LIFE AFTER LISTING

A Financial Performance Comparison of Secondary Buyout, Primary Buyout, and Non-PE IPOs

CLEMENS WOLF (42906)

ERIC OETTERLI (50787)

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Abstract

This thesis examines whether prior private equity ownership is associated with distinct post-IPO trajectories in revenue growth, EBITDA margin, and leverage among 5,413 US listings between 1990 and 2021: 400 primary buyouts (PBO), 71 secondary buyouts (SBO), and 4,942 non-PE-backed issuers. Pooled OLS regressions are estimated over a three-year post-IPO window. The analysis combines a primary within-PE study of SBO against PBO issuers with a secondary study of each PE group against a non-PE benchmark, using a propensity-trimmed comparable subset, and year-by-year cross-sections. The results describe a dimension-specific maturity gradient rather than a uniform PE imprint: SBOs grow revenue slightly slower than PBOs conditional on controls, and both PE groups grow significantly slower and carry persistently higher debt-to-assets ratios than non-PE peers, with the SBO discount roughly twice the PBO discount. EBITDA margin levels and growth show no within-PE differentiation, and the apparent PE margin premium against the non-PE benchmark reverses or disappears once loss-making firm-years are excluded.

Keywords

Private Equity, Initial Public Offering, Primary Buyout, Secondary Buyout, Post-IPO Performance

Authors

Clemens Wolf (42906), Eric Oetterli (50787)

Supervisor

Bo Becker, Cevian Capital Professor, Department of Finance

Specialization

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1 Introduction

Sales of PE portfolio companies to other PE funds, known as secondary buyouts (SBO), have grown from a marginal exit channel into one of the most common ones, accounting for approximately a third of all buyout exits in recent years (Arcot et al., 2015). Despite this prevalence, whether they perform differently from primary buyout firms (PBO), which have been subject to only one PE ownership phase, or from non-PE-backed issuers after a subsequent listing has not been directly examined. Accordingly, this thesis asks whether SBO IPO firms exhibit different post-IPO trajectories in *revenue growth, EBITDA margin*, and *leverage* compared to PBOs, and whether both PE-backed groups differ from non-PE-backed IPOs in ways that scale with the depth of prior PE ownership.

Research on PE-backed IPOs has developed along two principal lines but leaves this question unaddressed. The first examines stock-return performance of PE-backed IPOs, documenting price performance patterns following flotation but treating all PE buyout-backed IPOs as a single group (Cao & Lerner, 2009; Datta et al., 2015; Michala, 2019). The second compares SBOs and PBOs during the private holding period, documenting operational and leverage differences but stopping at the moment of exit (Achleitner & Figge, 2014; Bonini, 2015; Kick & Schwetzler, 2024; Wang, 2012). Jenkinson and Sousa (2013) provide the closest comparator, examining post-exit operational performance between firms retained under a new PE sponsor and those transitioning to public markets, but they contrast exit routes rather than SBO-versus-PBO differences within the IPO-exited universe.

The analysis of this thesis is descriptive. Panel regressions on firm-year observations document the conditional associations between PE-ownership history and post-IPO outcomes without identifying the underlying causal mechanisms. Drawing on 5,413 IPOs from the United States, listed between 1990 and 2021 and comprising 471 PE-backed firms (400 PBOs and 71 SBOs) and 4,942 non-PE-backed firms tracked across a three-year post-IPO window, the analysis documents a dimension-specific maturity gradient in post-IPO firm financial characteristics associated with prior PE ownership. Within the PE universe, SBOs grow revenue slower than PBO firms after controls, while EBITDA margin and leverage show no significant differences. Against the non-PE benchmark, both PE-backed groups grow revenue significantly slower, with the SBO discount more than twice the PBO discount, and both carry persistently higher gross debt to asset ratios three years after the IPO. The apparent EBITDA margin advantage of PE-backed firms over non-PE peers disappears once unprofitable non-PE firm-

years are excluded, indicating that the headline premium reflects loss-making firms depressing the non-PE average.

This study contributes to the literature in two ways. First, this thesis extends the SBO-versus-PBO comparison from the private holding period, where the existing comparative buyout literature concludes, into the post-IPO setting where it has not previously been examined. Second, the analysis reports both the within-PE comparison (SBOs versus PBOs) and the PE-versus-non-PE comparison, situating the SBO-versus-PBO distinction within the broader question of whether PE ownership is associated with differential firm performance in public markets. The dual-comparison structure reveals dimension-specific patterns that would not be visible from either comparison alone.

2 Literature Review and Hypothesis Development

This chapter develops the theoretical framework underlying the empirical analysis. Section 2.1 motivates the choice of performance metrics, Sections 2.2 reviews the literature on the SBO phenomenon, and Sections 2.3 and 2.4 develop the hypotheses tested in the within-PE primary study (H1-H3) and the PE-versus-non-PE secondary study (H4-H6).

2.1 Choice of Performance Metrics

Kaplan and Strömberg (2009) categorize three channels through which leveraged buyouts create value: operational, financial, and governance engineering. Operational engineering shapes top-line growth and operating margins through cost discipline, acquisitions and strategic repositioning. Financial engineering deploys leverage as both a return-amplifying instrument and a disciplinary device. Governance engineering operates through board composition, incentive structures, and reporting intensity. Consistent with the post-IPO PE literature and the comparative buyout literature on SBOs and PBOs (Achleitner et al., 2012; Achleitner & Figge, 2014; Bonini, 2015; Levis, 2011), this study tests five performance metrics that together reflect the joint imprint of these channels on firm financials. *Revenue growth* proxies the firm's continued capacity to expand its top line. *EBITDA margin levels* and *EBITDA margin growth* proxy operating profitability, capturing the efficiency with which the revenue converts into operating cash earnings. Net debt to EBITDA *(ND/EBITDA)* proxies flow-based financial risk by relating the debt burden to the cash earnings available to service it, and gross debt to total assets *(D/Assets)* proxies balance-sheet financial risk by relating the contractual debt obligation to the firm's asset base, independent of current profitability. The two leverage ratios can give different signals for the same firm: when EBITDA is small or volatile, *ND/EBITDA* can swing

widely while *D/Assets* remain stable, so reporting both captures the flow and balance sheet dimensions of leverage.

2.2 The Secondary Buyout Phenomenon

The literature on SBOs as an exit channel focuses on the following factors that affect the frequency of this exit path. SBO activity is procyclical with attractive debt market conditions and concentrated among funds approaching maturity, with fundraising pressure reinforcing the incentive to exit through secondary sales rather than IPOs (Axelson et al., 2013; Jenkinson & Sousa, 2015; Wang, 2012). Furthermore, firm characteristics are strongly associated with selection into PE-to-PE transactions. Jenkinson and Sousa (2015) find that, relative to IPO exits, PE portfolio firms exited through SBOs are more profitable and have lower capital expenditure than those exited through IPOs, with the more mature and cash-generative firms among PE-owned businesses more frequently channeled into secondary sales. Achleitner et al. (2012) extend this profile to the financing dimension, confirming that higher debt capacity further predicts a secondary exit over an IPO. These different firm level characteristics of PBOs and SBOs motivate the post-IPO predictions developed in Sections 2.3 and 2.4.

2.3 SBO vs. PBO Comparison (Primary Study)

For the PE-backed IPOs, the hypotheses for both the revenue growth and EBITDA margin growth trajectories rest on the following underlying logic: successive PE ownership rounds are associated with a progressively smaller set of unexploited operational improvement opportunities. Under this logic, PBOs realize the most accessible gains, with SBOs already closer to their operational frontier. This suggests that the residual operational improvement potential at the point of IPO is smaller for SBO than for PBO firms, which have been subject to only one round of PE intervention. A complementary prediction on EBITDA margin levels rests on a distinct mechanism, namely the selection of more profitable firms into the SBO channel. This selection mechanism is developed alongside the improvement-trajectory argument in Section 2.3.2.

2.3.1 SBO vs. PBO - Revenue Growth

Both SBO and PBO firms generate positive revenue growth during their respective PE ownership phases. Bonini (2015), tracking European companies through both their PBO and the following SBO phase, finds that sales are approximately 18% higher in the years following the PBO relative to the pre-buyout phase, while under SBO ownership no significant incremental sales change is observed beyond what PBO ownership had already delivered.

Achleitner and Figge (2014) report that SBOs produce marginally higher median sales growth than PBOs in univariate comparisons, but with no significant difference in the multivariate specification. Similarly, Wang (2012) finds no consistent evidence of higher sales growth in SBOs relative to PBOs. In a related working paper, Jenkinson and Sousa (2013) compare firms exited through an IPO with those exited through a secondary sale. They find that IPO-exited firms achieve median cumulative sales growth of 62.6% over the three years following exit, compared to 24.2% for firms exited via secondary sales, a gap that remains after controlling for industry effects, pre-exit characteristics, and selection into the exit route. The authors attribute this difference partly to longer prior holding periods and to the lower experience levels of the acquiring sponsors.

Degeorge et al. (2016) show that SBOs create value primarily when the acquiring sponsor possesses capabilities complementary to those of the seller, for example by facilitating international expansion or shifting from a margin-oriented to a growth-oriented strategy. When such complementarity is absent, the residual set of growth opportunities is expected to be smaller. For firms that subsequently exit through an IPO, the range of accessible growth levers at the point of listing is therefore expected to be narrower for those emerging from a SBO than for those emerging from a PBO. PBO IPO firms, having been subject to only a single round of private equity intervention, may retain more easily accessible growth potential that could be realized in the public market setting.

H1: PBO IPO firms achieve higher revenue growth in the three years following IPO than SBO IPO firms.

2.3.2 SBO vs. PBO - EBITDA Margin Growth and Levels

The literature finds PBOs generate larger holding-period EBITDA margin improvements than SBOs, though the size and statistical significance of the gap varies across studies. Similar to his findings on revenue, Bonini (2015) finds that PBOs generate large and statistically significant improvements in operating performance compared to public comparables, whereas SBOs' margin growth shows no such difference. Wang (2012) reaches the same directional conclusion that SBO targets exhibit positive absolute EBITDA growth post-transaction, while EBITDA margins show no meaningful improvement in subsequent years, suggesting that profit growth reflects expansion rather than operating efficiency gains. Kick and Schwetzler (2024) find in their back-to-back sample of matched PBO-SBO chains that both rounds generate positive margin improvement, with PBOs expanding 0.7 pp against 0.1 pp for consecutive SBOs (median), and Achleitner and Figge (2014) report median margin expansions of 8 pp for PBOs

against 3 pp for SBOs. However, they note that once controls are added, the univariate gap narrows and loses statistical significance.

Translating this pattern into a post-IPO prediction requires additional assumptions about the post-IPO environment. First, operating performance generally deteriorates following IPOs. Jain and Kini (1994) attribute this to three drivers: agency costs that emerge as managerial ownership is diluted at flotation, the reversal of earnings management that inflates pre-IPO results, and the tendency of firms to go public when performance is temporarily at its peak. Holthausen and Larcker (1996) confirm this performance deterioration relative to the pre-IPO baseline. This deterioration pattern is assumed to apply to both SBO and PBO firms as a common baseline.

Second, operational improvement processes linked to PE sponsor involvement are at different stages of maturity at the IPO. Muscarella and Vetsuypens (1990) document that operating margins at reverse LBOs[1] improve substantially during the private ownership period and remain elevated at flotation, suggesting that significant operational gains are already realized prior to exit. For PBO firms, the operational changes implemented by the sponsor have recently been deployed and may not have been fully embedded by the IPO. SBO firms, having passed through two consecutive rounds of active intervention, arrive with an improvement process that is comparatively more mature, so any marginal return from further intervention would be lower not because SBOs face a lower ceiling but because the accessible gains may have already been captured.

Third, the selection of more profitable firms into the SBO channel (Jenkinson & Sousa, 2015) implies SBOs arrive at the IPO at higher absolute margin levels, potentially offsetting the process-maturity argument described above. The margin growth prediction, however, rests on process maturity at listing, not on starting levels. Even at similar entry margins, PBOs may arrive with an active and recent improvement process still in progress, whereas SBOs arrive after selection and two rounds of intervention that have been largely completed by listing. Against the general post-IPO deterioration baseline, PBO firms are therefore expected to decline less, stabilize sooner, or expand margins more than SBO firms. Which of these directions dominates cannot be determined in advance, but the overall direction indicates that PBOs perform better than SBOs post-IPO.

H2a: PBO IPO firms exhibit higher post-IPO EBITDA margin growth than SBO IPO firms in the first three years post-IPO.

[1] Defined as public to private to public transactions

On margin levels the direction reverses. More profitable firms are disproportionately channeled into the SBO market through selection (Jenkinson & Sousa, 2015), drawing SBOs from the upper tail of the exit-ready profitability distribution. An additional round of margin-focused optimization under the second sponsor might reinforce this. If both forces operate, the absolute margin level at which SBO firms enter the public market would be expected to be higher than for PBO firms. The prediction therefore opposes the growth prediction above, reflecting the tension between the "less residual upside" argument on growth and the "more selection and engineering" argument on levels.

H2b: SBO IPO firms exhibit higher post-IPO EBITDA margin levels in the first three years post-IPO than PBO IPO firms.

2.3.3 SBO vs. PBO - Leverage Levels

On entry leverage, Achleitner and Figge (2014) find that SBOs carry approximately 28-30% more leverage, measured as ND/EBITDA, than PBOs, a result that holds after controlling for debt market conditions. Bonini (2015) and De Maeseneire and Brinkhuis (2012) report consistent patterns, showing that second-round deals exhibit significantly higher entry leverage even after adjusting for industry volatility. In contrast, Degeorge et al. (2016) find that the SBO-PBO leverage gap is economically small and not statistically significant. The predominant pattern in the literature is nonetheless that SBOs carry elevated leverage levels relative to PBOs, associated with the higher target debt capacity (Achleitner et al., 2012; Jenkinson & Sousa, 2015) and favorable credit conditions at the time of the transaction (Wang, 2012).

Whether this entry-leverage gap persists post-flotation depends on the speed at which publicly traded firms adjust toward their target capital structures. Flannery and Rangan (2006) estimate that the typical publicly traded firm closes approximately one-third of the gap between its actual and target leverage ratio within a single year, implying that initial deviations from target leverage are largely corrected within a few years. Frank and Goyal (2009) establish that industry median leverage is the most important factor in explaining cross-sectional variation in capital structure, consistent with firms benchmarking their leverage against industry peers. Once SBO and PBO firms are publicly listed and exposed to similar capital market conditions, the underlying drivers of their target capital structures should converge. Because both groups are exposed to similar dynamics, the hypothesis is that they will arrive at comparable leverage levels by the end of the three-year post-IPO window.

H3a: There is no significant difference in post-IPO leverage levels between SBO and PBO IPO firms by year three, measured as ND/EBITDA.

H3b: There is no significant difference in post-IPO leverage levels between SBO and PBO IPO firms by year three, measured as gross D/Assets.

2.4 PE vs. non-PE Comparison (Secondary Study)

This section develops a complementary set of hypotheses by comparing both PE-backed groups against the broader population of non-PE-backed IPOs. The comparison is important because it establishes whether the patterns documented in the primary analysis reflect a PE phenomenon more broadly or a specific SBO-versus-PBO distinction.

2.4.1 PE vs. non-PE - Revenue Growth

For most firms, the IPO is a capital-raising event. Kim and Weisbach (2008) document that primary IPO proceeds (capital flowing directly into the firm through new share issuance) are positively and significantly associated with subsequent increases in R&D and capital expenditure. Celikyurt et al. (2010) expand on this, demonstrating that primary proceeds are linked to post-IPO investment activity while proceeds from secondary share sales, which flow to existing shareholders, carry no such relationship. For non-PE-backed issuers accessing public markets primarily to fund growth, the IPO is therefore expected to mark the beginning of an investment cycle that supports future revenue expansion.

PE-backed IPOs are structurally distinct from this pattern. Zingales (1995) establishes the theoretical foundation, documenting that an IPO can function as the optimal path for maximizing total exit proceeds. The PE setting reinforces this exit orientation through fund structure. Kaplan and Strömberg (2009) document that PE funds operate with fixed lifetimes that push sponsors to divest within a defined window, and Fürth and Rauch (2015) support this pattern with ownership data, finding that buyout fund ownership declines from a median of 74.5% pre-IPO to 45.9% at the IPO itself, with continued divestiture thereafter. Hence, for PE-backed companies, the IPO is more commonly described as the beginning of a structured exit process rather than a growth financing event. Hammer et al. (2025) confirm that PE-backed issuers are significantly more likely to disclose debt and shareholder repayment as their intended use of proceeds, and that they deleverage post-IPO accordingly, while being significantly less likely to direct proceeds toward investments. Less capital may therefore be available for revenue-generating post-IPO investment at PE-backed firms than at non-PE-backed firms. Moreover, PE-backed IPO firms are significantly older and more mature at flotation, with the lowest market-to-book ratios and growth investment levels of all IPO types (Kaufmann et al., 2024), consistent with firms that have already passed through the initial growth phase of their lifecycle. The prediction is directionally the same for both PE groups, but

the effect is expected to be stronger for SBOs. The cumulative imprint of two consecutive ownership rounds is hypothesized to further narrow the residual set of accessible growth opportunities at the point of listing.

H4a: SBO IPO firms exhibit lower post-IPO revenue growth than non-PE IPO firms in the first three years post-IPO.

H4b: PBO IPO firms exhibit lower post-IPO revenue growth than non-PE IPO firms in the first three years post-IPO.

2.4.2 PE vs. non-PE - EBITDA Margin Growth and Levels

The potential divergence between PE-backed and non-PE-backed firms in EBITDA margin might originate at the point of target selection and might be reinforced by pre-IPO operational engineering. Muscarella and Vetsuypens (1990) show that reverse LBO firms enter the IPO with operating margins approximately 42% higher than their own ten-year pre-buyout average, a pattern the authors attribute primarily to cost-cutting during the buyout phase.

On margin growth, the relevant question is which group is better insulated against the general post-IPO operational performance deterioration documented by Jain and Kini (1994). Two considerations suggest that PE-backed firms should decline less, and therefore exhibit higher margin growth, than non-PE-backed firms. First, non-PE-backed firms, entering public markets from a growth-oriented private phase without the operational engineering that PE-backed firms have received, may lack established operational discipline and face the full extent of post-IPO margin pressure. Second, non-PE-backed issuers enter at earlier stages of the corporate lifecycle (Kaufmann et al., 2024). Scaling pressures, growth-related cost increases, and the absence of cost discipline are expected to exert downward pressure on margins to which PE-backed firms, having undergone prior operational engineering, are less exposed. Levis (2011) provides direct empirical support for this prediction, showing that non-PE-backed issuers experience a pronounced decline in operating margins in the years following the IPO, whereas PE-backed firms exhibit only modest deterioration and maintain a margin advantage on both raw and industry-adjusted measures.

H5a: SBO IPO firms exhibit higher post-IPO EBITDA margin growth than non-PE-backed IPO firms in the first three years post-IPO.

H5b: PBO IPO firms exhibit higher post-IPO EBITDA margin growth than non-PE-backed IPO firms in the first three years post-IPO.

On margin levels, the predicted direction follows selection and pre-IPO engineering. Both mechanisms predict that SBO and PBO firms enter and remain at higher absolute margin

levels than non-PE-backed firms post-IPO, a pattern documented by Levis (2011) across three post-IPO years. The prediction is therefore that both PE groups carry higher margin levels than the non-PE benchmark at every post-IPO year, with SBOs expected to carry higher levels than PBOs do, as developed in Section 2.3.2.

H5c: SBO IPO firms exhibit higher post-IPO EBITDA margin levels than non-PE-backed IPO firms in the first three years post-IPO.

H5d: PBO IPO firms exhibit higher post-IPO EBITDA margin levels than non-PE-backed IPO firms in the first three years post-IPO.

2.4.3 PE vs. non-PE - Leverage Levels

PE-backed firms enter public markets with materially higher leverage than non-PE issuers (Hammer et al., 2025; Kaufmann et al., 2024; Levis, 2011). The IPO event itself is typically followed by a step reduction in leverage as primary proceeds are applied to debt repayment (Hammer et al., 2025; Levis, 2011). This pattern is consistent with the mean-reversion mechanisms hypothesized in the SBO vs. PBO comparison.

The same convergence mechanism hypothesized to drive SBO and PBO firms toward comparable leverage levels within three years is assumed to operate here as well. However, the entry-level gap is expected to be considerably larger in the secondary comparison, with Hammer et al. (2025) documenting an approximately 20 pp gap on D/Assets between PE-backed and non-PE-backed issuers at the IPO. With the entry-level gap potentially several times larger in the PE-versus-non-PE comparison, and assuming the one-third annual adjustment speed documented by Flannery and Rangan (2006), the secondary comparison is not expected to display full convergence within the three-year post-IPO window. The prediction is therefore that both PE groups carry significantly higher D/Assets and ND/EBITDA leverage levels than non-PE-backed firms at Yr+3, with the SBO premium larger than the PBO premium, consistent with their higher expected entry leverage.

H6a: SBO IPO firms carry significantly higher post-IPO leverage levels than non-PE-backed IPO firms at Yr+3, measured by ND/EBITDA.

H6b: PBO IPO firms carry significantly higher post-IPO leverage levels than non-PE-backed IPO firms at Yr+3, measured by ND/EBITDA.

H6c: SBO IPO firms carry significantly higher post-IPO leverage levels than non-PE-backed IPO firms at Yr+3, measured by D/Assets.

H6d: PBO IPO firms carry significantly higher post-IPO leverage levels than non-PE-backed IPO firms at Yr+3, measured by D/Assets.

Table 1 summarizes the sixteen hypotheses developed in this section.

Table 1: Hypothesis Summary

This table summarizes the sixteen hypotheses tested in this thesis, grouped by study. The within-PE study (H1-H3) compares SBO and PBO IPO firms; the secondary study (H4-H6) compares each PE group against the non-PE benchmark. The Predicted column reports the directional prediction; the Rationale column summarizes the underlying mechanism in one sentence.

H	Comparison	Outcome	Predicted	Rationale (brief)
Within-PE study: SBO vs PBO (primary study, H1-H3)				
H1	SBO vs PBO	Revenue growth	SBO < PBO	Successive PE rounds deplete accessible growth opportunities, leaving SBOs with less residual runway at listing
H2a	SBO vs PBO	EBITDA Margin growth	SBO < PBO	A more recently deployed and less exhausted improvement process leaves PBOs better positioned than SBOs against the post-IPO deterioration baseline
H2b	SBO vs PBO	EBITDA Margin level	SBO > PBO	Selection toward more profitable firms and an additional improvement round raise SBO margin levels
H3a	SBO vs PBO	ND/EBITDA (Yr+3)	SBO ≈ PBO	Similar post-listing convergence forces drive both groups toward an indistinguishable leverage level within three years
H3b	SBO vs PBO	D/Assets (Yr+3)	SBO ≈ PBO	Same convergence argument as H3a, applied to the balance-sheet measure
PE versus non-PE study: secondary study (H4-H6)				
H4a	SBO vs Non-PE	Revenue growth	SBO < Non-PE	PE-backed firms IPO as mature businesses directing proceeds to debt repayment rather than growth; effect is strongest for SBOs given two ownership rounds
H4b	PBO vs Non-PE	Revenue growth	PBO < Non-PE	Same argument as H4a, with a smaller expected magnitude reflecting one prior ownership round for PBOs
H5a	SBO vs Non-PE	Margin growth	SBO > Non-PE	More mature PE-backed operating structures are better insulated against post-IPO margin deterioration than operationally less developed non-PE issuers
H5b	PBO vs Non-PE	Margin growth	PBO > Non-PE	Same insulation argument as H5a, applied to PBOs
H5c	SBO vs Non-PE	Margin level	SBO > Non-PE	Selection toward high-margin firms and pre-IPO operational engineering elevate PE-backed margin levels above the non-PE benchmark
H5d	PBO vs Non-PE	Margin level	PBO > Non-PE	Same selection and engineering argument as H5c, applied to PBOs
H6a	SBO vs Non-PE	ND/EBITDA (Yr+3)	SBO > Non-PE	The entry leverage gap between PE-backed and non-PE firms is too large to close

H	Comparison	Outcome	Predicted	Rationale (brief)
H6b	PBO vs Non-PE	ND/EBITDA (Yr+3)	PBO > Non-PE	Same as H6a, applied to PBOs
H6c	SBO vs Non-PE	D/Assets (Yr+3)	SBO > Non-PE	Same entry-gap reasoning and partial-adjustment argument as H6a, applied to the balance-sheet measure
H6d	PBO vs Non-PE	D/Assets (Yr+3)	PBO > Non-PE	Same as H6c, applied to PBOs

3 Data Collection & Sample Construction

3.1 Data Sources

The empirical analysis draws on two primary data sources. Company lists, SIC codes, IPO dates, and PE deal history are sourced from SDC Platinum. Financial accounting data, comprising annual observations on revenue, EBITDA margin, net debt, gross debt, and total assets, are sourced from LSEG Workspace (formerly Refinitiv). The two sources are matched via the unique Issuer/Borrower Company ID assigned by SDC Platinum. The study covers US initial public offerings over the period 1990 to 2021. The start date captures IPO exits from the late-1980s leveraged-buyout wave, which peaked in the 1988 (Kaplan & Strömberg, 2009), and aligns with reliable SDC PE coverage. The end date ensures three post-IPO years of LSEG Workspace data for 2021 IPOs.

3.2 Sample Construction

The PE-backed sample is constructed in two steps. First, all transactions in SDC Platinum classified as leveraged buyouts with an exit via IPO on a US exchange are identified. Management buy-ins and management buyouts are included if SDC Platinum classifies the transaction as leveraged and the transaction was conducted with the involvement of a financial sponsor. Transactions are classified as PBOs if the firm has undergone a single leveraged buyout prior to listing, and as SBOs if the firm has been subject to two or more consecutive leveraged buyout transactions. This initial screen yields 1,052 firms.

Second, several structural exclusions are applied to the raw SDC extract. Special Purpose Acquisition Companies (SPACs), firms listed directly on the Over-the-Counter (OTC) market, and firms listed via American Depositary Shares or Receipts (ADS/ADR) are excluded, since these listing routes differ materially from a conventional IPO in terms of disclosure requirements, investor composition, and price formation, making them incomparable to standard exchange listings (Bernstein, 2015; Doidge et al., 2004; Gahng et al., 2023). Following

Bernstein (2015) and Gahng et al. (2023), firms operating in financial services (SIC codes 6000-6999) are excluded, as regulatory capital requirements and sector-specific accounting conventions make the leverage, profitability (EBITDA), and asset metrics of financial firms incomparable to those of non-financial firms. Firms with a prior public listing are excluded as well. Re-listed firms carry governance and operational characteristics shaped by their prior public market experience, which would distort the comparability against first-time listings (Datta et al., 2015). Next, firms that do not remain publicly listed for at least three consecutive years following their IPO are excluded. As the study analyzes post-IPO performance over a three-year event window, firms that return to private ownership or are delisted within this period cannot be observed over the full horizon of interest. This restriction could introduce a survivorship bias, to the extent that early-delisting firms are more likely to be financially distressed. This likely biases leverage downward and performance upward in the post-IPO sample. However, this restriction is necessary to ensure a consistent observation window. Because it is applied symmetrically across all groups, it is unlikely to bias the relative comparisons, although reported post-IPO performance may be modestly higher than in the underlying population. Lastly, the list is subjected to a manual verification procedure. This step removes cases in which the recorded buyout event is after the IPO, such as post-listing leveraged recapitalizations or going-private transactions misclassified as originating buyouts, and verifies the PBO versus SBO classification against available deal records. Together, these structural exclusions and the manual verification reduce the initial SDC draw to 499 PBOs and 90 SBOs.

The first data-driven filter sets firm-year observations with negative revenue to missing rather than dropping the firm entirely. This floor is applied on the grounds that negative revenue for a leveraged buyout target most likely reflects a data recording error rather than reflecting underlying economic activity. In practice, the floor removes no PE firms from the sample entirely but eliminates individual firm-year observations that would otherwise produce infinite or undefined growth rates. Firms with fewer than two non-missing post-IPO observations across Yr+1, Yr+2, and Yr+3 (on the variables required for at least one regression-metric) are excluded. As the study analyzes post-IPO performance over a three-year event window, firms with only a single observed post-IPO year provide too little information for the within-firm pooled regression to be meaningful. Firms with missing total assets in the IPO year are excluded as well, as the value is used as a control variable and would not be constructible. Together, these filters yield a final PE sample of 471 firms: 400 PBOs and 71 SBOs.

The non-PE sample is constructed from the full SDC Platinum universe of US IPOs between 1990 and 2021, again using issue date as the reference date. This initial screen yields 9,992 firms. All PE-backed firms are subsequently removed using SDC Platinum's unique company identifiers to ensure no overlap between the PE sample and the non-PE benchmark. The same exclusions applied to the PE-backed sample (SPACs, OTC listings, ADS, ADR, financial services firms, and duplicate listings) are applied here as well. Lastly, the same data availability filters are applied. The final non-PE benchmark comprises 4,942 firms.

A diagnostic test of the missing-data mechanism, following the framework of Rubin (1976), is conducted on the non-PE sample after applying the revenue floor. The test compares firms with any missing post-IPO observation to firms with complete coverage on three pre-determined characteristics - total assets at IPO, IPO year, and Fama-French 12 industry composition - to assess whether missingness is independent of observable firm characteristics. Total assets and IPO year are assessed using Welch's t-test (Welch, 1947), while the Fama-French 12 industry composition is assessed using the chi-squared (χ^2) test (Pearson, 1900). An additional survivorship bias check tests whether firms with missing Yr+3 data already exhibit weaker revenue growth in Yr+1.

The results indicate that missingness is non-random on all three characteristics, consistently across all four raw input variables. First, firms with missing data are significantly smaller than firms with complete coverage (revenue: \$821M vs \$1,467M; EBITDA: \$658M vs \$1,498M; gross debt: \$509M vs \$1,507M; net debt: \$597M vs \$1,443M; last three $p < 0.001$). Second, firms with missing data list in earlier years on average, with the mean IPO-year shift between missing and complete groups ranging from 1.0 years on EBITDA (2001.2 vs 2002.2, $p < 0.001$) to 3.2 years on gross debt (1999.8 vs 2003.0, $p < 0.001$). Third, industry composition differs significantly between missing and complete firms (χ^2 test $p < 0.001$). Because the regression specifications control for size, IPO year, and industry, the MAR violations bias the unconditional descriptive comparisons but are absorbed by the controlled regression coefficients (further explanation in Section 3.3). The survivorship bias check is also insignificant. Yr+1 revenue growth for firms missing Yr+3 data is statistically indistinguishable from that of firms with complete coverage. Selection bias is therefore unlikely to be a material concern for the controlled results, with the caveat that the design cannot rule out selection on unobservable characteristics. Full MAR test results across all metrics, including the survivorship bias check on Yr+3 missingness, are reported in Appendix A.

3.3 Variable Construction

All accounting variables are organized in an event-time panel centered on the IPO year (Yr 0), covering years Yr-2 through Yr+3. The pre-IPO years (Yr−2 and Yr−1) are used for the parallel-trends test, while Yr+1, Yr+2, and Yr+3 constitute the post-IPO analysis window. Each firm therefore contributes up to three post-IPO observations to the pooled regression (one for each of Yr+1, Yr+2, Yr+3). Variable definitions and construction rules are summarized in Table 2.

Table 2: Variable Construction

This table reports the construction of each variable used in the regression analysis. The upper panel lists the five outcome variables, grouped by performance dimension (revenue, EBITDA margin, leverage). The lower panel lists the three control variables. All variables are computed at the firm-year level values winsorized at the 1st and 99th percentiles and are observed across the event-time window from Yr−2 to Yr+3, where Yr 0 denotes the IPO year.

Variable	Construction
Outcome Variables	
Revenue	
Revenue Growth	Year-on-year percentage change in revenue within each firm
EBITDA Margin	
EBITDA Margin Growth	Year-on-year change in the EBITDA-to-sales ratio, expressed in percentage points
EBITDA Margin Level	EBITDA divided by sales in each event-time year, expressed as a percentage
Leverage	
D/Assets	Gross debt divided by total assets
ND/EBITDA	Net debt divided by absolute EBITDA
Control Variables	
Log Assets	Natural logarithm of total assets at the IPO year (Yr 0)
FF12/ FF30 Industries	Fama-French industry dummy constructed from four-digit SIC codes using the boundary definitions from Ken French's data library[2]
IPO Year	Calendar year of the firm's flotation, used as a fixed effect in pooled regressions and as a continuous control in year-by-year cross-sections

Note. EBITDA values are constructed by multiplying EBITDA margin with revenue in a given year, as only EBITDA margins are sourced from LSEG

D/Assets uses gross debt rather than net debt because IPO proceeds mechanically increase cash and therefore reduce net debt at the moment of listing without affecting the contractual debt obligation. Gross debt is therefore a more stable measure of the leverage burden carried into and through the post-IPO period. Firms with near-zero EBITDA can produce arbitrarily large ND/EBITDA values regardless of its actual debt level, rendering the ratio uninformative as a measure of leverage levels in those firm-years. Therefore, all analysis variables are winsorized at the 1st and 99th percentiles, with winsorization applied after all derived variables are computed and across the full combined sample. Pooling PE and non-PE firms before setting

[2] Kenneth R. French - Detail for 12 Industry Portfolios (Fama & French, 2026a); Kenneth R. French - Detail for 30 Industry Portfolios (Fama & French, 2026b) accessed 11.04.2026

thresholds means that the cut-off values reflect the full distribution of each variable rather than group-specific distributions, which preserves the between-group differences that the regressions are designed to estimate. The alternative of per-group winsorization would impose group-specific truncation thresholds and mechanically compress those differences.

Single internal gaps in the time series, defined as a missing value in year *t* where both the preceding year $t-1$ and the following year $t+1$ are available, are filled by linear interpolation, computed as the arithmetic mean of its two neighbors. Interpolation is applied symmetrically to both samples and across all time-series metrics. Total assets at the IPO year, which serves as a fixed cross-sectional control, is excluded from interpolation. All firms for which any value has been interpolated are flagged and excluded in Robustness Check A. The interpolation flagging is metric-specific: a firm is flagged if any of its values for the metric currently under analysis have been interpolated.

Three control variables are applied. Log assets at the IPO year captures cross-sectional size, following Wang (2012). Total assets at Yr 0 are used because the IPO-year balance sheet reflects the firm's size as it enters the public market, after proceeds are received and initial debt is repaid. While Yr 0 assets are shaped by the IPO event itself, they are predetermined with respect to all post-IPO performance observations and do not create a simultaneity problem with the outcome variables. Fama-French industry fixed effects absorb time-invariant industry characteristics that may correlate with both ownership type and post-IPO performance (Bernstein, 2015). The primary and standard secondary regressions use FF12. The M3 iteration uses the more granular FF30 to remain consistent with the propensity model (see Section 4.1). IPO-year fixed effects absorb common macroeconomic or capital-market conditions that affect all firms listing in a given year, including interest rate environments, credit conditions, and economic cycles (Bernstein, 2015).

4 Methodology

4.1 Research Design and Regression Specification

The analysis follows an event-study design centered on the IPO date. The United States is chosen as the geographic focus as it is the largest and most developed leveraged buyout market (Kaplan & Strömberg, 2009). For each firm, accounting outcomes are observed over a period of six fiscal years: two years before the IPO (Yr-2, Yr-1), the IPO year itself (Yr 0), and three years after (Yr+1, Yr+2, Yr+3). The three-year post-IPO window is chosen as it allows post-listing performance to materialize fully, similar to the approach of Holthausen and Larcker

(1996) and Jain and Kini (1994). The IPO year itself (Yr 0) is excluded from regression analysis, as it captures a partial-year transition that conflates pre- and post-IPO behavior. Regressions are estimated on the post-IPO panel only. The pre-IPO observations are reserved for the parallel-trends test described under Identification Checks below. The empirical strategy comprises two complementary regressions. The primary regression compares SBO and PBO firms within the PE universe to test Hypotheses H1-H3 (Section 2.3). The secondary regression compares each PE group against the non-PE benchmark to test Hypotheses H4-H6 (Section 2.4) and is estimated under two iterations: (i) the full benchmark (M2) and (ii) a propensity-filtered comparable-firm subset (M3).

4.1.1 Primary Regression

A single OLS specification is estimated for each outcome variable, run in two versions corresponding to the primary and secondary studies. The specification includes log assets at the IPO year, FF12 industry fixed effects, and IPO-year fixed effects as controls. The sample is restricted to PE-backed firms (SBO and PBO), with PBO as the reference category. The coefficient on is_sbo thus estimates the SBO-versus-PBO differential conditional on controls.

Primary regression:

$$y_{it} = \alpha + \beta \cdot is\_sbo_i + \phi_1 \cdot log(Assets_{i,0}) + \phi_{2j} \cdot FF12_{ji} + \phi_{3t} \cdot YrFE_t + \varepsilon_{it}$$

where y_{it} is the outcome for firm i in post-IPO year t (revenue growth, EBITDA margin growth, EBITDA margin level, ND/EBITDA, or D/Assets), is_sbo_i is a binary indicator equal to one if the firm has undergone a secondary buyout, $log(Assets_{i,0})$ is the natural logarithm of total assets at the IPO year, $FF12_{ji}$ denotes the Fama-French 12 industry fixed effect for the industry j to which firm i belongs, $YrFE_t$ denotes IPO-year fixed effects, and ε_{it} is the error term. A positive coefficient on the SBO indicator indicates a higher value for SBOs than PBOs on the outcome variable, while a negative coefficient indicates a lower value for SBOs. The coefficient measures the average difference across the three post-IPO years pooled.

4.1.2 Secondary Regression (M2 and M3)

The secondary regression tests whether each PE type performs differently from the non-PE benchmark. Non-PE is the reference category, so the coefficients on is_sbo and is_pbo estimate the SBO-versus-non-PE and PBO-versus-non-PE differentials, respectively.

Secondary regression:

$$y_{it} = \alpha + \beta_1 \cdot is\_sbo_i + \beta_2 \cdot is\_pbo_i + \phi_1 \cdot log(Assets_{i,0}) + \phi_{2j} \cdot FF12_{ji} + \phi_{3t} \cdot YrFE_t + \varepsilon_{it}$$

where is_pbo_i is a binary indicator equal to one for PBO firms, and all other terms are as defined above. β_1 and β_2 are the parameters of interest for H4-H6. Both indicators are included jointly in a single model rather than estimated as two separate regressions (one for SBO-versus-non-PE and one for PBO-versus-non-PE). In the two-regression alternative, each coefficient would be estimated against a different residual variance from a different sample, so the two coefficients would not be directly comparable. Any difference in magnitude or significance could reflect differences in noise rather than differences in the underlying effect.

The secondary regression is estimated under two iterations. The first iteration (M2) uses the full non-PE benchmark and constitutes the headline secondary result. The second iteration (M3) uses a propensity-filtered comparable-firm subset of the non-PE benchmark, described in the next section. Both iterations use the same regression equation and the same sample of PE firms. The two iterations differ in two respects. The comparison group changes from the full non-PE benchmark to the propensity-trimmed comparable subset, and the FF12 industry control is replaced with the more granular FF30 classification used in the propensity model.

4.1.3 Comparable-Firm Subset (M3, Secondary)

The comparable-firm subset (M3) is the second iteration of the secondary regression, motivated by structural differences between the full non-PE benchmark and the PE samples on observable characteristics. Median assets are $80 million for non-PE firms versus $368 million for PBOs and $966 million for SBOs. The non-PE benchmark contains many pre-profit firms with deeply negative EBITDA margins, and the listing-year distributions differ (full distributions in Appendix B). M3 is thus a test of whether the secondary findings are robust to non-PE benchmark heterogeneity.

The non-PE benchmark is filtered using common-support trimming on the propensity score following Austin (2011) and Crump et al. (2009). The propensity model is a cross-sectional logistic regression estimated on the firm-level union sample, in which the dependent variable is a binary indicator equal to one if the firm is PE-backed (SBO or PBO pooled) and zero if it is non-PE-backed. The model estimates the probability of being PE-backed as a function of observable firm characteristics at IPO:

$$\Pr(PE_i = 1 \mid X_i) = \frac{\exp(X_{i\beta}')}{1 + \exp(X_{i\beta}')}$$

where X_i contains the z-scored values of log(Assets) at IPO, log(Revenue) at IPO, IPO year, and a set of Fama-French 30 industry dummies, with intercept. The coefficient vector β is estimated by maximum likelihood. The propensity model uses a pooled-PE indicator rather than separate SBO and PBO indicators because the model's purpose is to identify the region of

observable space in which both PE and non-PE firms appear. Splitting the propensity model by sponsor type would estimate two narrower overlap regions and would discard non-PE firms that resemble one PE type but not the other. Pooling preserves the broader common-support region that any PE-backed firm could plausibly inhabit. The hypothesis tests retain separate SBO and PBO coefficients in the secondary regression itself, where the comparison of interest is estimated.

The trimming rule is common-support overlap (Crump et al., 2009): retain non-PE firms whose propensity score falls within the range observed for actual PE firms. The rule drops only the non-PE firms whose observable characteristics place them outside any region where a PE-backed firm in the sample could plausibly appear. A tighter propensity-trimming rule is reported as a robustness test (Section 4.4). Sample retention rates and post-trimming size and industry distributions are reported in Section 5.

4.2 Estimation Details

Each set of regressions is estimated twice: first on the full pooled post-IPO panel (Yr+1, +2, and +3 combined), which uses up to three observations per firm and constitutes the main specification, and second on each post-IPO year separately. The pooled regression spans approximately 1,300 firm-year observations across the within-PE comparison and between 10,400 and 12,900 non-PE firm-year observations for the secondary, depending on the metric. The year-by-year regressions use approximately 300-390 PBOs and 60-71 SBO firms per year for the within-PE primary, and approximately 3,300 to 4,500 non-PE firms per year for the secondary. In the year-by-year regressions, the IPO year enters as a continuous variable rather than a fixed effect. With substantially fewer observations per cross-section, a continuous control preserves degrees of freedom while still absorbing any linear time trend in the outcome. For the leverage level tests, the Yr+3 cross-section is the primary hypothesis test.

Standard errors are clustered at the firm level throughout. Each firm contributes up to three post-IPO observations to the pooled panel, creating within-firm correlation in the residuals that would lead conventional OLS standard errors to be downward-biased. Firm-level clustering corrects for this correlation without imposing any structure on the within-firm covariance matrix (Petersen, 2009). Degrees of freedom for t-statistics and p-values are set to G-1, where G is the number of cluster groups (firms), consistent with the cluster-robust inference framework outlined in Cameron and Miller (2015). Statistical significance is reported at the 1%, 5%, and 10% levels.

4.3 Identification Checks

4.3.1 Parallel Trends

The parallel-trends test, following Roth (2022), re-estimates the regression specifications on the pre-IPO window (Yr−2, Yr−1) only, with the same outcome variable measured before the IPO event. The test is run for both the primary regression (SBO vs PBO) and the secondary regression (SBO vs Non-PE and PBO vs Non-PE jointly, on the full benchmark). The coefficient of interest is the same SBO (or SBO and PBO) indicator as in the post-IPO regression, but estimated on pre-IPO observations. Parallel-trends tests are run on the change variable rather than the level by design, since the identifying assumption requires similar pre-IPO trajectories across groups, not similar pre-IPO levels. An insignificant coefficient indicates that the groups cannot be statistically distinguished on the outcome before the IPO, which is supportive evidence that any post-IPO difference is a post-IPO phenomenon rather than a pre-existing one. A significant pre-IPO coefficient indicates that the groups already differed before the IPO and weakens (but does not invalidate) the post-IPO interpretation. The test is supportive rather than definitive, as conventional pre-trends tests are often underpowered against plausible violations of parallel trends, particularly when the number of pre-treatment periods is small (Roth 2022), and a null result confirms pre-IPO equivalence only on the specific outcome variables tested.

4.3.2 Minimum Detectable Effect (Leverage Yr+3)

For the leverage Yr+3 cross-section specifically, the minimum detectable effect (MDE) is reported alongside the regression coefficients. The MDE is the smallest true effect size the design could reliably detect at 80% power and 5% significance, with $MDE = 2.80 \times \sqrt{(\sigma^2_1/n_1 + \sigma^2_2/n_2)}$, following Bloom (1995) where σ_g and n_g are the within-group standard deviation and sample size of group g. The MDE is reported because H3a and H3b predict a null result, so a careful interpretation of an insignificant coefficient depends on whether the design had power to detect a meaningful gap had one existed. If the observed gap is much smaller than the MDE, the null can be interpreted as evidence of absence (the design had power to detect a meaningful gap and did not) rather than as absence of evidence due to insufficient sample size.

4.4 Robustness Checks

Five robustness checks are conducted, each varying one element of the baseline specification and re-estimating it for both the primary and secondary regression. The checks address five distinct concerns: data integrity (A), the ASC 842 lease-accounting break (B), heavy left tails in the non-PE EBITDA distribution (C), sensitivity to the M3 propensity-trimming threshold

(D), and the choice between propensity-trimming and pair-matched identification (E). All five robustness checks run on the primary regression. Checks A, B, and C also run on both the Secondary M2 and M3 iterations. Check D substitutes a tighter Crump propensity trim for the standard M3 trim and so does not have a Secondary M2 iteration, while Check E (PSM) provides its own matched-pair design as an alternative to the M3 propensity trim.

4.4.1 Robustness Check A - No Interpolation

Robustness Check A drops all firms whose time series had at least one interior gap filled by linear interpolation in the baseline construction. Firms with edge gaps (missing at Yr-2 or Yr+3) where no interpolation was applied are retained. A firm with any interior gap filled is therefore excluded entirely from Check A (not just the interpolated firm-year), so the check tests whether the single-gap interpolation procedure systematically affects the results.

4.4.2 Robustness Check B - Pre-ASC 842 Sample

Robustness Check B restricts the sample to IPO year ≤ 2015, ensuring all post-IPO years fall before the effective date of ASC 842. Lease capitalization under this standard inflates total assets and total debt for firms whose post-IPO window spans 2019 (FASB, 2016). This check is particularly relevant for leverage and partly relevant for EBITDA, and is conducted on the revenue outcomes for consistency. Winsorization is applied to the full sample before this filter, ensuring the restricted subsample uses identical winsorized values.

4.4.3 Robustness Check C - EBITDA-Positive Firm-Years

Robustness Check C restricts the sample to firm-years with positive EBITDA margin across all groups, testing whether the headline secondary results are driven by the inclusion of pre-profit and loss-making firms concentrated in the non-PE benchmark. It has a post-IPO mean of −288%, indicating a heavy left tail that distorts the unconditional comparison.

4.4.4 Robustness Check D - Tighter Propensity Trimming

Robustness Check D applies Crump et al.'s (2009) optimal-trimming rule with $\alpha = 0.10$ to the M3 propensity model, retaining both PE and non-PE observations with propensity scores in [0.10, 0.90]. The parameter α defines the boundary of the propensity-score region that is retained: observations with propensity scores below α or above $1 - \alpha$ are discarded as outliers in the propensity distribution. The propensity model is the same logistic regression described in Section 4.1. Whereas the standard M3 iteration retains non-PE firms in the broad propensity range observed for any actual PE firm, this rule trims observations symmetrically from both groups in the propensity-tail regions where treated and control density is most imbalanced, restricting the comparison to the propensity-overlap region where group comparisons rest on

the strongest observable common support. Check D uses the same regression specification as the standard M3 regression, differing only in the trimming rule.

4.4.5 Robustness Check E - Propensity-Score-Matched Specifications

Robustness Check E restricts each comparison to a propensity-score-matched (PSM) subsample (Rosenbaum & Rubin, 1983), following the framework described in Austin (2011). Whereas M3 produces a population-level comparable subset, PSM constructs one-to-one matched samples in which each treated firm is paired with the donor whose observable characteristics most closely resemble its own. The check thus verifies that the M3 findings are not specific to population-level filtering and survive when comparability is enforced at the pair level. For each matching exercise, a propensity score is estimated by logistic regression of the treatment indicator on z-scored log assets at IPO, z-scored IPO year, and FF30 industry dummies, with intercept. Log revenue is omitted, in contrast to the M3 propensity model. At the firm level, log revenue and log assets are highly correlated in the pre-trim sample (Pearson r = 0.76 in the union sample; r = 0.87 in the SBO subsample), so including both adds limited identifying variation. Furthermore, keeping the propensity model simple is especially important when the treated sample is small (71 SBOs). Over-specifying the model risks pushing propensity scores toward the tails and degrading match rates without a corresponding gain in balance (Brookhart et al., 2006). The PSM model is fit separately for each matching exercise (with the treatment indicator redefined accordingly) and is therefore distinct from the M3 propensity model, which pools SBO and PBO into a single PE indicator. Each treated firm is then paired with its single nearest-neighbor donor by absolute propensity-score distance, with a caliper of 0.1 standard deviations of the propensity score. Matching is greedy and without replacement (Austin, 2011). Once a donor is matched, it is removed from the available pool. The secondary regression is re-estimated on each matched sample with FF30 industry fixed effects.

5 Descriptive Statistics

The empirical analysis covers 5,413 US IPOs from 1990 to 2021 across three primary groups: 400 PBOs, 71 SBOs, and 4,942 non-PE-backed firms. Across the six event-time years tracked per firm (Yr−2 through Yr+3), this yields approximately 11,600 to 14,200 firm-year observations per regression, depending on the metric. The propensity-trimmed comparable-firm subset (M3) retains 3,833 non-PE firms, removing 801 firms because of at least one missing propensity-model covariate and a further 308 non-PE firms in the lowest propensity-score tail. PE firms are kept whole in the M3 iteration by design, with 51 PE firms (50 PBO and 1 SBO) excluded from the propensity model itself because they are missing one or more of the

propensity-model covariates (log assets, log revenue, IPO year, or FF30 industry classification). Full pre-IPO and post-IPO descriptive statistics, sub-period IPO distributions, FF12 and FF30 industry composition for all groups are reported in Appendix B.

The temporal distribution differs across groups. PBOs list evenly across the sample period, with 39.2% before 2000 and a median IPO year of 2004. SBOs are concentrated in the post-2005 period. Only 7% list before 2000 and the median IPO year is 2012, eight years later than for PBOs. This reflects the broader development of the SBO market, in which the accumulation of PE-owned assets has increased the supply of viable SBO targets since the mid-2000s (Kaplan & Strömberg, 2009; Wang, 2012). The non-PE benchmark is weighted toward earlier years, with over half listing before 2000 and a median IPO year of 1998. The M3 trimmed benchmark exhibits a similar temporal profile but is slightly more weighted toward the post-2000 period.

Beyond the temporal distribution, the four groups differ markedly on size and profitability. Table 3 reports key firm characteristics at the IPO year. Within PEs, SBOs are substantially larger at listing: median revenue of $762 million versus $357 million for PBOs, and median total assets of $966 million versus $368 million. The mean total assets reveal a less dramatic but still substantial gap of $2,193 million versus $1,234 million. Median revenue for the full non-PE benchmark is $54 million, while median total assets are $80 million. Propensity trimming narrows this gap modestly, raising the M3 non-PE benchmark to median revenue of $61 million and median assets of $94 million. A substantial size gap nevertheless persists between the M3 non-PE benchmark and either PE group: PBO median revenue is 5.9 times the M3 non-PE median and SBO median revenue is 12.5 times larger.

Table 3: Firm Characteristics at the IPO Year

This table reports firm-level characteristics for each group at the IPO year (Yr 0). Median and mean values are reported for revenue and total assets, separately for PBOs, SBOs, the full non-PE benchmark, and the propensity-trimmed M3 non-PE subset. The number of firms per metric is reported in () behind the values.

	PBO (n)	SBO (n)	Non-PE (Full) (n)	Non-PE (M3) (n)
Revenue at Yr 0 ($M)				
Median	$357 (350)	$762 (70)	$54 (4,141)	$61 (3,833)
Mean	$1,118 (350)	$1,435 (70)	$453 (4,141)	$428 (3,833)
Total Assets at Yr 0 ($M)				
Median	$368 (400)	$966 (71)	$80 (4,942)	$94 (3,833)
Mean	$1,234 (400)	$2,193 (71)	$554 (4,942)	$610 (3,833)

Note. Revenue and total assets in USD millions

On industry composition, the three largest industries for PBOs are Business Equipment (21.0%), Shops and Retail (19.5%), and Other (17.5%), together accounting for 58.0% of the

group. For SBOs, the three largest are Shops and Retail (26.8%), Manufacturing (19.7%), and Business Equipment (11.3%), together accounting for 57.8%. The non-PE benchmark is dominated by Business Equipment (32.0%) and Healthcare (18.8%). This heavy concentration in Business Equipment and Healthcare against the much lower 11.3% and 7.0% shares for SBOs reflects the different nature of the two universes. The M3 benchmark only modestly narrows the Healthcare gap (14.1% for M3) and leaves the Business Equipment share essentially unchanged (34.9% for M3), indicating that propensity trimming primarily removes the smallest non-comparable firms within tech-heavy industries rather than altering the broad industry composition of the benchmark.

Table 4 reports the post-IPO median trajectories for all four groups. Revenue growth decelerates sharply following the IPO for all groups. The SBO discount relative to PBOs is largest in Yr+1 (median 13.8% versus 15.8%, a gap of 2.0 pp) and Yr+3 (median 1.5% versus 7.2%, a gap of 5.7 pp), with intermediate values in Yr+2. The full non-PE benchmark grows substantially faster than either PE group across the post-IPO window (median 31.5% in Yr+1 falling to 9.2% in Yr+3), with the M3 benchmark medians within 1.4 pp of the full benchmark at every post-IPO event-year. EBITDA margins are stable and broadly similar between the two PE groups in every post-IPO year, with no consistent directional gap. PBOs record median margins of 14.9%, 15.0%, and 14.7% across Yr+1 to Yr+3, and SBOs 15.4%, 12.7%, and 12.7%. Both groups remain close to or modestly below their pre-IPO median margins (PBO 13.4%, SBO 14.1% at Yr−1). The non-PE benchmark, by contrast, peaks at Yr 0 (7.7%) and declines steadily thereafter to 5.0% by Yr+3.

Both PE groups enter the public market with substantially elevated leverage and deleverage substantially at Yr 0. On D/Assets, PBOs fall from 0.566 to 0.390, and SBOs from 0.576 to 0.418 from Yr-1 to Yr 0. The SBO level remains slightly higher than the PBO level throughout the post-IPO window, though both converge toward similar levels over time (PBO 0.353 versus SBO 0.397 at Yr+3). Both non-PE benchmarks show the opposite trajectory, gradually increasing their gross debt ratios each year (Non-PE Full median 0.051 at Yr 0 rising to 0.112 at Yr+3). The ND/EBITDA data confirm the same directional pattern. SBOs carry higher absolute leverage than PBOs at listing (median 5.24× versus 3.87× pre-IPO) and converge partially by Yr+3 (median 2.76× versus 1.94×), with both PE groups carrying far more leverage than either non-PE benchmark throughout.

Table 4: Performance Trajectories Around the IPO

This table reports group medians for the four input metrics across the event-time window from Yr−1 through Yr+3 for the four groups used in regression analysis: PBOs, SBOs, the full non-PE benchmark (Non-PE Full), and the propensity-trimmed M3 non-PE subset (Non-PE M3). The N column reports the total number of per-event-year sample counts; counts can vary slightly with data availability.

	Median per year					Mean (Yr-1 to Yr+3)	Observations (N)
	Yr-1	Yr 0	Yr+1	Yr+2	Yr+3		
Revenue Growth YoY (%)							
PBO	12.9	17.4	15.8	11.1	7.2	31.0	1,895
SBO	12.2	15.6	13.8	9.4	1.5	22.1	354
Non-PE (Full)	31.4	35.2	31.5	20.1	9.2	81.8	22,119
Non-PE (M3)	36.3	41.0	30.1	19.1	9.0	71.8	18,460
EBITDA Margin (%)							
PBO	13.4	14.3	14.9	15.0	14.7	6.7	1,941
SBO	14.1	13.1	15.4	12.7	12.7	15.9	345
Non-PE (Full)	6.4	7.7	6.6	5.3	5.0	-295.5	22,632
Non-PE (M3)	7.1	8.5	7.9	6.9	6.4	-117.6	18,531
D/Assets (Gross Debt / Total Assets)							
PBO	0.566	0.390	0.356	0.346	0.353	0.428	1,890
SBO	0.576	0.418	0.406	0.411	0.397	0.472	343
Non-PE (Full)	0.224	0.051	0.059	0.083	0.112	0.222	23,293
Non-PE (M3)	0.234	0.063	0.068	0.095	0.133	0.223	18,088
ND/EBITDA Level (×)							
PBO	3.87	2.44	2.01	1.95	1.94	2.60	1,804
SBO	5.24	3.45	2.78	3.00	2.76	3.45	342
Non-PE (Full)	0.78	0.94	0.81	0.78	0.87	1.00	21,091
Non-PE (M3)	0.84	0.80	0.78	0.79	0.90	0.96	18,059

Note. All outcomes are winsorized at the 1st and 99th percentiles. Yr-2 is missing as it is needed to compute growth trajectories for Yr-1.

6 Results

This section reports the regression results for revenue growth, EBITDA margin, and leverage. The within-PE comparison (i.e., SBO vs. PBO, primary regression, H1-H3) is reported first, followed by the PE-versus-non-PE comparison (i.e., PE vs. non-PE, secondary regression, H4-H6). For each comparison, uncontrolled pooled regression, controlled pooled regression, and the three year-by-year cross-section results across all five performance metrics are reported. Significance levels are denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Full pooled and year-by-year regression output, parallel-trends tests, and complete robustness outputs across all five robustness checks are reported in Appendices C and D.

6.1 Primary Regression Results

The primary regression compares SBO and PBO IPOs within the PE universe to test H1-H3. PBO is the reference category. The coefficient on is_sbo therefore measures the SBO-versus-

PBO differential conditional on size, industry, and listing year. Table 5 reports the regression coefficients across all five performance metrics.

Table 5: Primary Regression Coefficients (SBO vs PBO Within-PE)

This table reports the within-PE primary regression coefficients (SBO indicator) on each of the five primary outcome variables, estimated under two pooled regressions and three year-by-year cross-sections. The pooled uncontrolled column reports the unconditional pooled regression; the pooled controlled column adds log_assets, FF12 industry FE, and IPO-year FE. The year-by-year columns report controlled coefficients estimated as separate cross-sections. N (pooled) reports the firm-year observations underlying the pooled regressions. Column H lists the respective hypothesis number.

H	Comparison	Pooled uncontrolled	Pooled controlled	Yr+1 β	Yr+2 β	Yr+3 β	N (pooled)
H1	Revenue Growth (pp)	−14.39***	−6.22*	−7.44	−12.99*	−0.51	1,299
H2a	EBITDA Margin Growth (pp)	−2.83	−9.28	−12.34	−5.34	+1.32	1,335
H2b	EBITDA Margin Level (pp)	+2.11	+3.43	+4.94	−0.52	+0.64	1,339
H3a	ND/EBITDA Level (×)	+0.77	+0.27	+1.01*	−0.50	+0.03	1,149
H3b	D/Assets Level	+0.05	+0.02	+0.01	+0.04	+0.02	1,224

*Note. All outcomes are winsorized at the 1st and 99th percentiles. Significance: *** p<0.01, ** p<0.05, * p<0.10.*

H1 predicts lower post-IPO revenue growth for SBO than for PBO IPOs and is partially supported. The unconditional gap is −14.4 pp***. After controls, the coefficient decreases to −6.2 pp*, meaning that, conditional on size, industry, and listing year, SBO firms grow approximately 6.2 pp slower per year than PBO firms across the post-IPO window. The year-by-year decomposition concentrates the discount in Yr+2 (−13.0 pp*) and shows a near-zero coefficient by Yr+3, indicating that the within-PE growth gap fades over the post-IPO window. Robustness Check E (PSM) yields a marginally significant discount (β = −5.1 pp*), the closest any robustness check comes to confirming H1 at conventional significance. All other robustness checks preserve the negative direction but attenuate to insignificance.

H2a predicts higher post-IPO margin growth for PBOs than SBOs and is not supported. The pooled M2 coefficient is −9.3 pp (n.s.), and no year-by-year coefficient is individually significant. All five robustness checks confirm the null.

H2b predicts higher post-IPO margin levels for SBOs than PBOs and is also not supported. The pooled M2 coefficient is +3.4 pp (n.s.), directionally consistent with the prediction but not statistically significant. Robustness Check C (EBITDA-positive firm-years) slightly reverses the sign to −2.1 pp (n.s.), and all other robustness checks confirm the null.

H3a and H3b predict no significant SBO-PBO difference in leverage levels at Yr+3 and are both supported. The Yr+3 ND/EBITDA coefficient is +0.03 (n.s.) and the Yr+3 D/Assets coefficient is +0.022 (n.s.). Power calculations (MDE, Appendix C) show that the D/Assets Yr+3 (H3b) design could detect any gap roughly 2.5× larger than the observed +0.05 (MDE = +0.13), confirming that the null is not driven by insufficient sample size. For ND/EBITDA (H3a) the design is weaker. The MDE of 2.5× is 4.3 times the observed 0.57× gap, so the null

is consistent with either no true gap or a meaningful gap that the SBO sub-sample is too small to detect. All robustness checks on both ND/EBITDA and D/Assets confirm the null, though the ND/EBITDA result should be read with caution given the limited statistical power on this outcome.

The pre-IPO parallel-trends tests for the within-PE comparison are insignificant on every metric, so observed post-IPO differences are unlikely to reflect pre-existing trajectories that were already diverging before flotation.

6.2 Secondary Regression Results

The secondary regression compares each PE group against the non-PE benchmark (H4-H6). Table 6 reports the regression coefficients across all five performance metrics.

Table 6: PE versus Non-PE Regression Coefficients across all Performance Metrics

This table reports secondary regression coefficients (Non-PE reference) across the five performance metrics. Each metric reports four rows: SBO and PBO against the full non-PE benchmark (M2) and against the propensity-trimmed comparable-firm subset (M3). The pooled uncontrolled column reports the unconditional pooled regression; the pooled controlled column adds log_assets, FF12 industry FE, and IPO-year FE. The year-by-year columns report controlled coefficients estimated as separate cross-sections. The M3 iteration replaces FF12 with FF30 industry FE and uses the propensity-trimmed comparable group. N (pooled) reports firm-year observations underlying the pooled regression.

H	Comparison	Pooled uncontrolled	Pooled controlled	Yr+1 β	Yr+2 β	Yr+3 β	N (pooled)
Revenue Growth (pp)							
H4a	SBO vs Non-PE (Full)	−43.01***	−17.33***	−22.04***	−12.18**	−13.96***	13,821
H4a	SBO vs Non-PE (M3)	−28.33***	−19.00***	−22.23***	−17.46***	−17.72***	12,039
H4b	PBO vs Non-PE (Full)	−28.62***	−7.73**	−21.09***	−0.83	−5.22	13,821
H4b	PBO vs Non-PE (M3)	−16.63***	−7.55***	−10.14**	−7.85**	−6.21	12,039
EBITDA Margin Growth (pp)							
H5a	SBO vs Non-PE (Full)	−14.94***	−5.65	−12.99	+38.65**	−4.70	14,169
H5a	SBO vs Non-PE (M3)	+2.90	+3.04	−4.10	+28.53*	−15.03	11,921
H5b	PBO vs Non-PE (Full)	−12.11**	+6.28	−1.46	+22.82***	−2.87	14,169
H5b	PBO vs Non-PE (M3)	+6.21	+2.52	+2.06	+21.44***	−9.88	11,921
EBITDA Margin Level (pp)							
H5c	SBO vs Non-PE (Full)	+227.41***	+224.12***	+128.09***	+198.50***	+176.24***	14,202
H5c	SBO vs Non-PE (M3)	+117.44***	+146.97***	+105.58***	+160.64***	+126.46***	11,943
H5d	PBO vs Non-PE (Full)	+225.30***	+114.47***	+74.95***	+113.38***	+104.86***	14,202
H5d	PBO vs Non-PE (M3)	+114.99***	+86.22***	+65.24***	+100.82***	+82.54***	11,943
ND/EBITDA Level (×)							
H6a	SBO vs Non-PE (Full)	+1.93***	+0.91	+1.12**	+0.30	+0.57	11,827
H6a	SBO vs Non-PE (M3)	+1.95***	+0.73	+1.05**	+0.27	+0.11	10,673
H6b	PBO vs Non-PE (Full)	+1.16***	+0.52*	+0.29	+0.49	+0.38	11,827
H6b	PBO vs Non-PE (M3)	+1.23***	+0.52*	+0.19	+0.64*	+0.24	10,673
D/Assets Level							
H6c	SBO vs Non-PE (Full)	+0.23***	+0.14***	+0.15***	+0.15***	+0.14***	14,023
H6c	SBO vs Non-PE (M3)	+0.22***	+0.13***	+0.13***	+0.13***	+0.12***	11,048

H	Comparison	Pooled uncontrolled	Pooled controlled	Yr+1 β	Yr+2 β	Yr+3 β	N (pooled)
H6d	PBO vs Non-PE (Full)	+0.18***	+0.11***	+0.12***	+0.11***	+0.11***	14,023
H6d	PBO vs Non-PE (M3)	+0.17***	+0.10***	+0.10***	+0.09***	+0.10***	11,048

*Note. Outcomes: All outcomes are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level. Significance *** p<0.01, ** p<0.05, * p<0.10.*

H4a and H4b predict slower post-IPO revenue growth for both PE groups relative to non-PE firms. Both are supported under both main regressions: M2 (full non-PE benchmark) and M3 (propensity-trimmed comparable subset). Under M2, the SBO-versus-non-PE controlled coefficient of −17.3 pp*** is more than twice the PBO discount of −7.7 pp**. The SBO discount persists across all three post-IPO years (Yr+1 −22.0 pp***, Yr+2 −12.2 pp**, Yr+3 −14.0 pp***), while the PBO discount is concentrated in Yr+1 (−21.1 pp***) and becomes statistically insignificant from Yr+2 onward. M3 strengthens both findings: the SBO discount widens to −19.0 pp***, and the PBO discount changes slightly to −7.6 pp***, indicating the headline revenue-growth gap holds when the non-PE benchmark is restricted to firms with comparable observable characteristics. Year-by-year on M3, the SBO discount is large and highly significant in every year (Yr+1 −22.2 pp***, Yr+2 −17.5 pp***, Yr+3 −17.7 pp***), while the PBO discount peaks in Yr+1 (−10.1 pp**) and Yr+2 (−7.9 pp**) before fading to insignificance by Yr+3. All robustness checks confirm both the discount and the SBO-PBO ordering for M2 and M3. Check E (PSM) preserves the negative direction on both groups but loses significance.

H5a and H5b predict higher post-IPO margin growth for SBO and PBO firms respectively than for non-PE peers. Neither is supported. The M2 controlled coefficients are −5.65 pp (n.s.) for SBO (directionally inconsistent with H5a) and +6.28 pp (n.s.) for PBO (directionally consistent with H5b). The M3 comparable-firm iteration yields near-zero coefficients (SBO +3.04 n.s., PBO +2.52 n.s.). Both iterations show an apparent positive effect concentrated in Yr+2, significant for SBO (+38.6 pp** on M2, +28.5 pp* on M3) and PBO (+22.8 pp*** on M2, +21.4 pp*** on M3), but the effect disappears in Yr+1 and Yr+3, suggesting the Yr+2 spike is a one-off rather than a real margin-growth advantage. Robustness Check C (EBITDA-positive firm-years) is the only check to produce statistically significant coefficients, and it reverses both signs to significantly negative on both M2 (SBO −16.0 pp**, PBO −7.3 pp**) and M3 (SBO −17.9 pp**, PBO −9.1 pp**). The other four checks produce coefficients that are all individually insignificant and show no consistent sign across the iterations. Taken together, the only statistically meaningful evidence on H5a/H5b goes against the prediction (Check C, on both M2 and M3 iterations), while the baseline and the remaining robustness checks are too imprecise to support either direction. Once loss-making non-PE firm-

years are removed, PE-backed firms' coefficients become significantly negative, indicating that PE-backed firms show lower margin growth than profitable non-PE peers in this subsample.

H5c and H5d predict higher post-IPO margin levels for SBO and PBO firms respectively than for non-PE peers. The headline M2 coefficients are large and significant (SBO +224.1 pp***, PBO +114.5 pp***). The large M2 coefficient magnitudes reflect the heavy left tail of the Non-PE benchmark, where loss-making pharmaceutical and biotechnology firms reporting deeply negative EBITDA margins pull the comparison-group mean to approximately −288 pp. Under M3, the SBO premium of +147.0 pp*** and PBO premium of +86.2 pp*** are still large and highly significant. Year-by-year on M3, the SBO and PBO coefficients are positive and significant in every year, peaking in Yr+2. The H5c/H5d verdict depends on whether the comparison group includes loss-making non-PE firm-years. Checks A (no interpolation) and B (pre-ASC 842), which do not address the loss-making composition, confirm the headline premia at *** significance on both M2 and M3. Check E (PSM) on the PBO leg also confirms the premium (+146.1 pp**), while the SBO PSM leg loses significance. Check C (EBITDA-positive firm-years) reverses the SBO premium to slightly negative on both M2 and M3 (−2.6 pp* and −3.5 pp** respectively) and reduces the PBO premium to statistically zero on both (−0.7 and −0.8, both n.s.). Check D (Crump α=0.10) produces small but significant positive coefficients (SBO +5.7 pp*, PBO +4.4 pp***). Taken together, the headline PE premium is driven by non-PE loss-makers. Once those firm-years are removed by profitability filtering (Check C), SBO firms have lower margins than profitable non-PE peers and PBO firms match. Once they are removed by symmetric propensity trimming (Check D), a small but significant PE premium of 4-6 pp remains. The underlying finding is that PE firms have margins moderately above comparable non-PE peers, much closer to the medians in Table 4 than to the M2/M3 regression headline.

H6a and H6b predict higher post-IPO ND/EBITDA for SBO and PBO firms respectively than for non-PE peers by Yr+3. Neither is supported in M2 or M3. The Yr+3 cross-section coefficients are +0.57 (n.s.) for SBO and +0.38 (n.s.) for PBO on M2, and +0.11 (n.s.) and +0.24 (n.s.) on M3. The pooled controlled M2 coefficients are marginally significant for PBOs (+0.52*) but not for SBOs (+0.91). Robustness Check C (EBITDA-positive firm-years) reveals significant premia on both groups and both iterations: SBO +2.11*** (M2) and +1.92*** (M3); PBO +1.68*** (M2) and +1.38*** (M3). Check A (no interpolation) produces a more limited finding. On the M2 iteration, the SBO premium becomes significant (+1.11**) while the PBO premium is essentially zero (−0.05 n.s.). On the M3 iteration, however, neither group is significant. Check D (Crump α=0.10) produces a significant pooled PBO premium (+0.79***)

and a insignificant pooled SBO premium (+0.84 n.s.), consistent with the symmetric propensity trim removing most of the loss-making non-PE tail. Checks B (pre-ASC 842) and E (PSM) confirm the baseline null on both groups and both iterations. H6a and H6b are therefore not supported in the M2 or M3 iteration but emerge clearly once the comparison is conditioned on profitable firm-years, consistent with the H5c/H5d findings above.

H6c and H6d predict higher post-IPO D/Assets for SBO and PBO firms respectively than for non-PE peers by Yr+3, and both are strongly supported. The Yr+3 SBO premium on M2 is +0.14*** and the PBO premium is +0.11***, with materially identical premia in Yr+1 and Yr+2. The M3 Yr+3 cross-section preserves both premia at +0.12*** (SBO) and +0.10*** (PBO), and Check C on M3 confirms the result (SBO +0.13***, PBO +0.10***). Both PE groups thus carry persistently higher gross leverage than comparable non-PE peers throughout the three-year window. All robustness checks confirm both premia on M2 and M3 and preserve the SBO-PBO ordering.

The pre-IPO parallel-trends tests for the secondary study are significant on revenue growth ($p < 0.001$ for both PE groups), reflecting differences in entry growth profiles between PE and non-PE issuers. Tests on EBITDA margin growth and ND/EBITDA growth are insignificant for SBO, with PBO marginally significant on EBITDA margin growth ($p = 0.071$). The D/Assets growth test is significant for PBO but not for SBO, indicating that the PBO leverage trajectory was already diverging from the non-PE benchmark before the IPO. The H6d post-IPO PBO premium therefore partly reflects a continuation of pre-IPO divergence rather than a purely post-IPO effect.

6.3 Summary of Results

Table 7 reports the verdict for each of the sixteen hypotheses developed in Section 2 (Table 1).

Table 7: Hypothesis Verdicts

This table reports the verdict for each of the sixteen hypotheses. The Predicted column repeats the directional prediction. The Result β column reports the headline controlled coefficient: the pooled controlled coefficient for revenue growth and margin metrics, and the Yr+3 cross-section coefficient for the leverage levels. The Verdict column states the headline conclusion alongside the most consequential robustness or M3 qualification.

H	Comparison	Outcome	Predicted	Result β	Verdict
Within-PE comparison: SBO vs PBO (primary regression, H1-H3)					
H1	SBO vs PBO	Revenue growth	SBO < PBO	−6.22 pp*	Partially supported (Yr+2 −13.0 pp*; n.s. by Yr+3)
H2a	SBO vs PBO	Margin growth	SBO < PBO	−9.28 pp (n.s.)	Not supported
H2b	SBO vs PBO	Margin level	SBO > PBO	+3.43 pp (n.s.)	Not supported (sign reverses to −2.1 pp under Check C)
H3a	SBO vs PBO	ND/EBITDA (Yr+3)	SBO ≈ PBO	+0.03 (n.s.)	Partially supported (all checks confirm; MDE: design underpowered)
H3b	SBO vs PBO	D/Assets (Yr+3)	SBO ≈ PBO	+0.02 (n.s.)	Supported (all checks confirm; MDE supported)

H	Comparison	Outcome	Predicted	Result β	Verdict
PE versus non-PE comparison: secondary regression (H4-H6)					
H4a	SBO vs Non-PE	Revenue growth	SBO < Non-PE	−17.33 pp***	Supported (M3: −19.0***; Check C on M3: −16.7***)
H4b	PBO vs Non-PE	Revenue growth	PBO < Non-PE	−7.73 pp**	Supported (M3: −7.6***; Check C on M3: −9.4***)
H5a	SBO vs Non-PE	Margin growth	SBO > Non-PE	−5.65 pp (n.s.)	Not supported (sign inconsistent; Check C: −16.0**)
H5b	PBO vs Non-PE	Margin growth	PBO > Non-PE	+6.28 pp (n.s.)	Not supported (Check C reverses to −7.3**)
H5c	SBO vs Non-PE	Margin level	SBO > Non-PE	+224.12 pp***	Supported in M2/M3 (+147.0***); Check C: −2.6*; Check C on M3: −3.5**
H5d	PBO vs Non-PE	Margin level	PBO > Non-PE	+114.47 pp***	Supported in M2/M3 (+86.2***); Check C: −0.7 n.s.; Check C on M3: −0.8 n.s.
H6a	SBO vs Non-PE	ND/EBITDA (Yr+3)	SBO > Non-PE	+0.57 (n.s.)	Not supported in baselines; Check C: +2.11***; Check C on M3: +1.92***
H6b	PBO vs Non-PE	ND/EBITDA (Yr+3)	PBO > Non-PE	+0.38 (n.s.)	Not supported in baselines; Check C: +1.68***; Check C on M3: +1.38***
H6c	SBO vs Non-PE	D/Assets (Yr+3)	SBO > Non-PE	+0.14***	Strongly supported (M3: +0.12***; Check C on M3: +0.13***)
H6d	PBO vs Non-PE	D/Assets (Yr+3)	PBO > Non-PE	+0.11***	Strongly supported (M3: +0.10***; Check C on M3: +0.10***)

*Note. Significance levels: * p < 0.10, ** p < 0.05, *** p < 0.01. Check C = EBITDA-positive firm-years subsample; Check C on M3 = joint EBITDA-positive and propensity-trimmed iteration.*

7 Discussion

This thesis addresses a question prior literature has covered only indirectly: whether SBO and PBO IPOs differ in the years following flotation, and whether the differences between PE-backed and non-PE issuers change by number of prior PE ownership rounds.

7.1 Primary study

The H1 within-PE revenue discount contrasts with private-phase findings such as those of Achleitner and Figge (2014), who report that SBO-PBO sales growth differences become statistically insignificant under multivariate controls during the holding period. In our study, the SBO discount is maintained in the pooled regression, concentrated in Yr+2 but indistinguishable from zero by Yr+3. Several mechanisms could account for this attenuation, including the possibility of accessible growth opportunities being progressively exhausted in both groups or management teams adapting to public-market reporting cycles, though the descriptive design cannot adjudicate between them. Two additional interpretations of the discount are consistent with our findings: under a complementarity framing consistent with Degeorge et al. (2016), untapped growth opportunities are more likely to be realized during the private holding period when an acquiring PE firm has a strategically different orientation from

the seller. To the extent that successive PE owners bring complementary strategic orientations, an SBO firm is more likely to have had growth opportunities captured across two ownership transitions than a PBO firm across one, leaving SBOs with fewer residual opportunities on average at the point of listing. Under a selection view, more mature firms with more stable trajectories are disproportionately channeled into SBOs (Achleitner et al., 2012; Jenkinson & Sousa, 2015). However, the difference in revenue growth may partly reflect higher pre-IPO revenue levels, which are not included as a separate control alongside log assets, given their relationship with the revenue growth outcome.

On margin growth (H2a), the SBO trajectory shows modest deterioration after Yr 0 (13.1% to 12.7% median), smaller than the post-IPO margin decline that Jain and Kini (1994) document for the broader IPO population. The PBO trajectory is flat, but the within-PE coefficient is small and not statistically significant. H2b on margin levels yields the same null result. One interpretation consistent with the joint H2a-H2b null is that both groups may have approached a similar operational margin profile before the IPO through pre-flotation engineering, leaving limited room on which a further round of operational improvement could differentiate the two groups. This could be due to PBO and SBO sponsors facing the same exit-readiness pressures in the run-up to an IPO, regardless of how many rounds of PE ownership have occurred. Both might have to demonstrate a defensible margin profile to public-market investors at the listing event, and the operational adjustments required to clear this bar may converge across PBO and SBO sponsors even if their starting positions differ. Within-PE margin similarity at IPO would then be consistent with a homogenizing effect of the exit process itself rather than an operational ceiling of the underlying firms. Hence, the combined verdict is a within-PE margin null on both growth and level once size and industry composition are accounted for, indicating that operational performance is statistically indistinguishable between SBO and PBO firms across the three-year post-IPO window.

The H3a and H3b convergence findings align with the gap-size argument developed in Section 2.3: with a small within-PE entry-leverage gap visible in the descriptive statistics and the tendency of publicly listed firms to move toward industry-target leverage (Flannery & Rangan, 2006; Frank & Goyal, 2009), both groups arrive at indistinguishable leverage by Yr+3. The MDE calculation supports interpreting the null as evidence of absence for D/Assets specifically, and as suggestive evidence for ND/EBITDA. A separate observation is that the leverage gap visible in the within-PE sample is considerably smaller than the entry-leverage premiums documented in the private-phase literature at the buyout transaction itself. In our sample, median Yr−1 D/Assets is 0.58 for SBOs and 0.57 for PBOs, a gap of 1.8% prior to the

IPO. This could reflect either substantial pre-IPO deleveraging between the buyout transaction and flotation (Axelson et al., 2013) or a selection effect on the IPO-exit channel itself. Highly levered firms may face limited investor appetite at listing, so PE-backed firms reaching an IPO may already sit at a leverage level the market is willing to accept, regardless of whether they entered as PBOs or SBOs. Either way, both PE groups arrive at the IPO event with leverage profiles already much closer than the buyout-transaction literature would suggest, which may help explain the clarity of the H3 convergence by Yr+3.

7.2 Secondary study

The secondary study reports stronger headline magnitudes than the primary, but several coefficients are sensitive to how the non-PE comparison group is constructed. The full M2 benchmark, the M3 propensity-trimmed subset, and the EBITDA-positive subsample (Check C) each test against a different aspect of the non-PE listing universe.

The H4a and H4b revenue gap against non-PE firms retains the predicted SBO-PBO ordering across all five robustness checks. Two mechanisms are candidate readings of the result, neither directly tested by the present design but each consistent with the data: the use-of-proceeds difference (Celikyurt et al., 2010; Hammer et al., 2025) and the debt-overhang mechanism of Myers (1977). Non-PE firms might have more flexibility to deploy IPO proceeds toward growth investment, while PE-backed firms might direct a larger portion of the proceeds to debt repayments, leaving less capital available for post-IPO growth. The Myers (1977) debt-overhang argument adds an ongoing channel beyond the one-time use-of-proceeds difference. Highly levered firms underinvest in value-creating projects because part of the project NPV accrues to existing creditors rather than equity-holders. Applied to the H4 context, this would be consistent with PE-backed firms facing an ongoing underinvestment incentive associated with lower post-IPO revenue growth across the full three-year window. The M3 subset preserves the discounts and keeps the SBO-PBO ordering, indicating that observable industry, size, and listing-year differences between the typical PE-backed firm and the typical non-PE issuer do not explain the headline gap. The discount that remains after propensity trimming is essentially the same as the discount in the full benchmark. One identification concern applies here that does not apply to the primary: the pre-IPO parallel-trends test is significant on revenue growth for both PE groups, reflecting differences in pre-IPO trajectories. The post-IPO coefficient therefore partly captures a divergence that was already present pre-IPO, rather than measuring a gap that the IPO event itself created or amplified.

The H5a and H5b margin-growth verdicts are not robust to specification choice. The M2 coefficients are insignificant and directionally inconsistent, while M3 yields coefficients

closer to zero for both groups. The apparent EBITDA margin premium of PE-backed firms over non-PE peers could reflect the industry composition of the non-PE benchmark, which contains a substantial share of loss-making issuers. An informative finding is what happens when loss-making non-PE firm-years are removed: PE-backed firms grow margins slower than profitable non-PE comparators on both M2 and M3. The H5a and H5b predictions are therefore not just unsupported, they are reversed once the comparison is restricted to profitable firms. One reading consistent with both the baseline null and the Check C reversal is that PE-backed firms enter the public market closer to a stable operational level after pre-IPO margin extraction, leaving less room for further improvement, while profitable non-PE firms retain more upward potential. Read together, the H5a/H5b results imply that the unrestricted baseline contains two offsetting forces: a tail of loss-making non-PE firms whose margins improve from very low levels (which inflates the non-PE growth comparator) and a mass of profitable non-PE firms that genuinely grow margins faster than the more mature PE-backed firms.

The H5c and H5d margin-level results are similarly sensitive to how the non-PE comparison group is constructed. On the headline M2, both PE groups show large and significant premia. However, when the comparison is restricted to profitable firm-years through profitability filtering (Check C), SBO firms slightly underperform profitable non-PE peers and PBO firms match. On the other hand, when the comparison is restricted to the propensity-overlap region through symmetric trimming, a small but significant PE premium of 4 to 6 pp remains. The overall interpretation is thus that PE-backed firms have margins moderately above comparable non-PE peers, substantially smaller than the headline M2/M3 regression coefficients might suggest, and much closer to the median-based gap visible in Table 4 (PE medians 13-15% versus non-PE medians 5-6% at Yr+3). A separate observation from the descriptive trajectories sharpens this interpretation: the post-IPO margin decline that Jain and Kini (1994) document for the broader IPO population holds for non-PE firms in our sample but not for either PE group. Non-PE median margins fall from 7.7% at Yr 0 to 5.0% at Yr+3, while PE medians remain essentially the same. One perspective consistent with this pattern is that pre-IPO operational engineering may buffer PE-backed firms against the typical post-IPO margin deterioration, which sharpens the H5c/H5d interpretation: PE firms exhibit higher margin levels than comparable non-PE peers not only at entry but throughout the post-IPO window, with the gap widening as median non-PE margins decline.

The H6c and H6d D/Assets gap is strongly supported and persists across the full three-year window. Firms adjust toward target capital structures only gradually (Flannery & Rangan, 2006), but the gap that PE-backed firms enter the public market with is too large, so even with

continued adjustment the gap remains visible at Yr+3. The M3 comparable-group preserves both premia at the 1% level, indicating that the gross leverage gap is associated with PE ownership rather than benchmark composition. The H6a and H6b ND/EBITDA gap, by contrast, is unsupported in the M2 iteration at Yr+3 but emerges strongly under Check C. One possible explanation is that the ND/EBITDA ratio behaves differently across the loss-making and profitable subsamples, with the Check C restriction to profitable firm-years yielding a more stable estimate. The persistent D/Assets gap combined with the Check C ND/EBITDA gap supports the descriptive observation that PE firms carry more debt relative to non-PE firms. Both a treatment and selection reading are consistent with the leverage pattern: PE acquisition may be associated with elevated leverage through the buyout structuring, or PEs may acquire firms with high debt capacity and, as a consequence, retain more leverage post-IPO (Achleitner et al., 2012; Axelson et al., 2013). The pre-IPO parallel-trends test on D/Assets raises an identification concern for the PBO comparison: it is significant for PBO but not for SBO, indicating that the PBO leverage trajectory was already diverging from the non-PE benchmark before the IPO.

7.3 Synthesis of Results

The cross-dimensional pattern across the primary and secondary studies supports the idea that prior private equity ownership is associated with a measurable but uneven imprint on firm performance in the years following an IPO. On revenue trajectories and gross leverage, the imprint appears larger with successive rounds of ownership; on operating profitability, it does not. PE backing is therefore not associated with a unified post-listing profile but a set of dimension-specific effects, and this asymmetry across dimensions is the central empirical finding the rest of this section develops.

Our interpretation of these patterns is that the five performance metrics capture different layers of the IPO firm. Revenue growth captures the residual opportunities the firm carries into the listing period: each round of PE ownership is associated with progressively less remaining post-IPO revenue-growth potential, leaving SBOs with the smallest residual, PBOs intermediate, and non-PE issuers the largest. EBITDA margin level captures the operational structure already in place at the IPO event. Both PE groups enter and remain at higher levels than the typical non-PE issuer, but within profitable firm-years (Check C) the difference reverses or disappears. This suggests that PE firms reach the IPO with margins close to an operational steady state, while profitable non-PE firms continue to improve their margins post-IPO. Leverage captures the financial structure that characterizes buyouts: at the IPO event itself both PE groups substantially reduce leverage levels, and the residual gap at Yr+3 likely reflects

the entry-leverage difference between PE and non-PE firms rather than slow post-IPO adjustment. We interpret the differing patterns across these metrics as evidence that PE backing is not associated with a single uniform effect on post-IPO firm behavior but instead leaves distinct fingerprints on opportunity, operations, and capital structure.

A separate observation common to both comparisons concerns the timing of the leverage adjustment rather than its level at Yr+3. A large part of the deleveraging for all groups occurs at the listing event itself rather than gradually across the post-IPO years, consistent with Holthausen and Larcker (1996) and Levis (2011). Non-PE firms even re-lever post-IPO, while PE firms only de-lever modestly in the three post-IPO years. The data are nonetheless consistent with the IPO event accounting for a larger share of the leverage convergence than the partial-adjustment framework described in Section 2 would imply.

7.4 Limitations

The results should be interpreted in light of the following constraints. First, the cross-sectional design cannot separate ownership-driven mechanisms from selection effects: SBO firms differ from PBO firms at IPO on dimensions beyond ownership depth, and the residual after controls cannot distinguish whether successive ownership rounds shape firm trajectories or whether firms with particular pre-existing trajectories are channeled into SBOs in the first place. Establishing causality would, for instance, require either matched deal-level data linking pre-buyout characteristics to post-IPO outcomes or an instrumental-variable approach, neither of which the present design implements. Second, the EBITDA margin findings depend on benchmark composition in a way the present analysis flags but cannot fully resolve: the appropriate non-PE comparison group is itself a substantive choice, and whether the question is how PE-backed firms compare to the broader IPO market or to mature profitable issuers leads to different benchmarks and different conclusions. Third, the SBO sample of 71 firms is small and concentrated in the post-2005 period, limiting statistical power. Fourth, two sample-construction choices introduce upward bias in observed performance: the MAR diagnostic shows that the non-PE benchmark is skewed toward larger firms because smaller firms more often have missing data and drop out, narrowing the size gap between PE and non-PE firms so that any difference documented here is likely an underestimate of the true difference; and the three-year listing requirement excludes firms that delist or go private early, which are disproportionately distressed, likely understating post-IPO leverage and overstating performance across all three groups.

8 Conclusion

This thesis examines whether and how prior private equity ownership is associated with post-IPO trajectories in revenue growth, EBITDA margin, and leverage among US listings between 1990 and 2021. The primary study compares SBO against PBO issuers within the PE universe. The secondary study compares each PE group against the non-PE benchmark.

The results describe a dimension-specific maturity gradient rather than a uniform PE imprint on post-IPO behavior. Within the PE universe, SBO firms grow revenue approximately six pp slower per year than PBO firms after controls. EBITDA margin growth, margin levels, and leverage levels are statistically indistinguishable between the two groups across the three-year window, and the leverage convergence is supported by the MDE calculations on D/Assets. Against the non-PE benchmark, both SBOs and PBOs grow revenue significantly slower across the three-year window, with the SBO discount more than twice the PBO discount under both the full benchmark and the propensity-trimmed comparable subset. Both PE groups also carry persistently higher D/Assets ratios than non-PE peers throughout the post-IPO window. The headline EBITDA margin premium, by contrast, is sensitive to benchmark composition: once the non-PE comparison is restricted to EBITDA-positive firm-years, the SBO premium reverses and the PBO premium disappears, indicating that the apparent advantage reflects the inclusion of loss-making non-PE firm-years rather than a structural margin difference relative to comparable profitable peers. The ND/EBITDA leverage gap follows a similar pattern, emerging only once negative EBITDA observations are removed from the comparison.

These findings support the idea that prior private equity ownership is associated with an uneven imprint on firm performance in the years after an IPO. The imprint accumulates with the depth of prior ownership on revenue trajectories and gross leverage, but not on operating profitability. PE backing does not produce a unified post-listing profile; it produces a set of dimension-specific effects. The within-PE revenue discount, combined with the consistent SBO-greater-than-PBO ordering against the non-PE benchmark on revenue growth and gross leverage, supports a reading in which the depth of prior ownership translates into measurable cross-sectional differentiation among PE-backed IPOs. The EBITDA margin findings, by contrast, exhibit no maturity pattern and are influenced by benchmark composition rather than ownership type.

This thesis contributes to the literature on PE-backed IPOs in two ways. First, it extends the SBO-versus-PBO comparison from the private holding period, where the existing comparative buyout literature concludes, into the post-IPO setting where it has not previously been examined directly. The within-PE revenue gradient documented here indicates that the

operational differences observed during the private phase do not dissolve at the moment of exit but carry a measurable residue into the public market. Second, the dual-comparison structure reveals dimension-specific patterns that would not be visible from either comparison alone: Propensity trimming and the EBITDA-positive restriction identify different aspects of the comparison. Propensity trimming tests whether observable structural composition explains the gap, while restricting to profitable firm-years tests whether profitability composition does. Studies that do not separate these layers likely conflate selection, mechanical composition, and treatment, and studies that treat PE-backed IPOs as a single category miss the within-PE growth gradient and the SBO-specific revenue discount documented here.

The limitations point to three directions for future research. First, deal-level data on entry multiples, holding periods, fund vintage, and sponsor identity would allow the within-PE results to be decomposed and would test whether the SBO revenue discount reflects sponsor characteristics or ownership depth as such. Second, a longer event window would assess whether the within-PE revenue gradient eventually closes after Yr+3, as the year-by-year decomposition tentatively suggests, or whether it re-widens as cohort effects emerge. Third, a cross-jurisdictional extension to European markets would test whether the dimension-specific gradient documented here reflects a general feature of repeated PE ownership or properties specific to the US buyout and IPO markets.

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Appendix

Appendix A - Missing-at-Random (MAR) Test Results

Table A1: Missing-at-Random Tests Across Raw Input Variables

This table reports missing-at-random (MAR) test results comparing non-PE firms with any missing post-IPO data against firms with complete post-IPO data, across each of the four raw input variables underlying the performance metrics: revenue, EBITDA margin, gross debt, and net debt. The two derived leverage ratios (D/Assets and ND/EBITDA) inherit their missingness pattern from the underlying inputs (gross debt and total assets for D/Assets; net debt and EBITDA for ND/EBITDA) and are not separately tested. Group means and p-values are reported for assets at IPO (Welch's t-test), IPO year (Welch's t-test), and Fama-French 12 industry composition (chi-squared test). A significant p-value ($p < 0.05$) indicates non-random missingness on the relevant characteristic.

Metric	Characteristic	Missing	Complete	p-value	Assessment
Revenue	Assets at IPO ($M)	$821	$1,467	0.0061	Non-random
	IPO year	2000.9	2002.5	0.0000	Non-random
	Industry (FF12)	-	-	0.0000	Non-random
EBITDA	Assets at IPO ($M)	$658	$1,498	0.0003	Non-random
	IPO year	2001.2	2002.2	0.0000	Non-random
	Industry (FF12)	-	-	0.0000	Non-random
Gross Debt	Assets at IPO ($M)	$509	$1,507	0.0000	Non-random
	IPO year	1999.8	2003.0	0.0000	Non-random
	Industry (FF12)	-	-	0.0000	Non-random
Net Debt	Assets at IPO ($M)	$597	$1,443	0.0000	Non-random
	IPO year	1999.9	2002.8	0.0000	Non-random
	Industry (FF12)	-	-	0.0000	Non-random

Table A2: Survivorship Bias Check

This panel reports a survivorship bias check that tests whether Yr+3 missingness predicts Yr+1 revenue growth in the non-PE benchmark. A significant difference would suggest that the Yr+3 cross-section systematically excludes weak performers (upward bias) or strong performers (downward bias) on the basis of survival.

Test	Missing Yr+3	Complete Yr+3	p-value	Assessment
Yr+1 revenue growth (%)	2.1	13.7	0.3105	n.s.
N (firms)	3,594	5,564		

Note. Welch's t-test on Yr+1 revenue growth, split by whether the firm has a Yr+3 observation.

Appendix B - Sample Statistics

Table B1: Distribution of IPOs by Listing Year

This table reports the year-by-year distribution of IPOs in the final regression sample, broken down by treatment group. The Total column on the right gives the combined count of PBO + SBO + Non-PE in each year (i.e., it excludes the Non-PE-M3 subset to avoid double-counting Non-PE firms that also appear in the Non-PE-M3 column). Within-group percentages express the share of each group's IPOs that occur in each calendar year, so each group's percentage column sums to 100%.

Year	PBO		SBO		Non-PE		M3		Total	
	N	%	N	%	N	%	N	%	N	%
1990	3	0.8%	0	0.0%	71	1.4%	21	0.5%	74	1.4%
1991	21	5.2%	0	0.0%	171	3.5%	53	1.4%	192	3.5%
1992	23	5.8%	1	1.4%	234	4.7%	43	1.1%	258	4.8%
1993	29	7.2%	1	1.4%	330	6.7%	307	8.0%	360	6.7%
1994	16	4.0%	1	1.4%	310	6.3%	275	7.2%	327	6.0%
1995	12	3.0%	0	0.0%	338	6.8%	303	7.9%	350	6.5%
1996	21	5.2%	0	0.0%	472	9.6%	400	10.4%	493	9.1%
1997	12	3.0%	0	0.0%	363	7.3%	314	8.2%	375	6.9%
1998	6	1.5%	0	0.0%	207	4.2%	177	4.6%	213	3.9%
1999	14	3.5%	2	2.8%	311	6.3%	252	6.6%	327	6.0%
2000	15	3.8%	3	4.2%	273	5.5%	207	5.4%	291	5.4%
2001	7	1.8%	0	0.0%	54	1.1%	36	0.9%	61	1.1%
2002	8	2.0%	1	1.4%	41	0.8%	34	0.9%	50	0.9%
2003	6	1.5%	0	0.0%	40	0.8%	34	0.9%	46	0.8%
2004	28	7.0%	2	2.8%	115	2.3%	103	2.7%	145	2.7%
2005	24	6.0%	4	5.6%	97	2.0%	86	2.2%	125	2.3%
2006	19	4.8%	6	8.5%	111	2.2%	101	2.6%	136	2.5%
2007	14	3.5%	5	7.0%	121	2.4%	105	2.7%	140	2.6%
2008	2	0.5%	0	0.0%	17	0.3%	16	0.4%	19	0.4%
2009	4	1.0%	4	5.6%	31	0.6%	30	0.8%	39	0.7%
2010	12	3.0%	2	2.8%	70	1.4%	62	1.6%	84	1.6%
2011	7	1.8%	2	2.8%	57	1.2%	53	1.4%	66	1.2%
2012	9	2.2%	3	4.2%	70	1.4%	60	1.6%	82	1.5%
2013	20	5.0%	3	4.2%	117	2.4%	101	2.6%	140	2.6%
2014	20	5.0%	7	9.9%	94	1.9%	74	1.9%	121	2.2%
2015	5	1.2%	7	9.9%	87	1.8%	57	1.5%	99	1.8%
2016	6	1.5%	1	1.4%	66	1.3%	52	1.4%	73	1.3%
2017	4	1.0%	3	4.2%	65	1.3%	44	1.1%	72	1.3%
2018	5	1.2%	3	4.2%	106	2.1%	78	2.0%	114	2.1%
2019	6	1.5%	0	0.0%	89	1.8%	65	1.7%	95	1.8%
2020	4	1.0%	4	5.6%	144	2.9%	91	2.4%	152	2.8%
2021	18	4.5%	6	8.5%	270	5.5%	199	5.2%	294	5.4%
Total	***400***	***100%***	***71***	***100%***	***4,942***	***100%***	***3,833***	***100%***	***5,413***	***100%***
Median	***2004***		***2012***		***1998***		***1999***		***1999***	

Table B2: Industry Distribution (Fama-French 12)

This table reports the Fama-French 12 industry distribution of firms in the final regression sample, broken down by treatment group. Industry classification follows the standard Ken French SIC-to-industry mapping. The Money / Finance category (SIC 6000-6999) is excluded

by construction. The Non-PE-M3 column is the propensity-trimmed comparable subset of the Non-PE benchmark. The Total column on the right gives the combined count of PBO + SBO + Non-PE (i.e., it excludes the Non-PE-M3 subset to avoid double-counting Non-PE firms that also appear in the Non-PE-M3 column).

Industry	PBO		SBO		Non-PE		M3		Total	
	N	%	N	%	N	%	N	%	N	%
Consumer NonDurables	33	8.2%	2	2.8%	191	3.9%	148	3.9%	226	4.2%
Consumer Durables	14	3.5%	4	5.6%	103	2.1%	90	2.3%	121	2.2%
Manufacturing	51	12.8%	14	19.7%	323	6.5%	279	7.3%	388	7.2%
Energy	11	2.8%	1	1.4%	141	2.9%	111	2.9%	153	2.8%
Chemicals	9	2.2%	3	4.2%	56	1.1%	48	1.3%	68	1.3%
Business Equipment	84	21.0%	8	11.3%	1,581	32.0%	1,337	34.9%	1,673	30.9%
Telecom	15	3.8%	4	5.6%	208	4.2%	171	4.5%	227	4.2%
Utilities	3	0.8%	0	0.0%	55	1.1%	47	1.2%	58	1.1%
Shops (Retail / Wholesale)	78	19.5%	19	26.8%	479	9.7%	404	10.5%	576	10.6%
Healthcare	32	8.0%	5	7.0%	927	18.8%	540	14.1%	964	17.8%
Other (incl. Transport, Mining, Construction, Hotels)	70	17.5%	11	15.5%	878	17.8%	658	17.2%	959	17.7%
Total	***400***	***100%***	***71***	***100%***	***4,942***	***100%***	***3,833***	***100%***	***5,413***	***100%***

Table B3: Industry Distribution (Fama-French 30)

This table reports the Fama-French 30 industry distribution of firms in the final regression sample. Industry classification follows the standard Ken French SIC-to-industry mapping; the FF30 Finance category (29) is excluded by construction through the SIC 6000-6999 filter. The Non-PE-M3 column is the propensity-trimmed comparable subset of the Non-PE benchmark. The Total column on the right gives the combined count of PBO + SBO + Non-PE (i.e., it excludes the Non-PE-M3 subset to avoid double-counting Non-PE firms that also appear in the Non-PE-M3 column).

Industry	PBO		SBO		Non-PE		M3		Total	
	N	%	SBO	%	N	%	N	%	N	%
01 Food	11	2.8%	0	0.0%	62	1.3%	52	1.4%	73	1.3%
02 Beer & Liquor	1	0.2%	1	1.4%	12	0.2%	10	0.3%	14	0.3%
03 Tobacco	0	0.0%	0	0.0%	5	0.1%	0	0.0%	5	0.1%
04 Recreation	11	2.8%	1	1.4%	113	2.3%	97	2.5%	125	2.3%
05 Print/Publish	1	0.2%	0	0.0%	30	0.6%	19	0.5%	31	0.6%
06 Consumer Goods	12	3.0%	2	2.8%	65	1.3%	57	1.5%	79	1.5%
07 Apparel	5	1.2%	0	0.0%	46	0.9%	40	1.0%	51	0.9%
08 Healthcare	32	8.0%	5	7.0%	927	18.8%	540	14.1%	964	17.8%
09 Chemicals	7	1.8%	3	4.2%	45	0.9%	38	1.0%	55	1.0%
10 Textiles	5	1.2%	0	0.0%	12	0.2%	9	0.2%	17	0.3%
11 Construction	24	6.0%	2	2.8%	94	1.9%	88	2.3%	120	2.2%
12 Steel	8	2.0%	3	4.2%	43	0.9%	40	1.0%	54	1.0%
13 Fab. Products	11	2.8%	5	7.0%	103	2.1%	91	2.4%	119	2.2%
14 Electrical Eq.	5	1.2%	0	0.0%	40	0.8%	34	0.9%	45	0.8%
15 Automobiles	6	1.5%	2	2.8%	47	1.0%	38	1.0%	55	1.0%
16 Carry	4	1.0%	1	1.4%	22	0.4%	19	0.5%	27	0.5%
17 Mines	1	0.2%	2	2.8%	12	0.2%	11	0.3%	15	0.3%

Industry	PBO		SBO		Non-PE		M3		Total	
	N	%	SBO	%	N	%	N	%	N	%
18 Coal	0	0.0%	0	0.0%	10	0.2%	0	0.0%	10	0.2%
19 Oil	11	2.8%	1	1.4%	131	2.7%	111	2.9%	143	2.6%
20 Utilities	3	0.8%	0	0.0%	55	1.1%	47	1.2%	58	1.1%
21 Telecom	15	3.8%	4	5.6%	208	4.2%	171	4.5%	227	4.2%
22 Services	82	20.5%	9	12.7%	1,484	30.0%	1,173	30.6%	1,575	29.1%
23 Bus. Equipment	33	8.2%	5	7.0%	657	13.3%	538	14.0%	695	12.8%
24 Paper	11	2.8%	0	0.0%	32	0.6%	23	0.6%	43	0.8%
25 Transport	15	3.8%	2	2.8%	129	2.6%	116	3.0%	146	2.7%
26 Wholesale	17	4.2%	7	9.9%	152	3.1%	132	3.4%	176	3.3%
27 Retail	46	11.5%	6	8.5%	223	4.5%	186	4.9%	275	5.1%
28 Restaurants	15	3.8%	5	7.0%	116	2.3%	101	2.6%	136	2.5%
29 Finance	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
30 Other	8	2.0%	5	7.0%	67	1.4%	52	1.4%	80	1.5%
Total	***400***	***100%***	***71***	***100%***	***4,942***	***100%***	***3,833***	***100%***	***5,413***	***100%***

Table B4: Year-by-Year Levels Across Performance Metrics

This table reports year-by-year levels for the four key input variables (absolute revenue in $M, EBITDA margin in %, Net Debt / EBITDA, Gross Debt / Total Assets) across the six event-time years from Yr −2 to Yr+3 inclusive of Yr 0 (the IPO year itself; excluded from regressions by convention but included here for descriptive completeness). The median block is reported first across the four groups (PBO, SBO, Non-PE, Non-PE-M3), followed by the mean block in the same column order with cross-sectional standard deviations stacked beneath each mean in parentheses. Levels are winsorized at the 1st and 99th percentiles per the same rule applied in the regressions, except for absolute revenue, which is reported on the unwinsorized raw scale to preserve the economic magnitude. Per-cell sample sizes are reported in Table B5.

Year	Median				Mean (SE)			
	PBO	SBO	Non-PE	M3	PBO	SBO	Non-PE	M3
Revenue (absolute, $M)								
Yr−2	217.22	487.27	26.76	30.36	913.87 (2,063.05)	1,130.07 (1,768.72)	370.77 (3,133.14)	341.01 (1,750.59)
Yr−1	265.40	536.19	33.78	39.93	994.77 (2,154.37)	1,302.06 (1,949.61)	379.42 (2,574.16)	357.59 (1,757.51)
Yr 0	356.93	762.18	54.01	60.59	1,117.68 (2,433.72)	1,435.06 (1,797.73)	453.47 (3,027.80)	427.95 (1,895.56)
Yr+1	421.68	828.71	73.84	86.35	1,178.18 (2,557.61)	1,558.17 (1,881.35)	492.30 (3,199.06)	491.55 (1,987.47)
Yr+2	472.43	866.98	89.53	110.44	1,295.29 (2,717.47)	1,634.96 (2,034.89)	548.39 (3,259.53)	564.71 (2,087.16)
Yr+3	500.63	950.90	105.02	134.34	1,384.75 (3,199.73)	1,690.78 (2,160.91)	650.38 (3,610.49)	676.68 (2,354.26)
EBITDA Margin Level (%)								
Yr−2	12.22	13.57	5.24	5.60	-21.49 (586.35)	14.75 (16.01)	-339.65 (1529.98)	-224.67 (1233.08)
Yr−1	13.39	14.13	6.44	7.06	-8.36 (311.55)	16.43 (11.72)	-321.37 (1421.94)	-155.28 (945.71)

Year	Median				Mean (SE)			
	PBO	SBO	Non-PE	M3	PBO	SBO	Non-PE	M3
Yr 0	14.34	13.06	7.67	8.53	3.32 (154.72)	15.76 (12.63)	-293.98 (1391.42)	-86.61 (546.87)
Yr+1	14.87	15.36	6.61	7.85	10.51 (59.16)	16.81 (12.32)	-300.42 (1464.93)	-108.47 (667.43)
Yr+2	14.98	12.71	5.35	6.89	15.07 (21.14)	15.44 (12.65)	-295.71 (1206.06)	-123.65 (830.52)
Yr+3	14.74	12.71	4.99	6.42	13.03 (28.14)	15.03 (12.82)	-266.06 (1175.65)	-114.05 (803.27)
Net Debt / EBITDA Level								
Yr−2	3.64	5.78	0.80	0.83	4.78 (9.21)	5.83 (3.34)	1.48 (7.69)	1.51 (7.77)
Yr−1	3.87	5.24	0.78	0.84	4.29 (8.02)	5.41 (7.70)	1.48 (6.99)	1.54 (7.11)
Yr 0	2.44	3.45	0.94	0.80	2.85 (7.69)	3.62 (3.54)	1.05 (9.16)	0.95 (9.39)
Yr+1	2.01	2.78	0.81	0.78	1.70 (6.35)	3.08 (2.90)	0.87 (9.07)	0.86 (9.40)
Yr+2	1.95	3.00	0.78	0.79	2.10 (5.44)	2.49 (7.98)	0.75 (8.79)	0.67 (9.13)
Yr+3	1.94	2.76	0.87	0.90	2.07 (6.84)	2.51 (6.07)	0.91 (9.05)	0.87 (9.43)
Gross Debt / Total Assets Level								
Yr−2	0.56	0.59	0.21	0.23	0.57 (0.39)	0.63 (0.33)	0.36 (0.47)	0.35 (0.43)
Yr−1	0.57	0.58	0.22	0.23	0.61 (0.41)	0.62 (0.32)	0.36 (0.45)	0.34 (0.39)
Yr 0	0.39	0.42	0.05	0.06	0.42 (0.35)	0.45 (0.26)	0.16 (0.24)	0.17 (0.24)
Yr+1	0.36	0.41	0.06	0.07	0.37 (0.29)	0.42 (0.24)	0.17 (0.24)	0.18 (0.24)
Yr+2	0.35	0.41	0.08	0.10	0.37 (0.30)	0.44 (0.26)	0.20 (0.27)	0.20 (0.26)
Yr+3	0.35	0.40	0.11	0.13	0.38 (0.33)	0.44 (0.32)	0.22 (0.30)	0.22 (0.28)

Note. Medians are reported alongside means because the post-IPO Non-PE benchmark contains a substantial tail of loss-making and rapid-growth firm-years that distort the means.

Table B5: Per-Year Sample Counts Across Performance Metrics

This table reports per-event-year firm-year counts for the four input variables tabulated in Table B4. Sample sizes vary across outcomes because each metric has its own data-availability requirement: absolute revenue is available wherever revenue itself is reported; EBITDA margin is available wherever revenue and EBITDA are both reported; Gross Debt / Total Assets is available wherever gross debt is reported. The Total column on the right sums PBO + SBO + Non-PE for each year (excluding Non-PE-M3).

Year	PBO	SBO	Non-PE	Non-PE-M3	Total
Revenue (absolute, $M)					
Yr−2	351	70	3,781	3,255	4,202

Year	PBO	SBO	Non-PE	Non-PE-M3	Total
Yr−1	350	70	4,065	3,706	4,485
Yr 0	350	70	4,141	3,833	4,561
Yr+1	387	71	4,533	3,799	4,991
Yr+2	395	71	4,616	3,754	5,082
Yr+3	367	65	4,109	3,298	4,541
Total	***2,200***	***417***	***25,245***	***21,645***	***27,862***
EBITDA Margin Level (%)					
Yr−2	355	69	4,004	3,389	4,428
Yr−1	388	70	4,515	3,758	4,973
Yr 0	393	70	4,600	3,812	5,063
Yr+1	397	69	4,643	3,798	5,109
Yr+2	394	70	4,669	3,786	5,133
Yr+3	369	66	4,205	3,377	4,640
Total	***2,296***	***414***	***26,636***	***21,920***	***29,346***
Net Debt / EBITDA Level					
Yr−2	263	63	2,846	2,518	3,165
Yr−1	329	69	3,866	3,534	4,260
Yr 0	342	69	4,103	3,797	4,503
Yr+1	385	69	4,499	3,768	4,948
Yr+2	390	70	4,578	3,721	5,025
Yr+3	358	65	4,045	3,239	4,462
Total	***2,067***	***405***	***23,937***	***20,577***	***26,409***
Gross Debt / Total Assets Level					
Yr−2	284	59	3,387	2,694	3,730
Yr−1	363	68	4,614	3,582	5,045
Yr 0	398	71	4,905	3,807	5,374
Yr+1	395	70	4,863	3,781	5,328
Yr+2	395	70	4,828	3,745	5,293
Yr+3	339	64	4,083	3,173	4,486
Total	***2,174***	***402***	***26,680***	***20,782***	***29,256***

Appendix C - Detailed Regression Output

Table C.1: Primary Regression Output - Pooled Results

This table reports the pooled OLS coefficient on the SBO indicator across a four-step control ladder for each of the five primary outcomes (H1-H3b). Specification (1) is unconditional. Specification (2) adds the natural logarithm of total assets at the IPO year as a continuous size control. Specification (3) adds Fama-French 12 industry fixed effects. Specification (4), the main spec reported in Table 5 of the body, additionally adds IPO-year fixed effects. The sample is restricted to PE-backed IPOs (PBOs and SBOs) listed in the United States between 1990 and 2021, pooled across the post-IPO event-time window Yr+1 to Yr+3. Robust standard errors

clustered at the firm level (G−1 degrees of freedom) are reported in parentheses below each coefficient. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

Specification	β (SE)	N	R^2
H1: Revenue Growth YoY (decimal) (N = 1,299 / G = 433)			
(1) No controls	−0.144*** (0.039)	1,299	0.004
(2) + log(Assets)	−0.088** (0.036)	1,299	0.020
(3) + log(Assets) + FF12 industry	−0.065* (0.034)	1,299	0.054
(4) + IPO-year FE [main spec]	−0.062* (0.037)	1,299	0.118
H2a: EBITDA Margin Growth (pp) (N = 1,335 / G = 457)			
(1) No controls	−2.83 (2.47)	1,335	0.000
(2) + log(Assets)	−3.25 (2.65)	1,335	0.000
(3) + log(Assets) + FF12 industry	−2.68 (2.36)	1,335	0.007
(4) + IPO-year FE [main spec]	−9.28 (8.65)	1,335	0.067
H2b: EBITDA Margin Level (pp) (N = 1,339 / G = 457)			
(1) No controls	+2.11 (2.07)	1,339	0.001
(2) + log(Assets)	−1.22 (1.87)	1,339	0.031
(3) + log(Assets) + FF12 industry	−1.22 (1.67)	1,339	0.058
(4) + IPO-year FE [main spec]	+3.43 (4.09)	1,339	0.126
H3a: ND/EBITDA Level (×) (N = 1,149 / G = 395)			
(1) No controls	+0.766 (0.610)	1,149	0.004
(2) + log(Assets)	+0.126 (0.598)	1,149	0.036
(3) + log(Assets) + FF12 industry	−0.009 (0.634)	1,149	0.053
(4) + IPO-year FE [main spec]	+0.272 (0.710)	1,149	0.075
H3b: D/Assets Level (ratio) (N = 1,224 / G = 427)			
(1) No controls	+0.053 (0.035)	1,224	0.004
(2) + log(Assets)	+0.003 (0.035)	1,224	0.093
(3) + log(Assets) + FF12 industry	−0.007 (0.037)	1,224	0.151
(4) + IPO-year FE [main spec]	+0.016 (0.034)	1,224	0.225

Table C.2: Primary Regression - Year-by-Year Decomposition

This table decomposes the within-PE primary regression by post-IPO event year. For each of the five outcomes (H1-H3b), a separate cross-sectional regression is estimated for Yr+1, Yr+2, and Yr+3 with the same controls as the main pooled regression (log(Assets) at IPO, FF12 industry fixed effects, and IPO year as a continuous variable). The coefficient on the SBO indicator measures the SBO-versus-PBO differential at each post-IPO year, conditional on controls. Robust standard errors clustered at the firm level are reported in parentheses below each coefficient. The PBO firms and SBO firms rows report the firm count underlying each year-by-outcome cell (ranges reflect minor metric-specific variation in sample retention). Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

	(1)	(2)	(3)	(4)	(5)
	Revenue Growth (pp)	EBITDA Margin Growth (pp)	EBITDA Margin Level (pp)	ND/EBITDA Level (×)	D/Assets Level

	(1)	(2)	(3)	(4)	(5)
Hypothesis:	H1	H2a	H2b	H3a	H3b
Yr+1	−0.074	−12.34	+4.94	+1.01*	+0.009
	(0.055)	(11.87)	(4.79)	(0.591)	(0.037)
Yr+2	−0.130*	−5.34	−0.52	−0.501	+0.037
	(0.069)	(4.13)	(1.93)	(1.208)	(0.039)
Yr+3	−0.005	+1.32	+0.64	+0.028	+0.022
	(0.035)	(1.33)	(2.59)	(0.994)	(0.046)
PBO firms	362	385-388	362-388	302-329	310-360
SBO firms	71	64-68	64-69	62-66	61-67

Note. For the headline leverage outcomes (Yr+3): (4): N = G = 364; (5): N = G = 371

Table C.3: Secondary Regression M2 Output - Pooled Results

This table reports the secondary M2 pooled OLS coefficients on the SBO and PBO indicators (each vs the full Non-PE benchmark) across a four-step control ladder for each of the five outcomes underlying Hypotheses H4-H6. Specification (1) is unconditional. Specification (2) adds log(Assets) at the IPO year. Specification (3) adds Fama-French 12 industry fixed effects. Specification (4), the main spec reported in Section 6.2 of the body, additionally adds IPO-year fixed effects. The sample comprises PE-backed (PBO and SBO) and the full Non-PE IPO benchmark of US listings between 1990 and 2021, pooled across the post-IPO event-time window Yr+1 to Yr+3. Non-PE is the reference category, so each coefficient measures the SBO-versus-Non-PE and PBO-versus-Non-PE differential conditional on controls. Robust standard errors clustered at the firm level (G−1 degrees of freedom) are reported in parentheses next to each coefficient. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

Specification	β SBO vs Non-PE (SE)	β PBO vs Non-PE (SE)	N	R^2
H4: Revenue Growth YoY (decimal) (N = 13,821 / G = 4,607)				
(1) No controls	−0.430*** (0.031)	−0.286*** (0.034)	13,821	0.003
(2) + log(Assets)	−0.228*** (0.034)	−0.157*** (0.034)	13,821	0.010
(3) + log(Assets) + FF12 industry	−0.145*** (0.038)	−0.091*** (0.035)	13,821	0.023
(4) + IPO-year FE [main spec]	−0.173*** (0.045)	−0.077** (0.036)	13,821	0.030
H5a/b: EBITDA Margin Growth (pp) (N = 14,169 / G = 4,912)				
(1) No controls	−14.94*** (5.20)	−12.11** (5.74)	14,169	0.000
(2) + log(Assets)	+4.42 (6.51)	−0.41 (5.57)	14,169	0.001
(3) + log(Assets) + FF12 industry	+12.55* (7.01)	+5.73 (5.29)	14,169	0.001
(4) + IPO-year FE [main spec]	−5.65 (13.73)	+6.28 (7.04)	14,169	0.004
H5c/d: EBITDA Margin Level (pp) (N = 14,202 / G = 4,912)				
(1) No controls	+227.41*** (16.04)	+225.30*** (16.04)	14,202	0.003
(2) + log(Assets)	+111.92*** (20.62)	+155.47*** (16.42)	14,202	0.008
(3) + log(Assets) + FF12 industry	+64.33** (30.05)	+110.63*** (18.10)	14,202	0.057
(4) + IPO-year FE [main spec]	+224.12*** (54.11)	+114.47*** (23.84)	14,202	0.088
H6a/b: ND/EBITDA Level (×) (N = 11,827 / G = 4,138)				
(1) No controls	+1.925*** (0.567)	+1.159*** (0.262)	11,827	0.002

Specification	β SBO vs Non-PE (SE)	β PBO vs Non-PE (SE)	N	R^2
(2) + log(Assets)	+0.753 (0.570)	+0.402 (0.271)	11,827	0.011
(3) + log(Assets) + FF12 industry	+0.675 (0.576)	+0.394 (0.272)	11,827	0.018
(4) + IPO-year FE [main spec]	+0.913 (0.595)	+0.523* (0.279)	11,827	0.022
H6c/d: D/Assets Level (ratio) (N = 14,023 / G = 4,928)				
(1) No controls	+0.230*** (0.032)	+0.177*** (0.016)	14,023	0.036
(2) + log(Assets)	+0.146*** (0.031)	+0.125*** (0.015)	14,023	0.085
(3) + log(Assets) + FF12 industry	+0.135*** (0.032)	+0.119*** (0.015)	14,023	0.152
(4) + IPO-year FE [main spec]	+0.141*** (0.031)	+0.113*** (0.015)	14,023	0.174

Table C.4: Secondary Regression M2 Output - Year-by-Year Decomposition

This table decomposes the M2 secondary regression by post-IPO event year. For each of the five outcomes (H4-H6c), a separate cross-sectional regression is estimated for Yr+1, Yr+2, and Yr+3 with the same controls as the main pooled M2 iteration (log(Assets) at IPO, FF12 industry fixed effects, and IPO year as a continuous variable). The SBO and PBO rows report the coefficient on the SBO and PBO indicators respectively, both versus the Non-PE reference category. Robust standard errors clustered at the firm level are reported in parentheses next to each coefficient. PBO firms, SBO firms, and Non-PE firms rows report firm counts underlying each year-by-outcome cell (ranges reflect metric-specific variation in sample retention). Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

	(1)	(2)	(3)	(4)	(5)
	Revenue Growth (pp)	EBITDA Margin Growth (pp)	EBITDA Margin Level (pp)	ND/EBITDA Level (×)	D/Assets Level
Hypothesis:	H4	H5a/b	H5c/d	H6a/b	H6c/d
Yr+1 SBO	−0.220*** (0.055)	−12.99 (15.74)	+128.09*** (40.13)	+1.123** (0.442)	+0.146*** (0.029)
Yr+1 PBO	−0.211*** (0.053)	−1.46 (10.45)	+74.95*** (19.83)	+0.292 (0.406)	+0.121*** (0.015)
Yr+2 SBO	−0.122** (0.051)	+38.65** (16.16)	+198.50*** (41.60)	+0.305 (1.047)	+0.152*** (0.032)
Yr+2 PBO	−0.008 (0.036)	+22.82*** (8.53)	+113.38*** (21.41)	+0.494 (0.368)	+0.113*** (0.015)
Yr+3 SBO	−0.140*** (0.049)	−4.70 (16.95)	+176.24*** (41.01)	+0.566 (0.820)	+0.144*** (0.040)
Yr+3 PBO	−0.052 (0.046)	−2.87 (9.31)	+104.86*** (21.22)	+0.375 (0.484)	+0.112*** (0.018)
PBO firms	362	362-388	362-388	302-329	310-360
SBO firms	71	64-68	64-69	62-66	61-67
Non-PE firms	4,174	3,964-4,444	3,964-4,455	3,269-3,743	3,805-4,500

Note. For the headline leverage outcomes (Yr+3): (4): N = G = 3,633; (5): N = G = 4,176

Table C.5: Secondary Regression M3 Output - Pooled Results

This table reports the secondary M3 pooled OLS coefficients on the SBO and PBO indicators (each vs the propensity-trimmed comparable Non-PE subset) across a four-step control ladder for each of the five outcomes underlying Hypotheses H4-H6c. The M3 iteration replaces the full Non-PE benchmark with a common-support propensity-trimmed subset, defined as Non-PE firms whose propensity score falls within the range observed for actual PE firms; the propensity model uses z-scored log(Assets), z-scored log(Revenue), z-scored IPO year, and FF30 industry dummies. Specifications (1)-(4) parallel the M2 ladder except FF12 is replaced by FF30 to remain consistent with the propensity-model industry classification. The sample comprises PE-backed firms and the propensity-filtered Non-PE subset, pooled across Yr+1 to Yr+3. Non-PE is the reference category. Robust standard errors clustered at the firm level are reported in parentheses. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

Specification	β SBO vs Non-PE (SE)	β PBO vs Non-PE (SE)
H4: Revenue Growth YoY (decimal; ×100 = pp) (N = 12,039 / G = 4,013)		
(1) No controls	−0.283*** (0.026)	−0.166*** (0.027)
(2) + log(Assets)	−0.214*** (0.029)	−0.123*** (0.028)
(3) + log(Assets) + FF30 industry	−0.176*** (0.032)	−0.081*** (0.029)
(4) + IPO-year FE [main spec]	−0.190*** (0.035)	−0.075*** (0.029)
H5a/b: EBITDA Margin Growth (pp) (N = 11,921 / G = 4,132)		
(1) No controls	+2.90 (3.40)	+6.21 (4.39)
(2) + log(Assets)	+0.78 (4.37)	+4.93 (4.72)
(3) + log(Assets) + FF30 industry	−1.28 (5.07)	+5.05 (4.45)
(4) + IPO-year FE [main spec]	+3.04 (8.29)	+2.52 (5.63)
H5c/d: EBITDA Margin Level (pp) (N = 11,943 / G = 4,132)		
(1) No controls	+117.44*** (10.68)	+114.99*** (10.70)
(2) + log(Assets)	+99.72*** (14.95)	+104.31*** (12.66)
(3) + log(Assets) + FF30 industry	+81.36*** (20.45)	+83.53*** (13.19)
(4) + IPO-year FE [main spec]	+146.97*** (34.49)	+86.22*** (17.43)
H6a/b: ND/EBITDA Level (×) (N = 10,673 / G = 3,714)		
(1) No controls	+1.949*** (0.577)	+1.232*** (0.272)
(2) + log(Assets)	+0.679 (0.580)	+0.433 (0.282)
(3) + log(Assets) + FF30 industry	+0.514 (0.575)	+0.370 (0.282)
(4) + IPO-year FE [main spec]	+0.730 (0.598)	+0.515* (0.288)
H6c/d: D/Assets Level (ratio) (N = 11,048 / G = 3,882)		
(1) No controls	+0.223*** (0.032)	+0.169*** (0.017)
(2) + log(Assets)	+0.131*** (0.031)	+0.113*** (0.017)
(3) + log(Assets) + FF30 industry	+0.117*** (0.032)	+0.099*** (0.016)
(4) + IPO-year FE [main spec]	+0.125*** (0.031)	+0.101*** (0.016)

Table C.6: Secondary Regression M3 Output - Year-by-Year Decomposition

This table decomposes the M3 secondary regression by post-IPO event year. For each outcome (H4-H6), a separate cross-sectional regression is estimated for Yr+1, Yr+2, and Yr+3 with the same controls as the main pooled M3 iteration (log(Assets) at IPO, FF30 industry fixed effects, IPO year as a continuous variable, and the comparable-firm Non-PE subset). The SBO and PBO rows report the coefficient on the SBO and PBO indicators respectively, both versus the Non-

PE reference category. Robust standard errors clustered at the firm level are reported in parentheses. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

	(1)	(2)	(3)	(4)	(5)
Outcome:	Revenue Growth (pp)	EBITDA Margin Growth (pp)	EBITDA Margin Level (pp)	ND/EBITDA Level (×)	D/Assets Level
Hypothesis:	H4	H5a/b	H5c/d	H6a/b	H6c/d
Yr+1 SBO	−0.222*** (0.049)	−4.10 (13.38)	+105.58*** (23.75)	+1.049** (0.4474)	+0.132*** (0.029)
Yr+1 PBO	−0.101** (0.051)	+2.06 (9.51)	+65.24*** (12.99)	+0.190 (0.420)	+0.102*** (0.016)
Yr+2 SBO	−0.175*** (0.054)	+28.53* (14.66)	+160.64*** (32.11)	+0.271 (1.005)	+0.131*** (0.033)
Yr+2 PBO	−0.079** (0.036)	+21.44*** (7.23)	+100.82*** (18.26)	+0.645* (0.366)	+0.092*** (0.017)
Yr+3 SBO	−0.177*** (0.050)	−15.03 (17.29)	+126.46*** (28.52)	+0.114 (0.852)	+0.121*** (0.041)
Yr+3 PBO	−0.062 (0.049)	−9.88 (9.30)	+82.54*** (17.05)	+0.244 (0.508)	+0.100*** (0.020)
PBO firms	338	316-341	316-341	287-314	274-318
SBO firms	70	63-67	63-68	61-65	60-66
Non-PE firms	3,605	3,307-3,717	3,307-3,723	2,906-3,335	2,957-3,497

Note. For the headline leverage outcomes (Yr+3): (4): N = G = 3,254; (5): N = G = 3,291

Table C.7: Pre-IPO Parallel Trends Test

This table reports the pre-IPO parallel-trends test for the four growth/change outcomes (revenue growth, EBITDA margin change, ND/EBITDA change, D/Assets change). Each regression is estimated on pre-IPO firm-years (Yr −2 and Yr −1) and tests whether the within-PE (SBO vs PBO) and the secondary (SBO/PBO vs Non-PE) differentials are already present before the IPO. Unconditional is unconditional within-PE; Conditional adds log(Assets), FF12 industry FE, and IPO-year FE within-PE. Secondary M2 columns add log(Assets), FF12 industry FE, and continuous IPO year on the PE+Non-PE sample with Non-PE as the reference category. Robust standard errors clustered at the firm level appear in parentheses. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.

Hypothesis	Outcome (pre-IPO trend variable)	Unconditional SBO vs PBO β (SE)	Conditional SBO vs PBO β (SE)	Secondary M2 SBO vs Non-PE β (SE)	Secondary M2 PBO vs Non-PE β (SE)	N (PE)	N (full)
H1/H4	Revenue Growth YoY (decimal)	−0.136 (0.096)	+0.025 (0.081)	−0.454*** (0.110)	−0.457*** (0.104)	413	4,054
H2/H5	EBITDA Margin Change (pp)	−19.00 (15.64)	−55.77 (54.88)	−16.04 (25.14)	−40.98* (22.69)	417	4,326
H3a/H6a/b	ND/EBITDA Change (×)	+1.013 (1.871)	+1.497 (2.145)	+0.029 (1.754)	−0.922 (1.137)	297	2,849
H3b/H6c/d	D/Assets Change	−0.042 (0.028)	−0.029 (0.035)	+0.020 (0.028)	+0.054*** (0.017)	340	3,648

Table C.8: Minimum Detectable Effect (MDE) at Yr+3

This table reports the minimum detectable effect (MDE) at the Yr+3 cross-section for the two leverage level outcomes. The MDE is the smallest absolute group-mean differential the design can reliably reject at $\alpha = 0.05$ with 80% power, given observed within-group standard deviations and sample sizes (computed via the standard two-sample formula $MDE = (z_{0.975} + z_{0.8}) \times \sqrt{(s_1^2/n_1 + s_2^2/n_2)}$). The observed gap is the raw Yr+3 mean differential between the two groups. MDE/gap below 1.0× indicates the design has adequate power to detect a true differential of the observed size; values above 1.0× indicate underpowered comparisons where a non-significant result should not be read as evidence of equivalence.

Comparison	Observed gap	MDE	MDE / gap	n_1	n_2
H3a/H6a: ND/EBITDA Level (×)					
SBO vs PBO	+0.574	+2.471	4.3×	62	302
SBO vs Non-PE	+1.707	+2.221	1.3×	62	3,269
PBO vs Non-PE	+1.133	+1.264	1.1×	302	3,269
H3b/H6c: D/Assets Level (ratio)					
SBO vs PBO	+0.0495	+0.1257	2.5×	61	310
SBO vs Non-PE	+0.2148	+0.1153	0.5×	61	3,805
PBO vs Non-PE	+0.1653	+0.0536	0.3×	310	3,805

Table C.9: M3 Propensity Model Construction

This table summarizes the construction of the M3 propensity-trimmed comparable Non-PE subset used as the reference category in the Secondary M3 regressions. The propensity model is fit once on the firm-level union sample (the same pass-id set is then used across every metric-specific regression by intersection with the metric's eligibility filter, ensuring sample-construction comparability). The common-support rule preserves all PE firms by design and drops Non-PE firms whose propensity score lies outside the PE range.

Item	Value
Propensity model	Logistic regression: P(PE = 1) on log(Assets), log(Revenue), IPO year, and FF30 industry dummies (continuous covariates z-scored). Fit on the firm-level union sample.
Pre-trim sample	4,561 firms - 420 PE (350 PBO, 70 SBO) and 4,141 Non-PE (852 firms missing propensity covariates dropped prior to fit)
Trim rule	Common-support: retain Non-PE firms with propensity score within the PE range [min(PS_PE), max(PS_PE)] = [0.010, 0.657]. PE firms preserved by design.
PE retention	420 / 420 (100%) - preserved by design
Non-PE retention	3,833 / 4,141 (92.6%) - 308 firms dropped
Final M3 comparable sample	4,253 firms (420 PE + 3,833 Non-PE)

Appendix D - Robustness Checks

Table D.1: Robustness A - Excluding Interpolated Firm-Years

This table reports the main-spec (controlled) coefficients under Robustness A: Excluding firm-years imputed via linear interpolation of missing accounting items (2,013 of 13,821 firm-years dropped, 14.6%). Primary M2 is the within-PE SBO-vs-PBO regression with log(Assets), FF12 industry FE, and IPO-year FE; Secondary M2 adds Non-PE as the reference category;

Secondary M3 uses the propensity-trimmed non-PE subset with FF30 industry FE. The Hypothesis column reports the primary (within-PE) and secondary (PE-vs-Non-PE) hypothesis numbers separated by a slash. For the flow outcomes (Revenue, EBITDA Margin Growth, EBITDA Margin Level) the regression is pooled across Yr+1 to Yr+3. For the leverage level outcomes (ND/EBITDA, D/Assets - marked [Yr+3]) the regression is a Yr+3 cross-section, matching the body's primary hypothesis-test regression. Robust standard errors clustered at the firm level in parentheses below each coefficient. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed).

Hyp. (Pri / Sec)	Outcome	Primary SBO vs PBO	Secondary M2 (vs full Non-PE)		Secondary M3 (vs trimmed Non-PE)	
			SBO vs Non-PE	PBO vs Non-PE	SBO vs Non-PE	PBO vs Non-PE
H1/H4	Revenue Growth YoY (decimal)	−0.051 (0.034)	−0.160*** (0.047)	−0.071* (0.039)	−0.185*** (0.039)	−0.069** (0.031)
H2a /H5a/b	EBITDA Margin Growth (pp)	−0.19 (0.68)	+5.04 (13.25)	+7.75 (7.39)	+2.52 (8.94)	+4.28 (5.36)
H2b/H5c/d	EBITDA Margin Level (pp)	−1.04 (1.99)	+208.04*** (53.16)	+117.40*** (27.75)	+131.04*** (34.19)	+87.97*** (20.56)
H3a/H6a/b	ND/EBITDA Level (×) [Yr+3]	+0.904 (0.600)	+1.112** (0.502)	−0.048 (0.582)	+0.737 (0.548)	−0.251 (0.602)
H3b/H6c/d	D/Assets Level (ratio) [Yr+3]	+0.005 (0.053)	+0.128*** (0.048)	+0.109*** (0.019)	+0.102** (0.047)	+0.091*** (0.019)

Table D.2: Robustness B - Pre-ASC 842 Sample (IPO year ≤ 2015)

This table reports the main-spec coefficients under Robustness B: Restricting the sample to firms with IPO year 1990-2015 so that all post-IPO observation years (Yr+1 to +3) fall before the ASC 842 lease-accounting transition. 374 of the 433 PE firms in the baseline sample are retained (86.4%); Non-PE firms are restricted analogously. Layout matches Robustness A: flow outcomes pooled Yr+1 to +3, leverage level outcomes Yr+3 cross-section. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed).

Hyp. (Pri / Sec)	Outcome	Primary M2 SBO vs PBO	Secondary M2 (vs full Non-PE)		Secondary M3 (vs trimmed Non-PE)	
			SBO vs Non-PE	PBO vs Non-PE	SBO vs Non-PE	PBO vs Non-PE
H1/H4	Revenue Growth YoY (decimal)	−0.043 (0.042)	−0.157*** (0.050)	−0.077** (0.039)	−0.184*** (0.040)	−0.069** (0.031)
H2a /H5a/b	EBITDA Margin Growth (pp)	−0.62 (0.70)	−13.05 (16.57)	−1.11 (6.72)	+0.39 (8.77)	−0.90 (4.96)
H2b/H5c/d	EBITDA Margin Level (pp)	−2.32 (1.83)	+229.66*** (66.78)	+115.19*** (24.78)	+138.85*** (41.70)	+83.05*** (18.64)
H3a/H6a/b	ND/EBITDA Level (×) [Yr+3]	−0.294 (1.211)	+0.547 (1.037)	+0.502 (0.530)	+0.164 (1.063)	+0.382 (0.536)
H3b/H6c/d	D/Assets Level (ratio) [Yr+3]	+0.040 (0.057)	+0.164*** (0.051)	+0.108*** (0.020)	+0.152*** (0.051)	+0.096*** (0.020)

Table D.3: Robustness C - EBITDA-Positive Firm-Years

This table reports the main-spec coefficients under Robustness C: Restricting the sample to firm-years with positive EBITDA margin (9,217 of 14,736 firm-years retained, 62.5%). Layout matches Robustness A and B. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed).

Hyp. (Pri / Sec)	Outcome	Primary M2 SBO vs PBO	Secondary M2 (vs full Non-PE)		Secondary M3 (vs trimmed Non-PE)	
			SBO vs Non-PE	PBO vs Non-PE	SBO vs Non-PE	PBO vs Non-PE
H1/H4	Revenue Growth YoY (decimal)	−0.027 (0.033)	−0.154*** (0.044)	−0.086** (0.036)	−0.167*** (0.042)	−0.094*** (0.030)
H2a /H5a/b	EBITDA Margin Growth (pp)	+0.06 (0.46)	−16.04** (6.53)	−7.27** (2.96)	−17.89** (7.84)	−9.06** (3.70)
H2b/H5c/d	EBITDA Margin Level (pp)	−2.07 (1.44)	−2.65* (1.49)	−0.69 (0.66)	−3.46** (1.53)	−0.80 (0.70)
H3a/H6a/b	ND/EBITDA Level (×) [Yr+3]	+0.310 (0.513)	+2.109*** (0.512)	+1.679*** (0.441)	+1.917*** (0.527)	+1.375*** (0.448)
H3b/H6c/d	D/Assets Level (ratio) [Yr+3]	+0.034 (0.048)	+0.128*** (0.042)	+0.101*** (0.019)	+0.127*** (0.042)	+0.095*** (0.019)

Table D.4: Robustness D (Crump α = 0.10) - Trimming Construction

This table summarizes the construction of the Crump α = 0.10 alternative comparable subset.

Item	Value
Trim rule	α = 0.10 - retain firms with propensity score in [0.10, 0.90]
Symmetry	Applied symmetrically to PE and Non-PE (PE firms not preserved, in contrast to M3 common-support)
Propensity model	Same logistic regression and union sample as M3
Pre-trim sample	4,561 firms (420 PE + 4,141 Non-PE)
PE retention	309 / 420 (73.6%) - 111 dropped
Non-PE retention	995 / 4,141 (24.0%) - 3,146 dropped
Final Crump comparable sample	1,304 firms (309 PE + 995 Non-PE)

Table D.5: Robustness D (Crump α = 0.10) - Regression Results

This table reports the main-spec coefficients under Robustness D (Crump α = 0.10 trimming). The Crump rule replaces the common-support M3 trimming with a tighter [α, 1 − α] cutoff; the resulting comparable subset feeds both the within-PE primary regression and the secondary regression (which replaces M3 in the standard pipeline). Specification (4): log(Assets), FF30 industry FE, IPO-year FE; Non-PE as the reference category for the secondary regression. Flow outcomes pooled Yr+1 to +3, leverage outcomes Yr+3 cross-section. Robust standard errors clustered at the firm level in parentheses below each coefficient. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed).

Hypothesis (Pri / Sec)	Outcome	Primary M2 SBO vs PBO	Secondary M3 (Crump α=0.10 trimmed)	
			SBO vs Non-PE	PBO vs Non-PE
H1/H4	Revenue Growth YoY (decimal)	−0.032 (0.022)	−0.086*** (0.024)	−0.062*** (0.017)
H2a /H5a/b	EBITDA Margin Growth (pp)	+0.19 (0.41)	+2.51 (2.42)	+0.33 (0.70)
H2b/H5c/d	EBITDA Margin Level (pp)	−2.53* (1.43)	+5.68* (3.22)	+4.44*** (1.28)
H3a/H6a/b	ND/EBITDA Level (×) [Yr+3]	−0.152 (0.851)	+0.334 (0.837)	+0.745* (0.410)

Hypothesis (Pri / Sec)	Outcome	Primary M2 SBO vs PBO	Secondary M3 (Crump α=0.10 trimmed)	
			SBO vs Non-PE	PBO vs Non-PE
H3b/H6c/d	D/Assets Level (ratio) [Yr+3]	+0.036 (0.047)	+0.127*** (0.042)	+0.110*** (0.024)

Table D.6: Robustness E (PSM) - Match Construction

This table reports the construction of the three matched samples for the propensity-score matching (PSM) robustness check. Matching is one-to-one nearest-neighbor without replacement on the propensity score from a logistic model with log(Assets), FF30 industry dummies, and IPO year as covariates, with a caliper of 0.1 × SD(PS). Match-construction diagnostics are aggregated across the five outcomes (matched pairs, pre-match propensity-score separation, and match rate are reported as ranges across the outcomes)

Match	Description	Matched pairs (range across outcomes)	Pre-match PS separation (range)	Match rate (range)
Match 1	SBO-PBO (within-PE, primary)	57-62 of 66-71	+0.141 - +0.182	84.5% - 93.9%
Match 2	SBO-Non-PE (secondary, SBO leg)	60-65 of 66-71	+0.108 - +0.114	87.0% - 91.5%
Match 3	PBO-Non-PE (secondary, PBO leg)	324-384 of 329-388	+0.084 - +0.089	98.5% - 99.7%

Table D.7: Robustness E (PSM) - Regression Results

This table reports the main-spec coefficients under Robustness E (PSM matched samples). The Primary column uses Match 1 (SBO matched to PBO within PE); the two Secondary columns use Match 2 (SBO matched to Non-PE) and Match 3 (PBO matched to Non-PE). All regressions add log(Assets), FF30 industry FE, and IPO-year FE to the matched sample. Flow outcomes pooled Yr+1 to +3, leverage outcomes Yr+3 cross-section. The Primary and SBO-leg secondary matches retain only 57-65 firms per side, so for those columns the direction and magnitude of the coefficient are more informative than the p-value. The PBO-leg secondary match retains 324-384 firms and is sufficiently powered to interpret significance directly. Robust standard errors clustered at the firm level in parentheses. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed).

Hypothesis (Pri / Sec)	Outcome	SBO-PBO	Secondary (matched samples)	
			SBO-Non-PE	PBO-Non-PE
H1/H4	Revenue Growth YoY (decimal)	−0.051* (0.030)	−0.245 (0.172)	−0.014 (0.042)
H2a /H5a/b	EBITDA Margin Growth (pp)	−0.34 (0.62)	+21.30 (33.15)	+17.17 (15.37)
H2b/H5c/d	EBITDA Margin Level (pp)	−3.24 (2.14)	+138.45 (140.28)	+146.08** (63.98)
H3a/H6a/b	ND/EBITDA Level (×) [Yr+3]	−0.165 (0.859)	+1.195 (1.594)	+0.049 (0.632)
H3b/H6c/d	D/Assets Level (ratio) [Yr+3]	+0.053 (0.081)	+0.223*** (0.061)	+0.117*** (0.022)

Table D.8: Robustness E (PSM) - Year-by-Year (PBO-Non-PE Match)

This table decomposes the PSM main-spec coefficient by post-IPO event year for the PBO-vs-Non-PE match (Match 3), the only PSM exercise sufficiently powered for year-level inference,

with 324-384 matched pairs depending on the outcome. Only the three flow outcomes (H1/H4, H2a/H5a, H2b/H5b) admit a year-by-year decomposition; the leverage level outcomes (H3a/H6a, H3b/H6c) are reported as Yr+3 cross-sections only (headline values in D.7). Robust standard errors clustered at the firm level in parentheses below each β. Significance: *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed).

Hypothesis (Pri / Sec)	Outcome	Yr+1	Yr+2	Yr+3	N (firms)
H1/H4	Revenue Growth YoY (decimal)	−0.117 (0.084)	+0.020 (0.076)	+0.005 (0.032)	722
H2a/H5b	EBITDA Margin Growth (pp)	+29.03 (20.50)	−7.79 (27.26)	+11.73 (27.79)	705-767
H2b/H5c	EBITDA Margin Level (pp)	+127.59** (59.78)	+136.45** (57.08)	+151.85** (62.37)	705-768

AI Statement

Two AI tools were used in the preparation of this thesis: Claude by Anthropic (Sonnet 4.6 and Opus 4.7) and ChatGPT 5.4 by OpenAI. Their use covered three areas. The first was writing. AI was consulted to sharpen phrasing, improve flow, and remove redundancy. The second was coding. AI helped build, identify errors, and clarify syntax when working through the empirical procedures. The third was research support, where AI helped surface relevant literature and served as a discussion partner when working through how ideas fit together. These tools improved the linguistic consistency and readability of the text and helped our code run with greater stability, allowing us to devote more time to conceptual reasoning rather than debugging.

The main risks identified were the fabrication of information, excessive agreeableness toward the user, and a general lack of precision, which were particularly apparent when retrieving details from sources. Language models can generate plausible-sounding but incorrect claims, and all AI outputs were therefore treated as suggestions to be assessed rather than conclusions to be accepted. We critically reviewed every AI suggestion, cross-checked all factual claims and citations against the primary sources, and verified every numerical result independently against our own regression output.

Our overall experience is that AI can assist with many aspects of academic work, but it often produces inaccurate or misleading results. AI enabled us to do our work better but did not do our work or thinking for us. Every argument, finding, and conclusion in this thesis reflects our own reading, reasoning, and judgment, and keeping AI in a supporting role throughout ensured that the intellectual substance of the thesis remained our own.