitoring value of a sponsor board seat is plausibly lower than in other markets since the baseline governance environment may already supply much of what the sponsor would otherwise provide. La Porta et al. (1998), show that concentrated ownership can substitute for weak external governance, implying that its incremental value diminishes where external governance is already strong. Consistent with this, Thomsen (2016) documents that Nordic countries rank among the highest globally on governance quality, minority shareholder protection, and corruption control. In such an environment, transparent reporting requirements, active institutional investors, and strong regulatory

oversight may collectively perform the monitoring function that sponsor board representation is theorised to provide, which may partly account for why in our data continued board presence appears to add no value in the post-IPO period. Under this interpretation, the null result on board representation does not necessarily reflect a limitation of the study but may instead represent a genuine structural feature of the Nordic governance setting, which would not be expected to disappear with a larger sample or a different empirical design.

An important complementary observation concerns the absence of performance deterioration as sponsors disengage. Over the 24-month post-listing period, sponsor ownership declines sharply from 30.4% to 9.7% and board representation falls significantly from 93.4% to 42.9%. Yet, operating performance remains broadly stable as EBITDA margins show no meaningful trend and ROA declines only modestly. This stability is difficult to reconcile with a view in which continued sponsor engagement post-IPO is operationally necessary to sustain performance. One possible interpretation, consistent with Dong et al. (2020), is that the operational restructuring implemented during the private phase has been sufficiently embedded by the time of the listing such that firms can sustain performance independently of continued sponsor involvement. Under this interpretation, post-IPO engagement may be of limited incremental value, not because governance is unimportant but because the process of value creation was completed before the IPO rather than after it. The performance stability across intervals could therefore reflect the durability of pre-IPO value creation rather than the effectiveness of post-IPO governance, which in itself could be informative about where in the PE lifecycle value is generated in the Nordic context.

7.1.4. Implications and Relation to Prior Literature

Our findings stand in apparent tension with the positive engagement-performance relationships documented in Levis (2011) and Cao and Lerner (2009), but an important design difference largely reconciles this. Both of the mentioned studies compare sponsor-backed to non-sponsor-backed firms in order to identify the binary treatment effect of sponsor backing, whereas this paper examines whether variation in post-IPO engagement intensity within an already sponsor-backed sample explains differences in subsequent operating performance. In this sense, our findings do not challenge the broader conclusion that sponsor-backed firms may outperform non-sponsored firms. Moreover, the outperformance documented in these studies may partly reflect sponsors selecting and bringing higher-quality firms to market rather than post-IPO monitoring driving subsequent performance. Under this interpretation, much of the performance advantage of sponsor-backed firms is already embedded in firm quality at the time of listing, which would help explain why variation in post-IPO engagement intensity within an already sponsor-backed sample carries limited explanatory power for operating performance in our results. Accordingly, our results suggest that once a firm is already sponsor-backed,

the degree of continued sponsor engagement does not explain variation in post-IPO operating performance.

Although we cannot establish causality, the magnitudes are economically meaningful as conditional correlations. The binary ownership effects translate to roughly a 21% reduction in ROA and 25% reduction in EBITDA margin relative to sample means, while the continuous ownership coefficient implies a 1.24 percentage point reduction in annual sales growth per 10 percentage point increase in retention. For a post-IPO investor assessing a Nordic sponsor-backed firm in which the original sponsor has not yet fully exited, these associations imply that the retained ownership structure is associated with weaker performance, regardless of whether the relationship reflects governance causality or selection.

The most economically robust finding in the paper, however, concerns neither ownership nor board representation. The positive and consistently significant relationship between IPO leverage and operating performance across profitability specifications provides the clearest alignment with prior literature. One interpretation is that this finding is consistent with Jensen's (1986) free cash flow hypothesis, which suggests that leverage-induced discipline constrains managerial discretion and reduces value-destroying behaviour. However, the relationship may also partly reflect reverse causality, as more profitable firms typically have greater debt capacity and may therefore enter public markets with higher leverage. Nevertheless, this directly aligns with Guo et al.'s (2009) conclusion that leverage discipline is a more reliable predictor of post-buyout operating performance than governance mechanisms. Jensen's (1986) free cash flow hypothesis receives stronger empirical support in our results than any engagement variable does, would hence support the view that the financial structure established in relation to the listing may be a more important driver of operating performance. For post-IPO investors in Nordic sponsor-backed firms, this suggests that the debt structure may carry more information about subsequent performance than the presence or absence of a retained sponsor stake. Additionally, once the reverse selection dynamics are considered, sponsor retention could potentially be interpreted as a signal of exit difficulty rather than as a signal of quality or continued governance. Our results suggest that any sponsor value creation in the Nordics would likely lie in the private phase rather than in a post-IPO setting, and that once firms enter a well-governed public market, the marginal value of sponsor engagement appears limited.

7.2. Limitations and Further Research

Several limitations of this study deserve attention. First, the relatively small sample of 91 sponsor-backed Nordic IPOs, while representing the full population of firms that meet the inclusion criteria, constrains statistical power. A number of coefficients that are economically meaningful in magnitude fail to reach conventional significance thresholds, and the interpretations should keep this in mind. That said, the predominantly negative

direction of coefficients, whether significant or insignificant, across specifications suggests that the absence of positive findings is unlikely to only be due to insufficient power.

Second, and most important, the study cannot establish causality. The lagged empirical design, where governance variables at $t-1$ predict performance at t , addresses the risk of reverse causality within each measurement interval but does not eliminate the possibility that the observed relationships reflect selection rather than a causal governance effect. The instrumental variable approach was designed to address this endogeneity using the end-of-lifecycle dummy; however, the weak first-stage F-statistics across all three engagement variables rendered the 2SLS estimates unreliable. The study therefore relies on OLS as its primary identification strategy, and the estimated coefficients should be interpreted as conditional correlations rather than causal effects.

Third, the exclusion of firms delisted within 36 months of their IPO introduces survivorship bias. These firms likely represent the weakest-performing part of the population, and their exclusion likely leads to bias in the estimated engagement-performance relationship in a positive direction, meaning the true relationship between sponsor engagement and operating performance may be even more negative than the baseline estimates suggest. Fourth, the pooled OLS specification does not account for unobserved firm-specific heterogeneity. While firm fixed effects would address this, their inclusion would absorb the time-invariant controls, IPO leverage and firm size, which are theoretically important controls in the private equity context. This trade-off is deliberately accepted, though residual unobserved heterogeneity at the firm level remains a potential source of omitted variable bias.

Finally, the findings are specific to the Nordic context. The strong governance standards, high investor protections, and regulatory transparency characteristic of Nordic markets may reduce the marginal value of sponsor engagement relative to other studied markets. The results should therefore be interpreted with caution when making comparisons to other markets with different governance standards and private equity market structures. Additionally, the sample pools traditional PE buyouts and large VC investments where the sponsor was the principal shareholder at IPO. Although these are functionally equivalent on public markets in terms of exit pressures and lock-up dynamics, results may not generalise to settings where VC and PE engagement patterns differ more substantially.

Future research could address these limitations in several ways. Larger cross-country samples would improve statistical power and enable direct comparison of engagement effects across governance environments with different investor protection standards. Stronger instruments for continued sponsor ownership, perhaps based on LP redemption pressure driving exits, could enable more credible causal identification. Additionally, future research could examine whether engagement effects vary depending on the sponsor type or deal characteristics such as pre-IPO holding period length or pre-IPO firm operating performance. Finally, it would be interesting to complement the

operating performance with market performance to test the dynamics between stock-prices and engagement decisions.

8. Conclusion

In this paper, we examine how the degree of continued sponsor engagement following an IPO relates to operating performance among sponsor-backed firms. Focusing on a sample of 91 Nordic IPOs between 2000 and 2020, we analyse how variation in post-IPO engagement, captured through ownership retention and board representation, relates to firm performance over the first three years after listing. By restricting the sample to sponsor-backed firms, we isolate variation in engagement intensity rather than the binary effect of private equity ownership.

We find no evidence that continued sponsor engagement has a positive effect on post-IPO operating performance. Across all specifications, neither retained ownership nor board representation is positively associated with ROA, EBITDA Margin, or Sales Growth. Where statistically significant, the relationship is negative, suggesting that firms with continued sponsor involvement do not outperform but rather underperform those in which sponsors exit more quickly. At the same time, operating performance remains broadly stable despite a substantial decline in sponsor ownership and board presence after the IPO, suggesting that post-IPO performance is not associated with continued sponsor engagement. The patterns are also consistent with selection in retention decisions. The negative association between ownership and performance may reflect sponsors remaining invested in firms where exit is less attractive, rather than where future prospects are strongest. We also find that IPO leverage is positively associated with operating performance, consistent with prior literature pointing to the disciplinary role of debt.

We acknowledge that our analysis does not establish causal relationships. While we employ a lagged empirical design, identification challenges remain, and the results should be interpreted as conditional associations. Our findings suggest that the marginal value of sponsor engagement in a public setting is likely to depend on the institutional environment and may be limited in regions such as the Nordics, where investor protection and regulatory quality are already strong. Furthermore, we show that for profitability measures, it is the presence of a retained stake rather than board engagement or variation in the retained stake that is associated with differences in operating performance. Lastly, while our results show that the presence of a retained stake is associated with lower operating performance, the direction of causality remains ambiguous as sponsor engagement decisions might themselves be driven by operating performance rather than the other way around.

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10. Appendix

10.1. AI-Disclosure

The generative AI tools used during the writing of this thesis were Claude, ChatGPT, and Google Gemini.

In line with the prior approval obtained from our supervisor, AI tools were used in three areas. First, AI assisted in developing and refining the Python code that produced the baseline regressions, the supplementary robustness tests, and the descriptive statistics, as well as the visual formatting of the resulting tables, all based on data collected by us. Second, AI tools were used for language editing throughout the thesis, including grammar, spelling, flow, readability, and structural clarity. Lastly, AI was used as a drafting aid in structuring sections and improving text.

AI tools contributed to the quality of the thesis by improving the technical execution of the empirical work in python and developing a more polished end-product. They functioned as productivity and editorial aids, complementing our analytical work rather than substituting for it.

We were aware throughout of the general risks associated with generative AI tools, including the potential for factual inaccuracies and generic phrasing. Our workflow was therefore structured around producing the underlying content, ideas, and results ourselves, with AI used afterwards to improve, structure, or edit. Results were checked against the underlying data and sources, and any AI-assisted refinements were reviewed and adapted to reflect our own reasoning before inclusion.

The use of AI proved particularly helpful in the empirical implementation, where our prior experience with Python was limited. AI assistance shortened the technical learning curve while still allowing us to understand the methodology and adapt the code to our research design, thus allowing us to focus more time on the analysis. More broadly, generative AI has become a widely used part of modern research and writing, and the experience reinforced our view that AI is a valuable tool when applied with discipline, but whose output must be critically reviewed.

10.2. Tables

TABLE 9

First-stage IV regressions: Engagement variables on End-of-Lifecycle instrument

	Sponsor Ownership (cont.)	Sponsor Ownership Dummy	Board Representation
End-of-Lifecycle Dummy	0.0078 (0.0295)	-0.0081 (0.0702)	-0.0565 (0.0709)
t-statistic	0.264	-0.115	-0.798
p-value	0.7916	0.9082	0.4251
First-stage F-statistic	0.07	0.01	0.64
Log MCap	Yes	Yes	Yes
IPO Leverage	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes
Interval FE	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm
Adj. R ²	0.248	0.302	0.231
N	273	273	273

Table 9: First-stage regressions of each engagement variable on the end-of-lifecycle dummy (equal to 1 if the sponsor's fund is 8 years or older at the IPO date) and a full set of exogenous controls. For binary engagement variables, the first stage is estimated as a linear probability model. Year fixed effects are grouped into macroeconomic periods (pre-2008, 2008–2014, post-2015) to preserve degrees of freedom. Standard errors clustered at the firm level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 10

Variance inflation factors (VIF)

Variable	VIF
Sponsor ownership	1.41
Board representation	1.39
Log market cap	1.10
IPO leverage	1.10

Table 10: VIF values below 5 indicate no multicollinearity concern.

TABLE 11
Robustness tests: ROA

	R1: Non-linear (U-shape)	R2: Interaction (Own. x Board)	R3: Post-2008 subsample
Sponsor ownership (%)	-0.1086 (0.0870)	-0.0364 (0.0992)	0.0152 (0.0350)
Sponsor ownership squared	0.1100 (0.1011)		
Board representation	0.0079 (0.0161)	0.0030 (0.0167)	-0.0110 (0.0159)
Ownership x Board		0.0020 (0.1021)	
Log market cap	-0.0072 (0.0080)	-0.0075 (0.0080)	0.0027 (0.0062)
IPO leverage	0.1051** (0.0499)	0.1079** (0.0506)	0.0989** (0.0500)
<i>Sector FE</i>	Yes	Yes	Yes
<i>Country FE</i>	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes
<i>Interval FE</i>	Yes	Yes	Yes
<i>Clustered SE</i>	Firm	Firm	Firm
Adj. R-squared	0.234	0.230	0.267
Observations	273	273	210

Table 11: Standard errors clustered at the firm level in parentheses. Post-2008 subsample includes IPO years 2009–2020 ($N=210$).

* $p<0.1$, ** $p<0.05$, *** $p<0.01$

TABLE 12
Robustness tests: EBITDA Margin

	R1: Non-linear (U-shape)	R2: Interaction (Own. x Board)	R3: Post-2008 subsample
Sponsor ownership (%)	-0.0422 (0.1085)	0.0706 (0.1717)	0.0438 (0.0509)
Sponsor ownership squared	0.0344 (0.1309)		
Board representation	-0.0180 (0.0229)	-0.0139 (0.0221)	-0.0290 (0.0259)
Ownership x Board		-0.0976 (0.1738)	
Log market cap	0.0188* (0.0102)	0.0189* (0.0102)	0.0270** (0.0107)
IPO leverage	0.1578** (0.0615)	0.1633*** (0.0617)	0.1200* (0.0676)
<i>Sector FE</i>	Yes	Yes	Yes
<i>Country FE</i>	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes
<i>Interval FE</i>	Yes	Yes	Yes
<i>Clustered SE</i>	Firm	Firm	Firm
Adj. R-squared	0.382	0.383	0.429
Observations	273	273	210

Table 12: Standard errors clustered at the firm level in parentheses. Post-2008 subsample includes IPO years 2009–2020 ($N=210$).

* $p<0.1$, ** $p<0.05$, *** $p<0.01$

TABLE 13

Robustness tests: Sales Growth

	R1: Non-linear (U-shape)	R2: Interaction (Own. x Board)	R3: Post-2008 subsample
Sponsor ownership (%)	-0.0186 (0.1708)	-0.2547 (0.2350)	-0.1448* (0.0782)
Sponsor ownership squared	-0.1571 (0.1939)		
Board representation	0.0185 (0.0323)	0.0172 (0.0331)	0.0313 (0.0294)
Ownership x Board		0.1421 (0.2409)	
Log market cap	-0.0142 (0.0124)	-0.0141 (0.0124)	0.0026 (0.0118)
IPO leverage	-0.0197 (0.0830)	-0.0303 (0.0832)	-0.0364 (0.1038)
<i>Sector FE</i>	Yes	Yes	Yes
<i>Country FE</i>	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes
<i>Interval FE</i>	Yes	Yes	Yes
<i>Clustered SE</i>	Firm	Firm	Firm
Adj. R-squared	0.125	0.125	0.033
Observations	273	273	210

Table 13: Standard errors clustered at the firm level in parentheses. Post-2008 subsample includes IPO years 2009–2020 ($N=210$).

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

TABLE 14
Split-interval robustness: Return on Assets

	(1)	(2)	(3)	(4)	(5)
Panel A: $t = 12$ months ($N = 91$)					
Sponsor Ownership	-0.0531 (0.0454)			-0.0486 (0.0457)	
Sponsor Ownership Dummy		-0.0887** (0.0433)			-0.0906* (0.0469)
Board Representation			-0.0250 (0.0357)	-0.0162 (0.0355)	0.0034 (0.0308)
Log Market Cap	-0.0088 (0.0107)	-0.0070 (0.0113)	-0.0100 (0.0111)	-0.0082 (0.0110)	-0.0071 (0.0114)
IPO Leverage	0.1629*** (0.0584)	0.1492** (0.0614)	0.1560** (0.0609)	0.1582*** (0.0591)	0.1499** (0.0619)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.196	0.216	0.186	0.187	0.206
Panel B: $t = 24$ months ($N = 91$)					
Sponsor Ownership	-0.0422 (0.0477)			-0.0330 (0.0540)	
Sponsor Ownership Dummy		-0.0256 (0.0159)			-0.0262 (0.0186)
Board Representation			-0.0147 (0.0184)	-0.0090 (0.0207)	0.0014 (0.0213)
Log Market Cap	-0.0048 (0.0089)	-0.0045 (0.0091)	-0.0045 (0.0097)	-0.0042 (0.0094)	-0.0045 (0.0095)
IPO Leverage	0.1015* (0.0577)	0.0938 (0.0589)	0.1020* (0.0586)	0.1002* (0.0579)	0.0939 (0.0592)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.164	0.180	0.162	0.155	0.169
Panel C: $t = 36$ months ($N = 91$)					
Sponsor Ownership	0.0606 (0.0546)			0.0727 (0.0813)	
Sponsor Ownership Dummy		-0.0032 (0.0185)			-0.0098 (0.0272)
Board Representation			0.0054 (0.0180)	-0.0064 (0.0257)	0.0106 (0.0261)
Log Market Cap	-0.0109 (0.0089)	-0.0095 (0.0089)	-0.0095 (0.0088)	-0.0113 (0.0087)	-0.0091 (0.0087)
IPO Leverage	0.0865 (0.0552)	0.0762 (0.0555)	0.0788 (0.0539)	0.0880 (0.0562)	0.0711 (0.0567)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.188	0.177	0.178	0.179	0.169

Table 14: OLS estimates of the five nested specifications run separately for each measurement interval. Year fixed effects grouped into macroeconomic periods (pre-2008, 2008–2014, post-2015) to preserve degrees of freedom; interval fixed effects omitted as constant within each subset. Standard errors in parentheses, clustered at the firm level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 15
Split-interval robustness: EBITDA Margin

	(1)	(2)	(3)	(4)	(5)
<i>Panel A: t = 12 months (N = 91)</i>					
Sponsor Ownership	-0.0509 (0.0589)			-0.0339 (0.0555)	
Sponsor Ownership Dummy		-0.0848 (0.0593)			-0.0578 (0.0653)
Board Representation			-0.0670 (0.0582)	-0.0609 (0.0577)	-0.0489 (0.0657)
Log Market Cap	0.0194 (0.0131)	0.0210 (0.0141)	0.0202 (0.0138)	0.0215 (0.0134)	0.0221 (0.0143)
IPO Leverage	0.2223*** (0.0740)	0.2092*** (0.0768)	0.2033*** (0.0708)	0.2048*** (0.0713)	0.1994*** (0.0731)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.291	0.299	0.301	0.294	0.297
<i>Panel B: t = 24 months (N = 91)</i>					
Sponsor Ownership	-0.0246 (0.0625)			0.0126 (0.0729)	
Sponsor Ownership Dummy		-0.0278 (0.0201)			-0.0165 (0.0216)
Board Representation			-0.0338 (0.0265)	-0.0360 (0.0309)	-0.0237 (0.0293)
Log Market Cap	0.0179 (0.0116)	0.0188 (0.0120)	0.0203* (0.0124)	0.0202* (0.0122)	0.0203 (0.0124)
IPO Leverage	0.1482* (0.0771)	0.1380* (0.0781)	0.1426* (0.0789)	0.1433* (0.0778)	0.1376* (0.0779)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.374	0.385	0.387	0.379	0.382
<i>Panel C: t = 36 months (N = 91)</i>					
Sponsor Ownership	0.0477 (0.0717)			0.0497 (0.0942)	
Sponsor Ownership Dummy		-0.0114 (0.0223)			-0.0234 (0.0281)
Board Representation			0.0070 (0.0228)	-0.0011 (0.0296)	0.0193 (0.0287)
Log Market Cap	0.0170 (0.0108)	0.0185* (0.0111)	0.0182 (0.0112)	0.0170 (0.0112)	0.0192* (0.0113)
IPO Leverage	0.1358** (0.0666)	0.1207* (0.0658)	0.1298* (0.0663)	0.1360** (0.0671)	0.1115* (0.0660)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.343	0.341	0.340	0.335	0.338

Table 15: OLS estimates of the five nested specifications run separately for each measurement interval. Year fixed effects grouped into macroeconomic periods (pre-2008, 2008–2014, post-2015) to preserve degrees of freedom; interval fixed effects omitted as constant within each subset. Standard errors in parentheses, clustered at the firm level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 16
Split-interval robustness: Sales Growth

	(1)	(2)	(3)	(4)	(5)
Panel A: $t = 12$ months ($N = 91$)					
Sponsor Ownership	-0.2070** (0.1020)			-0.2115** (0.1008)	
Sponsor Ownership Dummy		-0.0923 (0.1547)			-0.0966 (0.1871)
Board Representation			-0.0225 (0.1037)	0.0162 (0.1000)	0.0078 (0.1358)
Log Market Cap	-0.0280 (0.0194)	-0.0333* (0.0197)	-0.0366* (0.0221)	-0.0286 (0.0208)	-0.0335 (0.0206)
IPO Leverage	0.0859 (0.1453)	0.0725 (0.1517)	0.0806 (0.1570)	0.0905 (0.1474)	0.0741 (0.1523)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.034	-0.006	-0.013	0.021	-0.019
Panel B: $t = 24$ months ($N = 91$)					
Sponsor Ownership	0.0475 (0.1189)			0.0052 (0.1304)	
Sponsor Ownership Dummy		0.0484 (0.0379)			0.0402 (0.0432)
Board Representation			0.0418 (0.0429)	0.0409 (0.0472)	0.0172 (0.0489)
Log Market Cap	-0.0126 (0.0182)	-0.0140 (0.0183)	-0.0152 (0.0187)	-0.0152 (0.0187)	-0.0151 (0.0189)
IPO Leverage	-0.1245 (0.1231)	-0.1070 (0.1223)	-0.1191 (0.1209)	-0.1188 (0.1220)	-0.1067 (0.1229)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.124	0.138	0.131	0.120	0.128
Panel C: $t = 36$ months ($N = 91$)					
Sponsor Ownership	-0.1916 (0.1320)			-0.1427 (0.1761)	
Sponsor Ownership Dummy		-0.0617 (0.0455)			-0.0461 (0.0666)
Board Representation			-0.0492 (0.0451)	-0.0260 (0.0584)	-0.0251 (0.0645)
Log Market Cap	-0.0061 (0.0222)	-0.0083 (0.0214)	-0.0112 (0.0211)	-0.0076 (0.0221)	-0.0092 (0.0213)
IPO Leverage	-0.0474 (0.1310)	-0.0715 (0.1352)	-0.0234 (0.1299)	-0.0414 (0.1311)	-0.0594 (0.1378)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE (grouped)	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.030	0.030	0.026	0.020	0.020

Table 16: OLS estimates of the five nested specifications run separately for each measurement interval. Year fixed effects grouped into macroeconomic periods (pre-2008, 2008–2014, post-2015) to preserve degrees of freedom; interval fixed effects omitted as constant within each subset. Standard errors in parentheses, clustered at the firm level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 17

No-leverage robustness: Return on Assets

	(1)	(2)	(3)	(4)	(5)
Sponsor Ownership	-0.0399 (0.0426)			-0.0411 (0.0454)	
Sponsor Ownership Dummy		-0.0316** (0.0140)			-0.0410*** (0.0158)
Board Representation			-0.0056 (0.0147)	0.0012 (0.0153)	0.0166 (0.0161)
Log Market Cap	-0.0031 (0.0082)	-0.0032 (0.0082)	-0.0041 (0.0086)	-0.0031 (0.0083)	-0.0034 (0.0083)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Interval FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.194	0.211	0.188	0.191	0.212
N	273	273	273	273	273

Table 17: OLS estimates of the five nested specifications excluding IPO Leverage as a control. Standard errors in parentheses, clustered at the firm level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 18

No-leverage robustness: EBITDA Margin

	(1)	(2)	(3)	(4)	(5)
Sponsor Ownership	-0.0502 (0.0622)			-0.0285 (0.0624)	
Sponsor Ownership Dummy		-0.0450** (0.0199)			-0.0427** (0.0208)
Board Representation			-0.0271 (0.0224)	-0.0224 (0.0222)	-0.0041 (0.0240)
Log Market Cap	0.0252** (0.0103)	0.0252** (0.0106)	0.0245** (0.0109)	0.0252** (0.0104)	0.0253** (0.0106)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Interval FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.338	0.355	0.342	0.340	0.353
N	273	273	273	273	273

Table 18: OLS estimates of the five nested specifications excluding IPO Leverage as a control. Standard errors in parentheses, clustered at the firm level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 19
No-leverage robustness: Sales Growth

	(1)	(2)	(3)	(4)	(5)
Sponsor Ownership	-0.0978 (0.0702)			-0.1228* (0.0740)	
Sponsor Ownership Dummy		0.0021 (0.0310)			-0.0014 (0.0387)
Board Representation			0.0055 (0.0276)	0.0258 (0.0295)	0.0062 (0.0348)
Log Market Cap	-0.0148 (0.0122)	-0.0178 (0.0120)	-0.0179 (0.0121)	-0.0148 (0.0120)	-0.0179 (0.0121)
Sector FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Interval FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Adj. R ²	0.132	0.124	0.124	0.130	0.121
N	273	273	273	273	273

Table 19: OLS estimates of the five nested specifications excluding IPO Leverage as a control. Standard errors in parentheses, clustered at the firm level.

** $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.*