# Firms' Leverage Targets*

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**Abstract**

We construct a dataset of firms' explicit leverage targets from earnings conference calls. Managers overwhelmingly target Debt/EBITDA, not the Debt/Assets ratio standard in the academic literature, and cite financial flexibility as their primary motivation. Targets are stable over time, centering around 3×, and far less dispersed than actual leverage. Using these observed targets, we find that firms close 56–77% of the leverage gap within a year, reconciling the slow adjustment speeds documented in prior work. The mechanism of adjustment, however, differs by direction: overleveraged firms delever primarily through EBITDA growth rather than debt repayment, consistent with a leverage ratchet effect, while underleveraged firms lever up through active borrowing. Together, our findings demonstrate that firms actively manage toward cash-flow-based leverage targets, providing direct empirical support for trade-off theory.

**JEL Classification:** G32, G35, M41
**Keywords:** Capital structure, leverage targets, speed of adjustment, trade-off theory, leverage ratchet, earnings calls, corporate disclosure

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# 1 Introduction

Do managers have leverage targets? If so, what do those targets look like, and do they actually guide capital structure decisions? These questions lie at the heart of the capital structure literature, yet answering them has proven difficult: firms' internal leverage targets are typically unobserved. Researchers have therefore relied on two indirect approaches: estimating targets from firm characteristics and leverage histories (Fama, 2002; Flannery and Rangan, 2006; Lemmon, Roberts, and Zender, 2008), or eliciting them through managerial surveys (Graham and Harvey, 2001; Graham, 2022). The first approach introduces measurement error that can severely bias tests of targeting behavior. The second provides valuable cross-sectional snapshots of leverage targets, but cannot link stated objectives to subsequent leverage choices. As a result, the empirical literature has been unable to conclude whether firms set leverage targets, and ultimately what capital structure theories guide firms' leverage decisions.

In this paper, we hand-collect and assemble a new large-scale dataset of firms' explicit leverage targets from earnings conference calls. Conference calls provide a uniquely rich setting for observing how managers think about capital structure. During these calls, managers frequently articulate quantitative leverage objectives, explain the rationale behind those objectives, and sometimes describe the specific actions they intend to take to reach them. For example, in Coca-Cola's February 2024 earnings call, the CFO stated:

> *"Our balance sheet remains strong, and our net debt leverage of 1.7x EBITDA is below our targeted range of **2 to 2.5x**."*

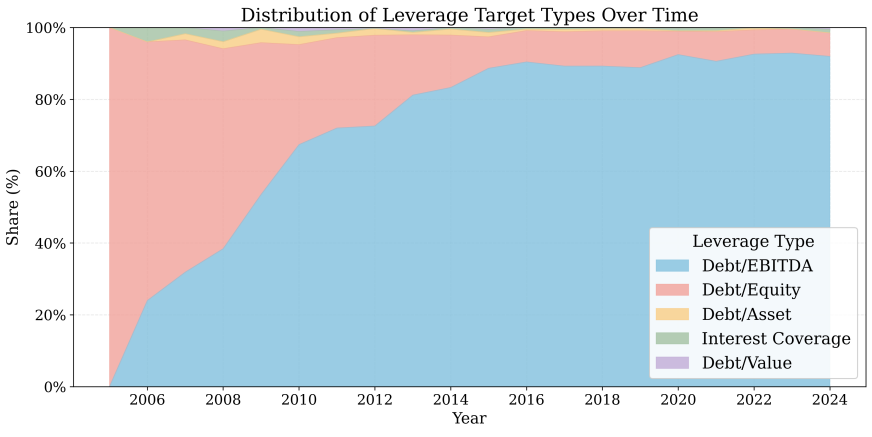
By systematically extracting these target disclosures, we observe not only the target itself but also the managerial reasoning that accompanies it. Our novel dataset contains 9,384 leverage target disclosures from 1,350 unique Compustat firms between 2005 and 2024.[1] These disclosing firms

[1] Appendix Figure B1 shows their distribution across firms. Appendix Figure B2 plots the number of disclosures per year.

account for approximately 43% of total U.S. corporate debt, 35% of total assets, and 34% of aggregate market capitalization in Compustat as of the end of 2023. Our sample thus captures a substantial and economically important share of the corporate sector. Using this dataset, we first document a few novel descriptive facts on how managers set leverage targets and manage capital structure.

First, and most strikingly, firms overwhelmingly express leverage objectives in terms of *debt-to-EBITDA*, not the debt-to-assets ratio that dominates the academic literature. Of the 9,384 disclosures, 7,960 (85%) specify a debt-to-EBITDA target, compared to only 1,274 for debt-to-equity and fewer than 100 for debt-to-assets. While earlier years exhibit some heterogeneity in metrics, over 80% of all target disclosures use debt-to-EBITDA in recent years (Figure 1). This pattern aligns with the finding in Lian and Ma (2021) that the majority of corporate lending is cash-flow-based, with debt-to-EBITDA ratios appearing prominently as financial covenants.[2] In line with prior suggestive evidence, we find that, within the set of disclosing firms, firms that have debt-to-EBITDA financial covenants and high-yield credit ratings are much more likely to use cash-flow-based leverage targets as opposed to debt-to-equity or debt-to-asset ratios. More broadly, the growing prevalence of cash-flow-based lending and the central role of debt-to-EBITDA in credit rating methodologies likely reinforce firms' tendency to anchor on this metric when setting leverage targets.

Figure 1: Share of Leverage Target Types Over Time




*Notes:* This figure plots the share of each leverage target type disclosed in earnings calls from 2005 to 2024.

[2] This finding also resonates with survey responses in Graham (2022).

Second, disclosed targets are economically meaningful and comparatively stable. The median debt-to-EBITDA target is $2.75\times$ and the mean is $3.05\times$, with the distribution concentrated around these levels throughout the sample period.[3] A target near $3\times$ is meaningful, as it sits roughly at the boundary between investment-grade and high-yield credit ratings, suggesting that many firms set their leverage targets to maintain a good credit rating. This clustering is consistent with the credit-rating channel emphasized by Kisgen (2006) and with survey evidence that managers view credit ratings as a first-order consideration in leverage decisions (Graham, 2022). Targets are also persistent within firms.[4] Moreover, compared to the same firms' actual leverages, disclosed leverage targets are much more stable.[5] This stability—together with the fact that targets are far less dispersed than actual leverage—is difficult to reconcile with purely opportunistic accounts of leverage choice and suggests that much of the variation in observed leverage reflects deviations from targets rather than heterogeneous optima.

Third, the context in which managers discuss targets reveals that these disclosures reflect deliberate capital structure policy rather than ad hoc responses to analyst pressure. The majority of target disclosures ($61.3\%$) appear in the *prepared presentation* portion of the call, indicating that managers proactively communicate their leverage objectives before any questions are asked. When managers discuss their targets, the most frequently cited motivation is *financial flexibility* ($62.6\%$ of disclosures), followed by regulatory or covenant considerations ($14.0\%$). The most common actions discussed alongside targets are operational improvements ($39.6\%$), debt reduction ($37.0\%$), share repurchases ($20.2\%$), and acquisitions ($15.9\%$). This rich characterization goes beyond what survey data can provide and paints a picture of managers who actively think about leverage as a strategic choice variable, not a passive residual of financing decisions.

A natural concern is that these disclosures are merely cheap talk. We provide direct evidence against this interpretation. Disclosed targets strongly predict future leverage even after controlling

[3] Appendix Figure B3 plots the full distribution of disclosed Debt/EBITDA targets.

[4] Appendix Figure B4 shows the distribution of gaps between consecutive disclosures, and Figure B5 plots the cumulative share of firms that revised their target.

[5] A variance decomposition shows that $42.9\%$ of target variation is between industries and $27.9\%$ is within-industry but between-firm, with only $29.2\%$ attributable to within-firm changes over time.

for current leverage, firm characteristics, and firm fixed effects (Lemmon, Roberts, and Zender, 2008). The coefficient on the disclosed target for four-quarter-ahead leverage is $0.29$ ($0.42$) with firm (industry) fixed effects, implying that a one-standard-deviation higher target predicts $0.31$ ($0.44$) higher future leverage—economically large relative to the cross-sectional dispersion in actual leverage.[6] Importantly, this predictive content is *incremental* to that of current leverage, indicating that targets contain forward-looking information about the direction of capital structure changes that is not captured by the firm's existing leverage ratio or observable characteristics. We interpret this as strong evidence that disclosed targets are informative about managerial intent.

Having established that managers have well-defined, predominantly debt-to-EBITDA leverage targets that are informative about future capital structure, we turn to two implications that speak directly to existing capital structure theories.

**Implication 1: Firms adjust quickly to their leverage targets, contrary to previous empirical findings.** A longstanding debate concerns the speed at which firms adjust toward their leverage targets. Prior estimates range from 7–18% per year (Fama, 2002) to 30–40% (Flannery and Rangan, 2006). These slow speeds have been interpreted as evidence against active targeting. Using our disclosed targets, we estimate substantially faster adjustment: firms close $45.8\%$ of the gap between actual and target leverage within a single quarter, and $77\%$ within a year.

What explains this stark difference? Two channels could contribute: the choice of leverage metric (debt-to-EBITDA rather than debt-to-assets) and better measurement of the target (disclosed rather than estimated). We decompose their relative importance by estimating LASSO-based debt-to-EBITDA targets for the same disclosing firms. At the four-quarter horizon, disclosing firm-quarters close $38.9\%$ of the gap toward estimated debt-to-EBITDA targets with industry fixed effects, and $59.8\%$ with firm fixed effects. These estimates are substantially above the 7–39% range in prior work—which uses estimated debt-to-assets targets—but fall short of the $56.1\%$ and $76.7\%$ we obtain with disclosed targets. The gap thus decomposes into two forces: (1) switching from debt-to-assets to the debt-to-EBITDA metric that managers actually target, and (2) eliminating measurement error by

[6] The predictive power is robust at shorter (one-quarter ahead) and longer (eight-quarter-ahead) horizons.

observing actual targets rather than estimating them. The same firms that adjust rapidly toward their disclosed targets appear to adjust slowly toward their estimated debt-to-assets targets, confirming that the discrepancy reflects measurement, not selection. The rapid, deliberate adjustment toward stable targets is consistent with trade-off theory and difficult to reconcile with the pecking order's prediction of no target or market timing's prediction that leverage drifts with equity valuations.

**Implication 2: The leverage ratchet shapes the channel of adjustment.** A decomposition of leverage changes reveals that above-target firms do *not* actively repay debt. Instead, they delever almost entirely through EBITDA growth—exactly as the leverage ratchet of Admati et al. (2018) predicts. Below-target firms, facing no ratchet friction on borrowing, lever up primarily through active debt issuance. This channel asymmetry produces asymmetric adjustment speed: overleveraged firms close $50.0\%$ of the gap within a quarter versus $19.7\%$ for underleveraged firms, a ratio of approximately $2.5\times$ ($p < 0.01$) that widens at the four-quarter horizon ($82.4\%$ vs. $41.6\%$).[7]

Why do overleveraged firms adjust faster? Two forces work in tandem. First, asymmetric costs of deviation: exceeding a leverage target risks credit downgrades and covenant violations, while falling short forgoes tax benefits but carries no immediate penalty. Second, the public nature of a stated target amplifies external pressure—analyst and creditor scrutiny intensifies when leverage is elevated, and firms are indeed most likely to disclose targets in precisely these quarters. In this sense, a publicly announced leverage target may function as a commitment device, signaling management's intention to delever and alleviating investor concerns that the ratchet will cause elevated debt to persist.[8]

**Literature review.** Our paper relates to three strands of the literature. First, we contribute to the capital structure debate originating from Modigliani and Miller (1958), between the trade-off theory (Kraus and Litzenberger, 1973; Leland, 1994), pecking order (Myers, 1984), and market

[7] Because the Debt/EBITDA ratio has a heavy right tail, we verify that the asymmetry is robust to tighter winsorization, capping the leverage gap, and range-aware gap measurement.

[8] Importantly, the rapid adjustment of overleveraged firms through EBITDA growth—rather than debt repayment—is not a mechanical artifact of mean-reverting earnings: the implied leverage ratio from IBES consensus EBITDA guidance is a poor predictor of disclosed targets within firm ($\beta = 0.013$, $R^2 = 0.04$ with firm fixed effects), confirming that targets reflect independent capital structure decisions rather than EBITDA arithmetic.

timing (Baker and Wurgler, 2002). Distinguishing among these theories has proven difficult because researchers cannot directly observe firms' intended targets and must instead estimate them from firm characteristics (Fama, 2002; Leary and Roberts, 2005; Flannery and Rangan, 2006; Lemmon, Roberts, and Zender, 2008). Dynamic models with adjustment frictions (Fischer, Heinkel, and Zechner, 1989; Strebulaev, 2007) can generate slow estimated adjustment even when firms actively target, making the speed-of-adjustment literature inconclusive (Graham and Leary, 2011). Our directly observed targets bypass this noisy first-step estimation. The closest existing data on firms' intended capital structures come from managerial surveys (Graham and Harvey, 2001; Graham, Leary, and Roberts, 2015; Graham, 2022); our dataset extends this by observing the same firm repeatedly over time and linking stated targets to subsequent leverage choices.

Second, we contribute to the literature on the leverage ratchet (Admati et al., 2018; Demarzo and He, 2021). Prior empirical work provides suggestive evidence of asymmetric adjustment speeds (Byoun, 2008). We provide direct evidence that the ratchet shapes the *mechanism* of adjustment: above-target firms avoid active debt repayment and instead delever through EBITDA growth, consistent with shareholders resisting the wealth transfer to creditors that debt repayment entails. At the same time, reputational and market pressures associated with a public target coincide with faster deleveraging, with firms circumventing the ratchet friction through the EBITDA channel.

Third, our paper belongs to the growing literature deploying large language models on corporate text (Hassan et al., 2019; Sautner et al., 2020; Jha et al., 2024; Kalyani et al., 2025). More broadly, our paper relates to the textual analysis literature (see, e.g., Loughran and Mcdonald, 2016; Loughran and McDonald, 2020; Hassan et al., 2025, for excellent reviews). Our paper is closest to Gormsen and Huber (2024), Gormsen and Huber (2025), and Jha et al. (2024). While all four papers use earnings call transcripts, we differ in both objectives and methods. In terms of objectives, Gormsen and Huber (2024) and Gormsen and Huber (2025) focus on firms' perceived cost of capital, Jha et al. (2024) focuses on investment, while we focus on capital structure. With respect to methods, while Jha et al. (2024) also uses an LLM rather than human annotators as in Gormsen and Huber (2024), our method differs in two respects. First, while Jha et al. (2024)'s output from the LLM is qualitative

(e.g., Increase substantially, increase), we extract exact quantitative information (e.g., $3.5\times$ debt-to-EBITDA). Second, we developed a search-based algorithm to capture relevant information without sending the entire transcript to the LLM. These methods for studying textual corporate policies at scale can be extended to other financial policies such as payout ratios and capital expenditure plans.

# 2 Conceptual Framework

## 2.1 Optimal Leverage Targets

The trade-off theory (Kraus and Litzenberger, 1973; Leland, 1994) predicts that firms have optimal leverage targets determined by the balance of tax shields and distress costs. In static models, the optimum equates the marginal tax benefit of debt with the marginal expected cost of financial distress. Dynamic extensions (Fischer, Heinkel, and Zechner, 1989; Goldstein, Ju, and Leland, 2001; Strebulaev, 2007) preserve the target but introduce adjustment frictions—transaction costs, debt overhang, or information asymmetry—that cause firms to deviate from the optimum and revert only intermittently. Alternative theories deny the existence of targets altogether: under the pecking order (Myers, 1984), leverage is the cumulative residual of financing needs, and under market timing (Baker and Wurgler, 2002), it reflects historical windows of equity issuance. Whether firms have well-defined leverage targets, and whether they actively revert to them, is therefore the central question separating these theories.

## 2.2 Speed of Adjustment Framework

The standard test for leverage targeting estimates the speed of adjustment (SOA) in a partial-adjustment regression:

$$L_{i,t+h} - L_{i,t} = \lambda \left(T_{i,t} - L_{i,t}\right) + \gamma' X_{i,t} + \text{FE} + \varepsilon_{i,t} \tag{1}$$

where $L_{i,t}$ is actual leverage, $T_{i,t}$ is the target, $h$ is the adjustment horizon, and $\lambda \in [0, 1]$ is the SOA—the fraction of the gap between actual and target leverage that the firm closes over $h$ periods. When $\lambda = 1$, the firm fully adjusts within the horizon; when $\lambda = 0$, leverage follows a random walk with no reversion.

Three biases attenuate estimated SOA. First, because $T_{i,t}$ is unobserved, the standard approach estimates it from firm characteristics in a first-stage regression, introducing errors-in-variables bias that attenuates $\hat{\lambda}$ (Fama, 2002; Flannery and Rangan, 2006). Second, adjustment frictions generate inaction regions that mix adjusting and non-adjusting firms, further biasing $\hat{\lambda}$ toward zero (Fischer, Heinkel, and Zechner, 1989; Strebulaev, 2007). Third, the literature has almost exclusively estimated targets in terms of debt-to-assets, while—as we document—managers overwhelmingly target debt-to-EBITDA. Because these two leverage concepts can move in opposite directions (e.g., when EBITDA declines while assets remain stable), this metric mismatch introduces systematic measurement error beyond estimation noise. Together, these biases have produced estimated SOA ranging from 7–18% per year (Fama, 2002) to 30–40% (Flannery and Rangan, 2006; Leary and Roberts, 2005), leaving the field unable to conclude whether firms actively target leverage. Observing disclosed targets resolves all three: measurement error is eliminated, inaction-region bias is mitigated by conditioning on firms that reveal targets, and the metric mismatch disappears.

**H1.** *Rapid adjustment.* Disclosed targets should yield substantially higher SOA than estimated targets, because measurement error is eliminated and the correct leverage metric is used.

We quantify each bias in Section 5.1.

## 2.3 Decomposition, Asymmetric Adjustment, and the Ratchet

Because managers target Debt/EBITDA, adjustment toward target can occur through two distinct channels: changes in the numerator (active debt management) or changes in the denominator (EBITDA growth or decline). This decomposition is economically meaningful. Adjustment through

borrowing or repayment reflects deliberate capital structure policy; adjustment through EBITDA changes may reflect operational performance or passive mean reversion in earnings. The *leverage ratchet* of Admati et al. (2018) makes a sharp prediction about this decomposition: once debt is in place, shareholders resist repayment because it transfers value to creditors. Above-target firms should therefore delever through EBITDA growth while avoiding debt repayment. Below-target firms, facing no ratchet friction on borrowing, should lever up through active debt issuance.

The costs of deviating from target are asymmetric. A firm below target forgoes tax benefits and underutilizes debt capacity, but faces no immediate threat to its credit standing. A firm above target risks covenant violations, credit rating downgrades, and higher borrowing costs. This asymmetry implies stronger incentives to adjust when overleveraged. External pressure reinforces this: analysts, creditors, and rating agencies scrutinize firms most intensely when leverage exceeds stated targets. Public disclosure amplifies the pressure by creating an observable benchmark against which management is held accountable. Demarzo and He (2021) formalize a related commitment problem: the inability to commit to future leverage policy raises credit spreads ex ante, and a publicly stated target can partially address this by imposing reputational costs of deviation. We do not claim that disclosure *causes* faster adjustment—firms that disclose may differ on unobservable dimensions. What we can show is that disclosed targets are informative and that the pattern of adjustment is consistent with asymmetric costs, external pressure, and commitment operating jointly.

These considerations generate two additional testable hypotheses:

**H2.** *Leverage ratchet shapes the leverage adjustment channel.* Above-target firms should not actively repay debt but instead delever through earnings growth, consistent with shareholders resisting the wealth transfer that debt paydown entails. Below-target firms, facing no ratchet constraint, should adjust primarily through active borrowing.

**H3.** *Asymmetric adjustment speed.* Because the costs of exceeding target (downgrade risk, covenant violations, higher spreads) exceed those of falling short (forgone tax benefits), and because analyst and creditor scrutiny intensifies when leverage is elevated, overleveraged firms should

adjust faster than underleveraged firms.

A related descriptive prediction is that firms should be more likely to discuss leverage targets when leverage is elevated and default risk is acute, since external pressure and the value of commitment are greatest in these periods. We examine this in Section 3.3.

# 3 Measurement and Data Construction

## 3.1 Identifying and Characterizing Leverage Targets

We develop a systematic pipeline that transforms unstructured management commentary from earnings conference calls (from Capital IQ) into a structured panel of leverage targets and strategic rationales. The pipeline proceeds in two stages. First, we identify potential leverage discourse using anchor keywords (e.g., *leverage*, *debt-to-EBITDA*, *net debt*, *capital structure*) and capture a context window of surrounding sentences. Second, we pass each context window to a large language model (DeepSeek-V3) that performs three tasks: (i) classifying whether the passage describes a target or merely reports current leverage; (ii) extracting the stated actions (debt, equity, and asset-side adjustments); and (iii) attributing the underlying motivation (financial flexibility, covenant compliance, etc.). The full LLM prompt is provided in Appendix A.

## 3.2 Extracting Leverage Targets from Leverage Mentions

### 3.2.1 Sources of Leverage Target Disclosures

Our dataset on firms' disclosed leverage targets comes from two sources in earnings call transcripts: presentation and Q&A sections. Appendix Table B1 shows that around 2/3 of our disclosures came from presentations, while the remaining 1/3 came from Q&A sections. This suggests that the majority of firms voluntarily disclosed their leverage targets. Decomposing the relationship to

above-target and below-target disclosures, we find that the sources for target disclosures remain largely unchanged. This suggests that whether firms are below or above target does not seem to influence whether firms disclose leverage targets systematically.

#### 3.2.2 Extracted Examples

We provide representative examples of both range and point target disclosures in Appendix A. These examples illustrate the variety of contexts in which managers discuss leverage targets, including balance sheet management, covenant compliance, and capital allocation priorities.

### 3.3 Representativeness

Before describing the targets themselves, we examine the representativeness of our sample relative to the Compustat universe (Table 1). Although disclosers account for only about 25% of Compustat firms, they represent 42.7% of total corporate debt, 35.1% of total assets, and 33.8% of total market capitalization (Panel A). Panel B computes within-year percentile ranks for disclosing firm-quarters. For many characteristics—market-to-book (49.6), R&D intensity (42.9), return volatility (43.8), and leverage (57.0)—disclosers are close to the Compustat median. The main selection is on firm size (65.3), profitability (62.2), and dividend-payer status (60.0), likely driven by the fact that earnings conference calls are more common among larger, more established firms.

Disclosure is not only a cross-sectional characteristic but also a time-varying decision. Panel C of Table 1 reports within-firm regressions among ever-disclosing firms with firm and calendar-quarter fixed effects. Higher Debt/EBITDA ($+7.0$ pp) and lower Z-Score ($-7.0$ pp) significantly predict disclosure, indicating that disclosures concentrate in quarters with elevated leverage and default risk.

# Table 1: Representativeness and Disclosure Timing

*Panel A: Share of Aggregate Corporate Sector (2023 Q4)*

| | Compustat Total | Disclosers | Share |
|---|---|---|---|
| Total Debt ($ bn) | 18,001.0 | 7,695.4 | 42.7% |
| Total Assets ($ bn) | 65,194.0 | 22,896.2 | 35.1% |
| Market Cap ($ bn) | 53,615.6 | 18,107.0 | 33.8% |
| Number of Firms | 3,659 | 909 | 24.8% |

*Panel B: Average Percentile Rank within Compustat (by Year)*

| | Debt/EBITDA Disclosers | | |
|---|---|---|---|
| | Mean Pctile | Min Pctile | Max Pctile |
| Debt/EBITDA | 57.0 | 0.0 | 100.0 |
| Log Assets | 65.3 | 0.8 | 100.0 |
| Market-to-Book | 49.6 | 0.0 | 100.0 |
| Profitability | 62.2 | 0.0 | 100.0 |
| Dividend Payer | 60.0 | 25.0 | 79.9 |
| Z-Score | 61.0 | 0.1 | 100.0 |
| Tangibility | 55.5 | 0.8 | 100.0 |
| R&D/Assets | 42.9 | 0.0 | 99.9 |
| Financial Deficit | 44.3 | 22.0 | 80.5 |
| Return Volatility | 43.8 | 0.0 | 100.0 |

*Panel C: Within-Firm Determinants of Disclosure Timing*

| | All | | Point | | Range | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Z-Score | -0.0007*** | | -0.0007*** | | -0.0000 | |
| | ( 0.0001) | | ( 0.0001) | | ( 0.0001) | |
| Debt/EBITDA | | 0.0007*** | | 0.0007*** | | 0.0001 |
| | | ( 0.0001) | | ( 0.0001) | | ( 0.0000) |
| Log Assets | | 0.0008*** | | 0.0007*** | | 0.0001 |
| | | ( 0.0002) | | ( 0.0002) | | ( 0.0001) |
| Market-to-Book | | -0.0003** | | -0.0004*** | | 0.0001 |
| | | ( 0.0001) | | ( 0.0001) | | ( 0.0001) |
| Tangibility | | -0.0010*** | | -0.0007*** | | -0.0003** |
| | | ( 0.0002) | | ( 0.0002) | | ( 0.0001) |
| Profitability | | 0.0004*** | | 0.0003*** | | 0.0001 |
| | | ( 0.0001) | | ( 0.0001) | | ( 0.0000) |
| Dividend Payer | | -0.0002 | | -0.0002** | | 0.0000 |
| | | ( 0.0001) | | ( 0.0001) | | ( 0.0001) |
| R&D/Assets | | -0.0001 | | 0.0001 | | -0.0001 |
| | | ( 0.0001) | | ( 0.0001) | | ( 0.0001) |
| Financial Deficit | | -0.0001* | | -0.0001* | | -0.0000 |
| | | ( 0.0001) | | ( 0.0001) | | ( 0.0000) |
| Return Volatility | | -0.0000 | | 0.0001* | | -0.0001*** |
| | | ( 0.0000) | | ( 0.0000) | | ( 0.0000) |
| Firm FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 75,339 | 72,945 | 75,339 | 72,945 | 75,339 | 72,945 |
| Within R-squared | 0.002 | 0.006 | 0.003 | 0.007 | 0.000 | 0.001 |

*Notes:* Panel A reports the share of aggregate corporate sector metrics accounted for by disclosing firms as of 2023 Q4. Panel B reports the average within-year percentile rank of Debt/EBITDA disclosing firms for each characteristic; a value of 50 indicates the Compustat median. Panel C reports within-firm regressions of a disclosure indicator on firm characteristics among Debt/EBITDA ever-disclosers. Columns (1)–(2) use all ever-disclosers; (3)–(4) restrict to point-target firms; (5)–(6) to range-target firms. All continuous covariates in Panel C are converted to within-year percentile ranks (0–100); coefficients represent the change in disclosure probability from moving one percentile. All Panel C regressions include firm and calendar-quarter fixed effects. Standard errors clustered by firm and quarter in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table 2: Summary Statistics by Leverage Target Type

*Panel A: Target Distribution*

| Leverage Type | N Obs | N Firms | Mean | Median | P5 | P95 |
|---|---|---|---|---|---|---|
| Debt/EBITDA | 7,960 | 1,183 | 3.05 | 2.75 | 1.00 | 6.00 |
| Debt/Equity | 1,274 | 362 | 0.84 | 0.60 | 0.20 | 2.50 |
| Debt/Asset | 75 | 37 | 0.63 | 0.45 | 0.19 | 1.84 |
| Interest Coverage | 56 | 38 | 2.06 | 2.00 | 0.12 | 4.62 |
| Debt/Value | 19 | 11 | 0.43 | 0.47 | 0.21 | 0.58 |
| TOTAL | 9,384 | 1,350 | | | | |

*Panel B: Point vs. Range Targets (Debt/EBITDA)*

| | N Obs | N Firms | Mean | Median | P5 | P95 |
|---|---|---|---|---|---|---|
| *Point Targets* | | | | | | |
| Debt/EBITDA | 5,306 | 1,075 | 3.06 | 3.00 | 1.00 | 6.00 |
| | N Obs | N Firms | Mean Lower | Mean Upper | P5 Lower | P95 Upper |
| *Range Targets* | | | | | | |
| Debt/EBITDA | 2,654 | 617 | 2.73 | 3.35 | 0.90 | 6.50 |
| Average Range Width: 0.62× | | | Median Range Width: 0.50× | | | |

*Notes:* This table reports summary statistics for disclosed leverage targets by target type. Panel A reports the distribution of target values across all disclosures. N Obs is the number of firm-quarter observations. N Firms is the number of unique firms. Panel B reports statistics for Debt/EBITDA targets separately for point targets (a single value, e.g., "3.0×") and range targets (e.g., "2.0–2.5×"). For point targets, Mean and Median refer to the disclosed value. For range targets, Mean Lower/Upper and P5 Lower/P95 Upper refer to the lower and upper bounds. Range width is the difference between upper and lower bounds.

## 3.4 Summary Statistics of Leverage Targets

Table 2 presents summary statistics for our extracted leverage targets. In total, 1,350 firms disclosed their leverage targets at least once between 2005 and 2024, yielding 9,384 disclosures. The vast majority (7,960, or 85%) specify a debt-to-EBITDA target; we examine the time-series evolution of this dominance in the next subsection.

Panel B distinguishes between point targets (e.g., "3.0×") and range targets (e.g., "2.0–2.5×"). About two-thirds of Debt/EBITDA disclosures (5,306 observations from 1,075 firms) are point targets, with a mean of 3.06× and a median of 3.00×. The remaining third (2,654 observations from 617 firms) are range targets, with mean lower and upper bounds of 2.73× and 3.35×, respectively. The typical range is fairly tight: the median width is 0.50× and the average width is 0.62×. The 5th percentile of lower bounds (0.90×) and 95th percentile of upper bounds (6.50×) span a similar

domain as the point target distribution, suggesting that point and range disclosers target comparable leverage levels.

### 3.5 The Rise of Debt-to-EBITDA as the Dominant Leverage Metric

As Figure 1 shows, debt-to-EBITDA has risen from roughly $30\%$ of disclosed targets in 2005 to over $90\%$ in recent years, displacing debt-to-equity as the dominant metric. Two institutional channels explain this convergence. First, the rise of debt-to-EBITDA targets coincides with the expansion of cash-flow-based lending that relies on debt-to-EBITDA financial covenants. Linking our sample to DealScan covenant data (Appendix Table B4), we find that firms with an active Debt/EBITDA covenant are 14.1 percentage points more likely to state a Debt/EBITDA target ($p < 0.01$), while firms with other financial covenants are 8.2 pp *less* likely—consistent with covenant type shaping the disclosure metric. Second, rating agencies increasingly use debt-to-EBITDA as a core ratio to evaluate creditworthiness. Consistent with this, high-yield firms (below BBB−) are 13.9 pp more likely to disclose a Debt/EBITDA target ($p < 0.01$), reflecting that rating agencies frame upgrade/downgrade thresholds in Debt/EBITDA multiples and leveraged-finance investors evaluate credits in these terms. Both channels reinforce each other: as cash-flow-based lending has expanded and rating agencies have increasingly emphasized Debt/EBITDA thresholds, managers have converged on this metric for communicating their capital structure objectives.[9] Importantly, disclosed targets are not merely restating covenant thresholds: for the subsample with DealScan covenant data, 84% of disclosed targets lie strictly *below* the corresponding covenant threshold, with a mean gap of $-1.17\times$ (Appendix Table B5, Panel A).[10]

The dominance of Debt/EBITDA has a direct implication for interpreting the speed-of-adjustment

[9] Appendix Table B6 reports a broader set of determinants of target type choice. Controlling for industry fixed effects, covenant status, profitability, and return volatility are the strongest predictors of choosing a Debt/EBITDA target. Almost no firm characteristics predict within-firm switching of target type, consistent with the leverage metric being a sticky firm-level choice.

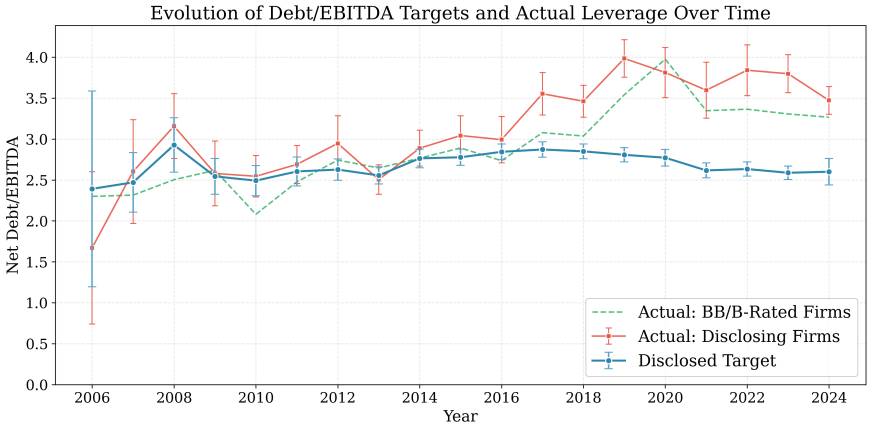
[10] Covenant Debt/EBITDA definitions typically use "adjusted EBITDA" that adds back stock-based compensation, restructuring charges, and other non-recurring items, producing a lower covenant leverage ratio than our Compustat-based measure. Therefore, some firms might appear to have set targets above covenant thresholds.

literature. Prior work estimates leverage targets and adjustment speeds using debt-to-assets, but if managers set policy in terms of debt-to-EBITDA, then debt-to-assets regressions are measuring adjustment toward the wrong target. We return to this point in Section 5.1, where we show that the leverage metric choice accounts for the majority of the apparent slow-adjustment puzzle.

### 3.6 Level and Stability of Debt-to-EBITDA Targets

Figure 2 plots the mean disclosed Debt/EBITDA target over time alongside actual leverage for disclosing firms and for BB/B-rated firms. The median target is $2.75\times$ and the mean is $3.05\times$. Targets are remarkably stable over time, hovering between $2.5\times$ and $3.0\times$ throughout 2005–2024. They track closely the average Debt/EBITDA of BB/B-rated firms (from FISD S&P ratings), consistent with the view that the investment-grade/high-yield boundary serves as an anchor for target-setting. This suggests that firm managers care about credit ratings when setting their target leverage ratios, as suggested also by survey evidence in Graham (2022).

Figure 2: Evolution of Debt/EBITDA Targets

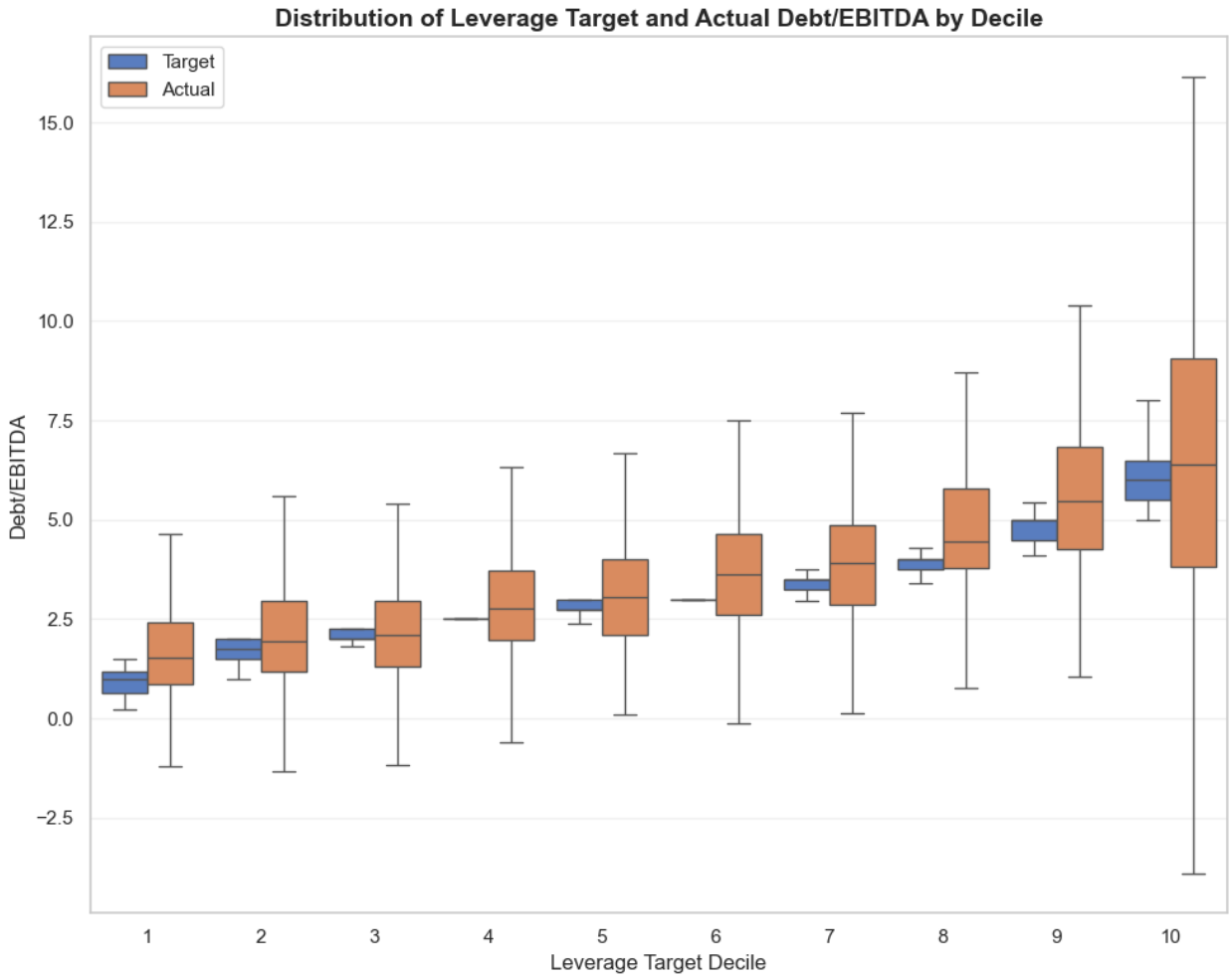



*Notes:* This figure plots the mean disclosed Debt/EBITDA target (blue), the mean actual Debt/EBITDA for firms disclosing at least once in a given year across all their firm-quarters that year (red), and the mean actual Debt/EBITDA for BB/B-rated firms in the Compustat–CRSP universe using S&P ratings from FISD (green dashed). Targets and actual leverage are winsorized at the 1st and 99th percentiles. Error bars denote 95% confidence intervals.

Notably, targets have remained stable despite the fact that actual leverage for disclosing firms has trended upward in recent years. This suggests that firm managers still target a consistent capital

structure even given fluctuations in market conditions. The speed of adjustment analysis in Section 5.1 shows that firms do actively close the gap between actual and target leverage.

Figure 3: Distribution of Leverage Target and Actual Debt/EBITDA by Target Decile




*Notes:* This figure displays side-by-side box plots of disclosed Debt/EBITDA targets (blue) and actual Debt/EBITDA (orange) by leverage target decile.

Figure 3 reinforces this point by displaying the distribution of disclosed targets and actual Debt/EBITDA within each target decile. While targets are tightly concentrated within each decile, actual leverage exhibits substantially greater dispersion—consistent with transitory shocks pushing firms away from their targets. This suggests that much of the cross-sectional variation in observed leverage reflects deviations from targets rather than heterogeneous optima, a pattern we quantify more formally in the variance decomposition below.

# 4 Properties of Leverage Targets

## 4.1 Motivations and Actions Behind Leverage Targets

What motivates managers to set specific leverage targets, and what actions do they plan to take to reach them? Appendix Table B7 categorizes the motivations and actions that managers mention alongside their target disclosures. Panel A reports the primary motivation. The dominant reason is financial flexibility, cited in $62.6\%$ of disclosures. Regulatory or covenant considerations account for another $14.0\%$, consistent with the prevalence of debt-to-EBITDA covenants in loan contracts. Traditional capital structure motives—agency costs ($3.0\%$), market timing ($2.9\%$), pecking order ($0.8\%$), and tax shields ($0.2\%$)—are rarely mentioned as the primary driver, suggesting that managers frame their targets primarily as tools for maintaining balance sheet flexibility rather than as responses to the trade-offs emphasized in textbook theories.

Panel B provides the detailed breakdown of actions discussed. Asset-side actions are mentioned most frequently ($62.5\%$), led by operational improvements ($39.6\%$) and acquisitions ($15.9\%$), suggesting that managers often expect to reach their leverage targets through earnings growth rather than balance sheet restructuring alone. Debt actions follow ($53.4\%$), with reducing debt ($37.0\%$) and increasing debt ($13.7\%$) as the top two subcategories—the latter reflecting firms that disclose targets when taking on leverage for investment. Equity actions are discussed least often ($27.6\%$), dominated by share repurchases ($20.2\%$) and equity issuance ($6.0\%$).

## 4.2 Are Leverage Target Disclosures Binding?

Are leverage targets binding disclosures or simply cheap talk from managers? We examine whether current-period disclosed leverage targets predict next-period actual leverage. We begin by testing whether disclosed targets predict future leverage levels following similar regression

frameworks as in Lemmon, Roberts, and Zender (2008). Our baseline specification is:

$$L_{i,t+k} = \alpha + \beta_1 T_{i,t} + \beta_2 L_{i,t} + \gamma' X_{i,t} + \delta_t + \mu_j + \epsilon_{i,t+k} \tag{2}$$

where $L_{i,t}$ is actual Debt/EBITDA for firm $i$ at time $t$, $T_{i,t}$ is the disclosed target, $X_{i,t}$ is a vector of controls (size, market-to-book, tangibility, profitability, Z-score, R&D intensity, dividend payer indicator, return volatility, and past stock returns), and $\delta_t$ and $\mu_j$ are year×quarter and industry or firm fixed effects. Standard errors are clustered by firm.

Table 3: Levels Specification: Do Disclosed Targets Predict Future Leverage?

| | 1-Quarter | | 4-Quarter | | 8-Quarter | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Target Leverage | 0.266*** | 0.163*** | 0.415*** | 0.293*** | 0.445*** | 0.153** |
| | (0.032) | (0.038) | (0.047) | (0.062) | (0.061) | (0.069) |
| Current Leverage | 0.637*** | 0.509*** | 0.431*** | 0.177*** | 0.358*** | 0.031 |
| | (0.027) | (0.034) | (0.030) | (0.037) | (0.039) | (0.042) |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 5867 | 5629 | 5677 | 5436 | 4853 | 4630 |
| Within R-squared | 0.695 | 0.489 | 0.359 | 0.094 | 0.202 | 0.022 |

*Notes:* This table reports estimates from regressing future leverage (Debt/EBITDA at $t + k$) on disclosed target and current leverage. Odd columns include industry and time fixed effects. Even columns include firm and time fixed effects. All specifications include firm-level controls. Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table 3 presents results from Equation (2). Across 1-quarter, 4-quarter, and 8-quarter ahead leverage regressions, firms' leverage targets strongly predict next period leverage, even when controlling for the current period leverage. This suggests that our targets are long-term targets that managers actually follow as opposed to blindly disclosing.

The magnitude is economically meaningful. Taking the firm fixed effects estimate, a one-unit increase in the disclosed target predicts $0.16$ higher leverage one quarter ahead. Given that the standard deviation of targets is approximately $1.1$, a one-standard-deviation higher target predicts $0.18$ higher future leverage—substantial relative to the standard deviation of actual leverage.

Importantly, the coefficient on current leverage is also positive and significant ($0.51$–$0.64$ across 1-quarter specifications), reflecting the persistence of capital structures. But the target coefficient is significant above and beyond this persistence, indicating that disclosed targets contain information about future leverage not captured by current leverage.

A potential concern is that targets are endogenous: firms may revise targets toward where leverage is already heading, creating a mechanical correlation between targets and future leverage. Three features of our data argue against this interpretation. First, disclosed targets are remarkably stable within firms—the within-firm component accounts for only $29.2\%$ of total target variation (Section 4.4)—inconsistent with frequent target revision in response to expected leverage changes. Second, implied leverage from IBES EBITDA guidance has virtually no within-firm explanatory power for target changes ($R^2 = 0.04$; Section 4.2.1), confirming that targets are not mechanical reflections of expected earnings. Third, the levels regressions control for current leverage, so the target coefficient captures information about future capital structure *beyond* where leverage already stands.

#### 4.2.1 Are Disclosed Targets Mechanical Restatements of EBITDA Guidance?

A natural concern with Debt/EBITDA leverage targets is that they may simply reflect managers computing current debt divided by their EBITDA forecast, rather than an independent capital structure objective. We test this by matching our sample to IBES EBITDA guidance (2,137 firm-quarters, 413 firms) and comparing implied leverage ($\text{Debt}_t/\text{Guided EBITDA}_t$) to disclosed targets (Appendix Figure B6).

If targets were purely mechanical, observations would cluster along the 45-degree line. Instead, the fitted line has a slope of $0.04$ with substantial scatter. In a regression of the disclosed target on implied leverage, pooled OLS yields $\hat{\beta} = 0.30$ with $R^2 = 0.54$, but with firm and year×quarter fixed effects plus controls the coefficient falls to $\hat{\beta} = 0.013$ (SE $= 0.006$, $R^2 = 0.04$): within-firm variation in EBITDA guidance has virtually no explanatory power for target changes. These results

confirm that disclosed targets reflect deliberate capital structure choices, not mechanical EBITDA arithmetic.

### 4.3 What Firm Characteristics Predict Leverage Targets?

We next examine how disclosed leverage targets co-vary with firm characteristics, both to validate our extracted targets and to identify determinants for projecting estimated targets onto non-disclosing firm-quarters.

Appendix Figure B7 sorts firms into deciles of their disclosed target and plots average characteristics within each decile. The patterns mirror cross-sectional regularities documented for actual leverage (Graham and Leary, 2011): profitability and tangibility decline monotonically with higher targets, Z-scores decrease, and return volatility increases. We estimate a LASSO regression of disclosed targets on the full set of firm characteristics (Appendix Figure B8). Profitability is the strongest predictor ($-0.31$), followed by tangibility ($-0.14$) and return volatility ($-0.06$). We use the fitted values from this model as estimated leverage targets for non-disclosing firm-quarters in the measurement error analysis of Section 5.1.

### 4.4 Variance Decomposition

We decompose total variation in leverage measures into between-industry, within-industry (between-firm), and within-firm components, following Lemmon, Roberts, and Zender (2008) (Appendix Table B3). For disclosed targets, $42.9\%$ of variation is between industries, $27.9\%$ is within-industry but between-firm, and only $29.2\%$ is within-firm over time. By contrast, actual Debt/EBITDA has a more even split ($31.6\%$, $34.0\%$, $34.4\%$). The much smaller within-firm share for targets confirms that targets are comparatively stable, with most of the variation in observed leverage reflecting deviations from targets rather than target changes. Appendix Figure B9 plots the standard deviation of each component over time, and Appendix Figures B10–B11 show industry-level distributions.

# 5 Testing Capital Structure Theories

Having established the theoretical predictions in Section 2, we now test them using our panel of disclosed leverage targets. Because we observe the targets that managers themselves specify, we eliminate both the measurement error and the metric mismatch that attenuate conventional SOA estimates (Section 2.2). The tests that follow estimate the speed of adjustment (Section 5.1), decompose the channels through which firms close the leverage gap, and test for asymmetric adjustment above and below target.

## 5.1 Speed of Adjustment

Appendix Table B2 reports summary statistics for the main regression variables. The mean disclosed target is $2.69\times$ while mean actual leverage is $3.52\times$, yielding an average leverage gap of $-0.83$—indicating that the typical firm is overleveraged relative to its stated target.

Because we observe the targets that managers themselves state, we can bypass the first-stage estimation entirely and estimate the gap-closing regression directly:

$$L_{i,t+h} - L_{i,t} = \lambda \left(T_{i,t} - L_{i,t}\right) + \gamma' X_{i,t} + \mu_j + \delta_t + \varepsilon_{i,t} \tag{3}$$

where $T_{i,t}$ is the disclosed target, $\lambda$ measures the fraction of the gap that firms close over horizon $h$, $X_{i,t}$ is the vector of controls, and $\mu_j$ denotes either Fama-French 48 industry or firm fixed effects. All specifications include year$\times$quarter fixed effects $\delta_t$ and cluster standard errors by firm.

Table 4 reports results. For the one-quarter horizon with firm and year$\times$quarter fixed effects, we estimate $\hat{\lambda} = 0.458$ (SE = 0.033). This implies that firms close 45.8% of the gap between actual and target leverage within a single quarter. For the four-quarter horizon, $\hat{\lambda} = 0.767$ (SE = 0.035), implying gap closure of 76.7% within one year.

These estimates are remarkably high compared to prior literature. The direct four-quarter estimate

of 76.7% far exceeds the 7–40% annual speeds documented in previous work (Graham, 2022).

Table 4: Speed of Adjustment Toward Leverage Targets

| | 1-Quarter | | 4-Quarter | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Leverage Gap (Target − Current) | 0.357*** | 0.458*** | 0.561*** | 0.767*** |
| | (0.027) | (0.033) | (0.029) | (0.035) |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Observations | 5,867 | 5,629 | 5,677 | 5,436 |
| $R^2$ | 0.314 | 0.466 | 0.322 | 0.516 |

*Notes:* This table reports speed of adjustment estimates from regressing leverage changes ($\Delta$ Debt/EBITDA from $t$ to $t+k$) on the leverage gap (Target − Current Leverage). The coefficient on Leverage Gap represents the fraction of the gap closed per period; a coefficient of 1 indicates full adjustment. Odd columns include industry (Fama-French 48) and time fixed effects; even columns include firm and time fixed effects. All specifications include firm-level controls (size, market-to-book, tangibility, profitability, z-score, R&D intensity, dividend payer, return volatility, and buy-and-hold return). Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

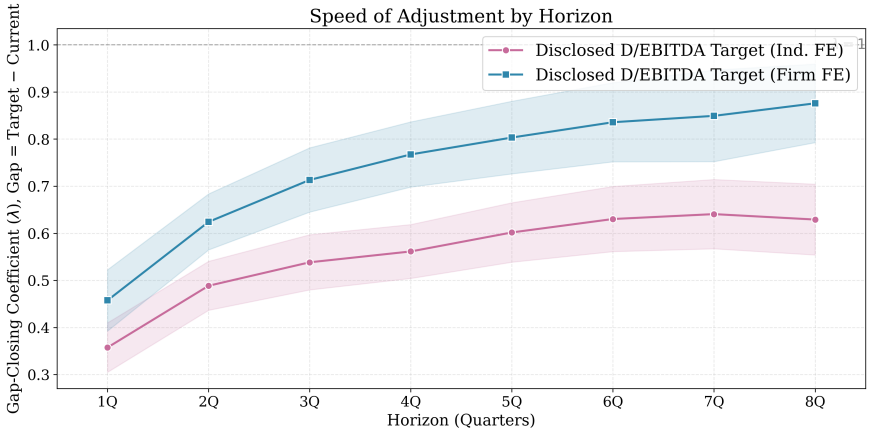
Figure 4 plots the gap-closing coefficient across horizons from one to eight quarters. Panel (a) shows that the speed of adjustment rises monotonically with the horizon, from approximately 36% (industry FE) and 46% (firm FE) at one quarter to over 60% and 85% at eight quarters. The firm FE specification consistently yields higher estimates, as it controls for time-invariant firm heterogeneity in leverage levels. At longer horizons, the firm FE estimate approaches full adjustment ($\lambda = 1$), indicating that firms nearly completely close the gap to their disclosed target within two years. Panel (b) previews the measurement error decomposition of Section 5.1: the four-quarter SOA with disclosed targets (56%) substantially exceeds that with estimated Debt/EBITDA targets (39%), which in turn exceeds estimated Debt/Assets targets—confirming that both metric mismatch and target measurement error contribute to the slow-adjustment puzzle.

### 5.1.1 Point vs. Range Target Disclosures

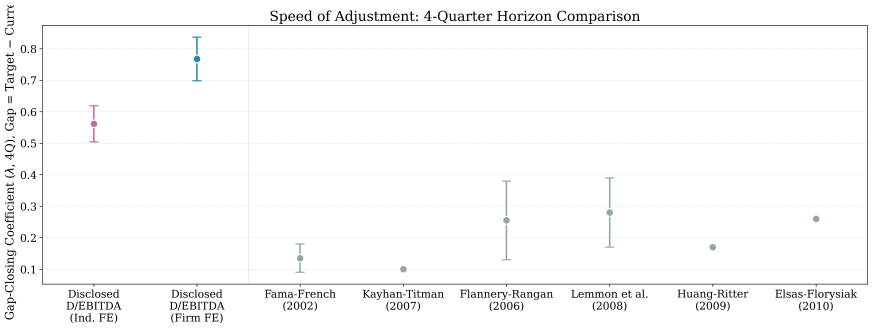
Our sample includes both point target disclosures (e.g., "3.0×") and range disclosures (e.g., "2.5–3.0×"). Appendix Table B8 tests whether these exhibit different adjustment speeds. Point target firms close 38.4% of the gap within one quarter and 60.4% within one year; range target firms close

Figure 4: Speed of Adjustment Toward Leverage Targets

(a) SOA by horizon




(b) Four-quarter horizon comparison




*Notes:* Panel (a) plots the gap-closing coefficient $\lambda$ from Equation (1) across horizons of one to eight quarters using disclosed Debt/EBITDA targets. The two lines correspond to specifications with industry and year×quarter fixed effects (pink) and firm and year×quarter fixed effects (blue). Standard errors are clustered by firm. Shaded areas indicate 95% confidence intervals. Panel (b) compares the four-quarter gap-closing coefficient using our target measures with industry and year×quarter fixed effects and standard errors clustered by firm and literature benchmarks. Error bars indicate 95% confidence intervals.

29.8% quarterly and 46.2% annually. The difference of 9.3–12.9 percentage points ($p < 0.05$) is consistent with range disclosures affording greater capital structure flexibility: a range defines an acceptable band rather than a single point, reducing the urgency to adjust when actual leverage falls near the boundaries. Under a "range-aware" gap definition (Panel B) that sets the gap to zero when actual leverage falls within the disclosed band, the difference narrows further, confirming that range disclosers face a mechanically smaller effective gap and therefore less pressure to adjust.

### 5.1.2 Robustness: EBITDA Smoothing

One concern with using Debt/EBITDA as the leverage measure is that trailing twelve-month (TTM) EBITDA can be volatile: a single bad quarter shifts the denominator by 25%, mechanically moving the leverage ratio away from target and then back as EBITDA mean-reverts. This mechanical channel could inflate the speed of adjustment by creating transitory gaps that "close" without any deliberate capital structure action.

To address this, we re-estimate the gap-closing specification using a 3-year moving average EBITDA as the denominator. The 3-year moving average is the annualized mean of quarterly EBITDA over the trailing twelve quarters, which dampens quarter-to-quarter noise while preserving variation in the firm's underlying earnings capacity. Appendix Figure B12 confirms that smoothing substantially reduces both the time-series volatility and cross-sectional dispersion of the leverage ratio.

Appendix Table B9 reports the results. Using smoothed EBITDA lowers the speed of adjustment, particularly at short horizons: the one-quarter $\hat{\lambda}$ falls from 0.357 to 0.204 with industry and year×quarter fixed effects, and from 0.458 to 0.316 with firm and year×quarter fixed effects. This confirms that a portion of the short-run adjustment reflects mechanical EBITDA mean-reversion rather than active rebalancing. However, the gap narrows at longer horizons—at four quarters, $\hat{\lambda}$ falls only modestly from 0.561 to 0.498 (industry FE), and at eight quarters the estimates converge further (0.629 vs. 0.620). The smoothed estimates remain large, statistically significant, and well above prior literature benchmarks at all horizons, confirming that the rapid adjustment finding is not an artifact of EBITDA volatility.

### 5.1.3 Robustness: Nickell Bias

Because the gap-closing specification in Equation (1) can be rearranged as a dynamic panel regression with firm fixed effects and lagged leverage on the right-hand side, our firm FE estimates are potentially subject to Nickell bias (Nickell, 1981). The within-transformation creates a mechanical

correlation between the demeaned lagged dependent variable and the demeaned error, biasing the coefficient on lagged leverage downward and hence *overstating* the speed of adjustment $\lambda$. The bias is $O(1/T)$, where $T$ is the number of time periods per firm. With an average of approximately seven disclosures per firm, the bias is not negligible a priori.

Three features of our setting mitigate this concern. First, and most importantly, the industry fixed effects specifications—which are not subject to Nickell bias—already yield economically large and statistically significant adjustment speeds ($\lambda = 0.357$ at one quarter, $0.561$ at four quarters). These estimates alone overturn the slow-adjustment puzzle, and the Nickell bias concern applies only to the incremental difference between industry and firm FE estimates. Second, the inclusion of the disclosed target $T_{i,t}$ as an additional regressor absorbs a substantial share of the variation in future leverage that would otherwise load on lagged leverage, reducing the effective persistence of the lagged dependent variable and hence the magnitude of the bias. Third, at multi-quarter horizons ($k > 1$), actual leverage $L_{i,t}$ is not the immediate lag but a $k$-period lag of the dependent variable $L_{i,t+k}$, further attenuating the within-group correlation that drives the bias. Our industry FE estimates therefore provide a lower bound on the true speed of adjustment (free of Nickell bias but not controlling for firm heterogeneity), while firm FE estimates provide an upper bound (controlling for heterogeneity but subject to some upward bias). The true $\lambda$ lies between them.

#### 5.1.4 Interpretation: Measurement Error versus Selection

What explains the dramatic difference between our estimates and prior work? Two leading hypotheses are measurement error (noisy estimated targets attenuate $\lambda$ through errors-in-variables bias) and selection (disclosing firms may be fundamentally different from non-disclosers). We conduct several comparisons to distinguish them.

First, we estimate traditional regression-based target proxies for the same sample of disclosing firms using LASSO (Panel A of Table 5). The disclosed and estimated Debt/EBITDA targets have a correlation of only 0.42, and estimated targets are systematically higher (mean $3.41\times$ vs. $3.07\times$).

Table 5: Sources of the Speed-of-Adjustment Puzzle

*Panel A: Disclosed vs. Estimated Targets*

| | Disclosed Target | | Estimated Target |
|---|---|---|---|
| Mean | 3.07x | | 3.41x |
| Median | 2.80x | | 3.44x |
| P5 | 1.00x | | 1.02x |
| P95 | 6.00x | | 5.78x |
| Difference (Mean) | | −0.34x ($p$ <0.001) | |
| Correlation | | 0.422 | |
| N | | 7,604 | |

*Panel B: Speed of Adjustment Comparison*

| | OLS | GMM/IV | Fixed Effects | Other |
|---|---|---|---|---|
| *Literature Benchmarks* | | | | |
| Fama & French (2002) | 9–18% | — | — | — |
| Kayhan & Titman (2007) | 10% | — | — | — |
| Flannery & Rangan (2006) | 13% | 34% | 38% | — |
| Lemmon et al. (2008) | 17% | 25% | 39% | — |
| Huang & Ritter (2009) | — | 17% | — | — |
| Elsas & Florysiak (2010) | — | — | — | 26% |
| Iliev & Welch (2010) | — | — | — | <0% |
| *This Paper* | | | | |
| Disclosed D/EBITDA targets (4Q) | 56.1% | — | 76.7% | — |

*Notes:* This table documents the sources of the speed-of-adjustment puzzle. Panel A compares disclosed Debt/EBITDA targets with estimated targets from firm characteristics (LASSO). The correlation of 0.422 between disclosed and estimated targets implies substantial measurement error. Panel B compares speed-of-adjustment (SOA) estimates from the literature with those from this paper. SOA is the fraction of the gap between current and target leverage that is closed per year. Literature benchmarks use Debt/Assets and estimate targets from firm characteristics, yielding SOA of 7–39%. Using disclosed Debt/EBITDA targets yields dramatically faster adjustment (56.1–76.7%). The gap reflects two channels: (1) the leverage metric—managers target Debt/EBITDA, not Debt/Assets—and (2) target measurement error in estimated proxies. Table 6 decomposes the relative contribution of each channel.

Panel B of Table 5 places our disclosed-target SOA estimates alongside literature benchmarks, which use estimated Debt/Assets targets and report annual adjustment speeds of 7–39%.

To decompose what drives the gap between our estimates and prior work, we compare adjustment speeds using estimated Debt/EBITDA targets for the same disclosing firms (Table 6; Appendix Table **??** reports the full regression results). At the four-quarter horizon, disclosing firm-quarters close 38.9% of the gap toward estimated Debt/EBITDA targets with industry and year×quarter fixed effects, and 59.8% with firm and year×quarter fixed effects. These estimates are substantially higher than the 7–39% range in prior work—which uses estimated Debt/Assets targets—but still fall short of the 56.1% and 76.7% we obtain with disclosed targets. The gap between our main estimates and those

from estimated Debt/EBITDA targets (17.2 pp with industry FE, 16.9 pp with firm FE) captures the contribution of target measurement error. The remaining gap between literature benchmarks and estimated Debt/EBITDA targets captures the leverage metric channel. The rapid adjustment we document thus reflects two forces: (1) managers target Debt/EBITDA, not the Debt/Assets ratio used in prior work, and (2) disclosed targets eliminate the measurement error inherent in estimated proxies.

Table 6: Speed of Adjustment: Disclosing vs. Non-Disclosing Firms (Estimated Targets)

| | 1-Quarter | | | | 4-Quarter | | | |
|---|---|---|---|---|---|---|---|---|
| | Disclosers | | Non-Disclosers | | Disclosers | | Non-Disclosers | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Estimated Gap (Debt/EBITDA) | 0.143*** | 0.216*** | 0.149*** | 0.280*** | 0.389*** | 0.598*** | 0.389*** | 0.714*** |
| | (0.006) | (0.008) | (0.003) | (0.005) | (0.013) | (0.014) | (0.007) | (0.008) |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 53158 | 53156 | 147044 | 146351 | 48669 | 48665 | 119421 | 118643 |
| Within R-squared | 0.082 | 0.121 | 0.071 | 0.141 | 0.182 | 0.287 | 0.179 | 0.342 |

*Notes:* This table compares speed of adjustment between disclosing firms (columns 1–2, 5–6) and non-disclosing firms (columns 3–4, 7–8), both using estimated Debt/EBITDA targets from firm characteristics. This isolates the selection effect: whether firms that choose to disclose targets adjust faster, holding the target measurement method constant. Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table 6 also allows us to test for selection. Using the same estimated Debt/EBITDA targets, disclosing and non-disclosing firm-quarters show similar adjustment speeds with industry FE: at the four-quarter horizon, the gap-closing coefficients are $0.389$ vs. $0.389$ (difference $= 0.000$, $p = 1.00$). With firm FE the difference is larger ($0.598$ vs. $0.714$), but disclosers adjust *more slowly*, not faster—the opposite of what a selection story would predict. At the firm level, we compare firms that ever disclose versus firms that never disclose and find the same pattern: ever-disclosers show slightly *slower* adjustment to estimated targets than never-disclosers (29.1% vs. 42.5% annually). Both comparisons are consistent with selection on target precision rather than targeting intensity—disclosers may have targets that are harder to estimate from characteristics, hence greater value to disclosure. Crucially, neither comparison suggests that disclosers are inherently faster adjusters, ruling out selection as an explanation for the high SOA we estimate with disclosed targets.

In summary, the evidence strongly supports a measurement interpretation. The slow adjustment puzzle reflects two forces: the use of Debt/Assets rather than the Debt/EBITDA metric that managers actually target, and measurement error in estimated target proxies. When we observe actual stated targets denominated in the metric managers use, firms adjust rapidly.

A remaining concern is that the fast SOA reflects selection on disclosure timing rather than active capital structure management. Section 3.3 shows that firms are more likely to disclose targets when leverage is temporarily elevated, raising the possibility that our sample overrepresents firm-quarters that will naturally mean-revert. Three pieces of evidence mitigate this concern. First, the SOA regressions control for current leverage, so the disclosed target's predictive power is incremental to the level of leverage at the time of disclosure. Second, the discloser versus non-discloser comparison shows that disclosers adjust *more slowly*, not faster, toward estimated targets—the opposite of what a timing-induced selection story would predict. Third, the smoothed EBITDA robustness check (Appendix Table B9) dampens mechanical denominator mean reversion and still finds economically large adjustment speeds, particularly at longer horizons.

A related concern is that firms disclose Debt/EBITDA targets simply because their actual leverage is close to covenant thresholds, so that the "target" is effectively the covenant itself. We address this in Appendix Table B5. Panel B re-estimates the gap-closing regression separately for firms with and without Debt/EBITDA covenants. Firms without any Debt/EBITDA covenant still close 52.7% (industry FE) to 73.3% (firm FE) of the leverage gap within a year—comparable to the full-sample estimates. Panel C adds an indicator for having a Debt/EBITDA covenant as a control in the main SOA regression; the leverage gap coefficient is unchanged and the covenant indicator is insignificant in all specifications. Together with the evidence in Panel A that disclosed targets are on average $1.17\times$ below covenant thresholds, these results rule out the possibility that our findings are driven by covenant proximity.

## 5.2 Asymmetric Adjustment

### 5.2.1 Decomposing Adjustment: Debt versus EBITDA

The leverage ratchet (Admati et al., 2018) predicts that shareholders resist *debt repayment* because it transfers value to creditors, implying that any deleveraging should occur through earnings growth rather than active debt paydown. Because our leverage measure is the ratio Debt/EBITDA, we can test this prediction directly by decomposing adjustment into changes in the numerator (active debt management) and the denominator (EBITDA growth or decline).

We decompose leverage changes using the log identity:

$$\Delta \log\left(\frac{N}{D}\right) = \underbrace{[\log N_{t+h} - \log N_t]}_{\text{Debt contribution}} + \underbrace{[\log D_t - \log D_{t+h}]}_{\text{EBITDA contribution}} \tag{4}$$

where $N$ is net debt and $D$ is trailing twelve-month EBITDA. This decomposition is exact by construction—the two components sum to the total log leverage change with no residual or cross-term. The sample is restricted to observations with positive net debt and positive EBITDA in both the current and forward periods.[11]

We regress each component on the leverage gap (Target − Actual, in levels):

$$\Delta \log N_{t\to t+h} = \alpha + \beta_1 \cdot \text{Gap}_t + \gamma' X_t + \varepsilon_t \tag{5}$$

$$-\Delta \log D_{t\to t+h} = \alpha + \beta_2 \cdot \text{Gap}_t + \gamma' X_t + \varepsilon_t \tag{6}$$

By the exact additivity of the log decomposition, $\beta_1 + \beta_2$ equals the total coefficient from regressing $\Delta \log L$ on the gap. The coefficients $\beta_1$ and $\beta_2$ are semi-elasticities: a one-turn increase in the leverage gap produces a $\beta$-log-point change in the respective component.

Table 7 and Figure 5 present results. The decomposition reveals a striking asymmetry in the

[11] This restriction drops approximately 5% of observations. Firms with negative EBITDA have undefined Debt/EBITDA leverage, so these observations are naturally excluded.

Table 7: Decomposition of Leverage Adjustment: Debt vs. EBITDA Contributions

*Panel A: Full Sample*

| | 1-Quarter Horizon | | 4-Quarter Horizon | |
|---|---|---|---|---|
| | $\Delta \log(\text{Debt})$ | $-\Delta \log(\text{EBITDA})$ | $\Delta \log(\text{Debt})$ | $-\Delta \log(\text{EBITDA})$ |
| | (1) | (2) | (3) | (4) |
| Leverage Gap | 0.018*** | 0.017*** | 0.047*** | 0.049*** |
| | ( 0.002) | ( 0.002) | ( 0.005) | ( 0.005) |
| Share of adjustment | 52% | 48% | 49% | 51% |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| N | 5,704 | 5,704 | 5,464 | 5,464 |
| $R^2$ | 0.030 | 0.080 | 0.069 | 0.100 |

*Panel B: Below Target (Gap $>$ 0)*

| | 1-Quarter Horizon | | 4-Quarter Horizon | |
|---|---|---|---|---|
| | $\Delta \log(\text{Debt})$ | $-\Delta \log(\text{EBITDA})$ | $\Delta \log(\text{Debt})$ | $-\Delta \log(\text{EBITDA})$ |
| | (1) | (2) | (3) | (4) |
| Leverage Gap | 0.058*** | 0.004 | 0.201*** | -0.004 |
| | ( 0.012) | ( 0.005) | ( 0.025) | ( 0.013) |
| Share of adjustment | 94% | 6% | 102% | 2% |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| N | 1,779 | 1,779 | 1,801 | 1,801 |
| $R^2$ | 0.028 | 0.080 | 0.082 | 0.051 |

*Panel C: Above Target (Gap $<$ 0)*

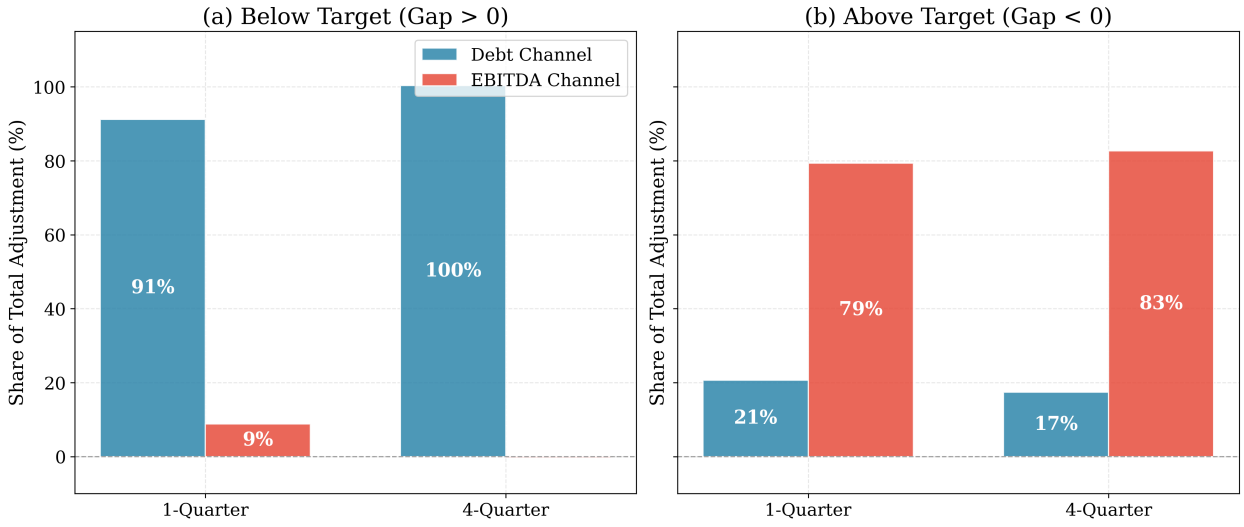
| | 1-Quarter Horizon | | 4-Quarter Horizon | |
|---|---|---|---|---|
| | $\Delta \log(\text{Debt})$ | $-\Delta \log(\text{EBITDA})$ | $\Delta \log(\text{Debt})$ | $-\Delta \log(\text{EBITDA})$ |
| | (1) | (2) | (3) | (4) |
| Leverage Gap | 0.007*** | 0.020*** | 0.014*** | 0.063*** |
| | ( 0.002) | ( 0.003) | ( 0.004) | ( 0.006) |
| Share of adjustment | 27% | 73% | 18% | 82% |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| N | 3,920 | 3,920 | 3,658 | 3,658 |
| $R^2$ | 0.011 | 0.078 | 0.023 | 0.125 |

*Notes:* This table decomposes the speed of adjustment into debt and EBITDA contributions using a log decomposition: $\Delta \log(\text{Debt/EBITDA}) = \Delta \log(\text{Debt}) - \Delta \log(\text{EBITDA})$. The dependent variable in columns (1) and (3) is $\Delta \log(\text{Debt})$, where Debt is net debt. The dependent variable in columns (2) and (4) is $-\Delta \log(\text{EBITDA})$, where EBITDA is trailing 12-month. The two components are exactly additive by construction. The sample is restricted to observations with positive net debt and positive EBITDA in both current and forward periods. The leverage gap is Target − Actual (in levels). Controls include log assets, market-to-book, tangibility, profitability, R&D/sales, dividend payer, return volatility, and buy-and-hold return. All specifications include Fama-French 48 industry and year×quarter fixed effects. Standard errors clustered by firm in parentheses. ***, **, * denote significance at the 1%, 5%, 10% levels.

*mechanism* of adjustment depending on a firm's position relative to target:

*Below-target firms adjust through debt.* Among firms with leverage below their target (gap $>$ 0), adjustment occurs almost entirely through net debt increases (Figure 5, panel a). At the four-quarter

Figure 5: Share of Leverage Adjustment by Channel: Below vs Above Target




*Notes:* This figure plots the share of total leverage adjustment attributable to debt changes versus EBITDA changes, estimated separately for below-target firms (panel a) and above-target firms (panel b), at 1-quarter and 4-quarter horizons. Shares are computed from the log decomposition: $\Delta \log(N/D) = \Delta \log N + [\log D_t - \log D_{t+h}]$, where $N$ is net debt and $D$ is trailing EBITDA. Below-target firms adjust almost entirely through debt increases; above-target firms adjust almost entirely through EBITDA growth. All regressions include Fama-French 48 industry and year×quarter fixed effects, with standard errors clustered by firm.

horizon, $\hat{\beta}_1 = 0.201$ ($p < 0.001$) while $\hat{\beta}_2 = -0.004$ ($p = 0.77$)—debt accounts for $102\%$ of total adjustment, with EBITDA contributing nothing. A one-turn gap predicts a 20% increase in net debt over the subsequent year. This pattern indicates active leverage management: firms below target borrow to close the gap.

*Above-target firms adjust through EBITDA.* Among firms above their target (gap $< 0$), the pattern reverses (Figure 5, panel b). At the four-quarter horizon, $\hat{\beta}_1 = 0.014$ ($p < 0.01$) while $\hat{\beta}_2 = 0.063$ ($p < 0.001$)—EBITDA growth accounts for $82\%$ of total adjustment, with debt contributing only $18\%$. Above-target firms do not actively repay debt; instead, they rely on EBITDA growth to bring the leverage ratio down.

### 5.2.2 Asymmetric Adjustment Speed

The preceding decomposition shows that above- and below-target firms adjust through entirely different channels—debt for underleveraged firms, EBITDA for overleveraged firms. Does this

channel asymmetry translate into differences in overall adjustment speed? We test this by allowing separate gap-closing coefficients for below- and above-target firms:

$$\Delta L_{i,t} = \lambda_1 (T - L)_t \times \mathbf{1}_{L<T} + \lambda_2 (T - L)_t \times \mathbf{1}_{L>T} + \gamma' X + \text{FE} + \epsilon \tag{7}$$

Table 8: Asymmetric Adjustment Toward Leverage Targets

| | 1-Quarter | | 4-Quarter | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Gap × Below Target | 0.067* | 0.197*** | 0.200*** | 0.416*** |
| | (0.036) | (0.048) | (0.054) | (0.070) |
| Gap × Above Target | 0.407*** | 0.500*** | 0.610*** | 0.824*** |
| | (0.029) | (0.034) | (0.032) | (0.036) |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| $p$-value: Below = Above | 0.000 | 0.000 | 0.000 | 0.000 |
| Observations | 5,939 | 5,939 | 5,746 | 5,746 |
| $R^2$ | 0.320 | 0.362 | 0.297 | 0.388 |

*Notes:* This table tests for asymmetric adjustment toward disclosed leverage targets. The dependent variable is Δ Debt/EBITDA from *t* to *t+k*. Gap × Below Target equals the leverage gap (Target − Current) when the firm is below its target (gap > 0), and zero otherwise. Gap × Above Target equals the gap when the firm is above its target (gap < 0), and zero otherwise. Odd columns include industry (Fama-French 48) and time fixed effects; even columns include firm and time fixed effects. The *p*-value row tests equality of the two coefficients. All specifications include firm-level controls (size, market-to-book, tangibility, and profitability). Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table 8 presents results. The asymmetry is robust across specifications. With firm fixed effects, we estimate $\hat{\lambda}_1 = 0.197$ (SE $= 0.048$) for below-target firms and $\hat{\lambda}_2 = 0.500$ (SE $= 0.034$) for above-target firms at the one-quarter horizon—a ratio of approximately $2.5\times$ ($p < 0.01$). The asymmetry grows at the four-quarter horizon, where $\hat{\lambda}_1 = 0.416$ (SE $= 0.070$) and $\hat{\lambda}_2 = 0.824$ (SE $= 0.036$). Industry fixed effects specifications yield qualitatively identical patterns, with above-target firms adjusting significantly faster at both horizons.

Because the Debt/EBITDA ratio has a heavy right tail—the 99th percentile of actual leverage is $18.5\times$ while targets rarely exceed $6\times$—one concern is that extreme-gap observations drive the result. Appendix Table B12 presents three robustness checks. Panel A tightens winsorization from

P1/P99 to P2.5/P97.5, which clips actual Debt/EBITDA at approximately $[0.5, 11.3]$. Under this more conservative treatment, the asymmetry remains statistically significant at both the one-quarter ($p = 0.025$) and four-quarter ($p < 0.001$) horizons. Panel B caps the absolute leverage gap at 5 and 3 turns—limiting the regression influence of extreme observations without dropping them. The asymmetry is preserved and in fact *strengthened* by capping, confirming that the result is not an artifact of outlier gaps. Panel C uses a range-aware gap for range disclosers, where the gap equals zero when actual leverage falls within the disclosed band. The asymmetry remains highly significant at both horizons.

#### 5.2.3 Interpretation

The preceding two subsections establish that: (1) above-target firms delever almost entirely through EBITDA growth, not debt repayment, while below-target firms lever up through active borrowing; and (2) this channel asymmetry produces $2.5\times$ faster adjustment for overleveraged firms.

The ratchet governs the *channel*. Above-target firms avoid precisely the action—debt repayment—that would transfer value from shareholders to creditors, exactly as Admati et al. (2018) predict ($82\%$ of above-target adjustment occurs through EBITDA growth at the four-quarter horizon). Below-target firms, facing no ratchet constraint, adjust through active borrowing.

Asymmetric costs and external pressure govern the *speed*. Exceeding a leverage target exposes firms to downgrade risk, covenant violations, and higher borrowing costs; falling short carries no comparable penalty. Analysts and creditors scrutinize overleveraged firms more intensely, and the public nature of a stated target amplifies this scrutiny. The asymmetry *widens* from the one-quarter to the four-quarter horizon ($82.4\%$ vs. $41.6\%$), consistent with cumulative pressure from repeated analyst questioning and credit-market monitoring. The within-firm evidence on disclosure timing (Section 3.3) confirms this pattern: firms discuss targets precisely when leverage is elevated and default risk is high—when the costs of deviation are greatest.

In sum, the ratchet, asymmetric costs of deviation, and external pressure are complementary

forces. The ratchet constrains the channel of adjustment; the asymmetric consequences of being above versus below target, reinforced by analyst and creditor scrutiny, drive the speed.

# 6 Conclusion

This paper takes a direct approach to the capital structure debate by assembling a large-scale dataset of firms' explicit leverage targets from earnings conference calls. Our dataset of $9{,}384$ disclosures from $1{,}350$ firms between 2005 and 2024—covering approximately $43\%$ of U.S. corporate debt—reveals how managers actually conceptualize and manage their capital structures.

Several descriptive findings reframe how we should think about leverage. Firms overwhelmingly target debt-to-EBITDA ($85\%$ of disclosures), not the debt-to-assets ratio standard in the academic literature. This is because firms increasingly rely on cash-flow-based debt, including cash-flow-based covenants, as well as credit agencies' focus on Debt/EBITDA as a core ratio for ratings. Targets cluster near $3\times$—the investment-grade/high-yield boundary—and are remarkably stable over time, with the majority of variation occurring between industries and between firms rather than within firms over time.

Our analysis yields two main implications for capital structure theory. First, firms adjust rapidly to their stated leverage targets, closing $56$–$77\%$ of the gap within a year—far above the $7$–$39\%$ range in prior work. The rapid, deliberate adjustment toward stable cash-flow-based leverage targets provides strong support for trade-off theory: firms behave as if they have well-defined leverage optima and actively revert to them, inconsistent with both the pecking order's prediction of no target and market timing's prediction that leverage drifts with equity valuations.

Second, a decomposition of leverage changes reveals that above-target firms delever almost entirely through EBITDA growth, not debt repayment—exactly as the leverage ratchet of Admati et al. (2018) predicts—while below-target firms lever up through active borrowing. This channel asymmetry produces $2.5\times$ faster adjustment for overleveraged firms. The speed asymmetry reflects

asymmetric costs of deviation: exceeding target risks downgrades and covenant violations, while falling short forgoes tax benefits but carries no immediate penalty. Analyst and creditor scrutiny, amplified by the public nature of the stated target, reinforces this incentive.

These results carry implications for both research and practice. For research, capital structure tests should adopt cash-flow-based leverage measures—debt-to-EBITDA rather than debt-to-assets—to align with the metric firms actually target. The asymmetric costs of deviating from target, combined with the ratchet's constraint on the adjustment channel, should inform structural models of leverage dynamics. For practice, disclosed leverage targets predict future leverage and firms actively adjust toward them, especially when overleveraged—making these disclosures informative signals for creditors, analysts, and rating agencies assessing capital structure risk.

# References


Admati, Anat R., Peter M. Demarzo, Martin F. Hellwig, and Paul Pfleiderer, "The Leverage Ratchet Effect," *The Journal of Finance*, 73 (2018), 145–198.

Baker, Malcolm and Jeffrey Wurgler, "Market Timing and Capital Structure," *The Journal of Finance*, 57 (2002), 1–32.

Byoun, Soku, "How and When Do Firms Adjust Their Capital Structures toward Targets?" *The Journal of Finance*, 63 (2008), 3069–3096.

Demarzo, Peter M. and Zhiguo He, "Leverage Dynamics without Commitment," *The Journal of Finance*, 76 (2021), 1195–1250.

Fama, Eugene F, "Testing Trade-Off and Pecking Order Predictions about Dividends and Debt," *The Review of Financial Studies*, 15 (2002).

Fischer, Edwin, Robert Heinkel, and Josef Zechner, "Dynamic Capital Structure Choice: Theory and Tests," *The Journal of Finance*, 44 (1989).

Flannery, Mark J and Kasturi P Rangan, "Partial adjustment toward target capital structures," *Journal of Financial Economics*, (2006).

Goldstein, Robert, Nengjiu Ju, and Hayne Leland, "An EBIT-Based Model of Dynamic Capital Structure," *The Journal of Business*, 74 (2001), 483–512.

Gormsen, Niels Joachim and Kilian Huber, "Firms' Perceived Cost of Capital," Technical Report w32611, National Bureau of Economic Research, Cambridge, MA (2024), doi:10.3386/w32611, URL http://www.nber.org/papers/w32611.pdf.

Gormsen, Niels Joachim and Kilian Huber, "Corporate Discount Rates," *American Economic Review*, 115 (2025), 2001–2049.

Graham, John R., "Presidential Address: Corporate Finance and Reality," *The Journal of Finance*, 77 (2022), 1975–2049, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/jofi.13161.

Graham, John R and Campbell R Harvey, "The theory and practice of corporate "nance: evidence from the "eld," *Journal of Financial Economics*, (2001).

Graham, John R. and Mark T. Leary, "A Review of Empirical Capital Structure Research and Directions for the Future," *Annual Review of Financial Economics*, 3 (2011), 309–345.

Graham, John R., Mark T. Leary, and Michael R. Roberts, "A century of capital structure: The leveraging of corporate America," *Journal of Financial Economics*, 118 (2015), 658–683.

Hassan, Tarek A., Stephan Hollander, Aakash Kalyani, Laurence Van Lent, Markus Schwedeler, and Ahmed Tahoun, "Text as Data in Economic Analysis," *Journal of Economic Perspectives*, 39 (2025), 193–220.

Hassan, Tarek A, Stephan Hollander, Laurence Van Lent, and Ahmed Tahoun, "Firm-Level Political Risk: Measurement and Effects*," *The Quarterly Journal of Economics*, 134 (2019), 2135–2202.

Jha, Manish, Jialin Qian, Michael Weber, and Baozhong Yang, "ChatGPT and Corporate Policies," Technical Report w32161, National Bureau of Economic Research, Cambridge, MA (2024), doi: 10.3386/w32161, URL http://www.nber.org/papers/w32161.pdf.

Kalyani, Aakash, Nicholas Bloom, Marcela Carvalho, Tarek Hassan, Josh Lerner, and Ahmed Tahoun, "The Diffusion of New Technologies," *QUARTERLY JOURNAL OF ECONOMICS*, (2025).

Kisgen, Darren J., "Credit Ratings and Capital Structure," *The Journal of Finance*, 61 (2006), 1035–1072.

Kraus, Alan and Robert H. Litzenberger, "A State-Preference Model of Optimal Financial Leverage," *The Journal of Finance*, 28 (1973), 911.

Leary, Mark T. and Michael R. Roberts, "Do Firms Rebalance Their Capital Structures?" *The Journal of Finance*, 60 (2005), 2575–2619.

Leland, Hayne E., "Corporate Debt Value, Bond Covenants, and Optimal Capital Structure," *The Journal of Finance*, 49 (1994), 1213–1252.

Lemmon, Michael L., Michael R. Roberts, and Jaime F. Zender, "Back to the Beginning: Persistence and the Cross-Section of Corporate Capital Structure," *The Journal of Finance*, 63 (2008), 1575–1608.

Lian, Chen and Yueran Ma, "Anatomy of Corporate Borrowing Constraints*," *The Quarterly Journal of Economics*, 136 (2021), 229–291.

Loughran, Tim and Bill Mcdonald, "Textual Analysis in Accounting and Finance: A Survey," *Journal of Accounting Research*, 54 (2016), 1187–1230.

Loughran, Tim and Bill McDonald, "Textual Analysis in Finance," *Annual Review of Financial Economics*, 12 (2020), 357–375.

Modigliani, Franco and Merton Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," *The American Economic Review*, (1958).

Myers, Stewart C., "The Capital Structure Puzzle," *The Journal of Finance*, 39 (1984), 574–592.

Nickell, Stephen, "Biases in Dynamic Models with Fixed Effects," *Econometrica*, 49 (1981), 1417.

Sautner, Zacharias, Laurence van Lent, Grigory Vilkov, and Ruishen Zhang, "Firm-level Climate Change Exposure," (2020).

Strebulaev, Ilya A., "Do Tests of Capital Structure Theory Mean What They Say?" *The Journal of Finance*, 62 (2007), 1747–1787.

# Online Appendix

## Appendix A: Data Appendix

### Extraction Prompt

The following prompt is used with DeepSeek-V3 to extract leverage target information from earnings call transcripts. Each leverage-related passage identified by the keyword filter is passed to the model with this prompt.

```
Analyze the following text excerpt that contains a mention of
leverage-related terms. Extract ALL of the following information:

PART 1: Basic Leverage Information
1. Leverage Target Variable: What specific leverage metric is
   being discussed? (e.g., Net Debt/EBITDA, Total Debt/Equity).
2. Target Number: What is the numerical target or current value
   mentioned? Extract the specific number with its unit.
3. Reasoning: What is the reasoning or context behind this
   leverage discussion? Summarize in 1-2 sentences.
4. Statement Type: Classify into "simple_description",
   "description_with_analysis", or "target_setting".

PART 2: Leverage Adjustment Actions
Identify HOW the company is adjusting or plans to adjust their
leverage. Categorize actions into:
- Debt Actions: Increasing, reducing, or restructuring debt.
- Equity Actions: Reducing equity (buybacks), increasing
```

```
  equity (offerings), or organic growth.
- Asset Actions: Selling assets (divestitures), acquiring
  assets (M&A), or operational improvements.

PART 3: Motivation Analysis (Multi-label)
1. Tax Shield: Tax benefits, interest deductions, tax rates.
2. Information Asymmetry: Avoiding dilution, signaling firm
   quality, maintaining control.
3. Financial Flexibility: Maintaining optionality, headroom,
   dry powder.
4. Agency Cost / Governance: Using debt as discipline, free
   cash flow management.
5. Market Timing: Favorable market conditions, low interest
   rates, pricing windows.
6. Regulatory / Covenant: Compliance, rating agency
   considerations, covenant maintenance.

OUTPUT FORMAT: Provide analysis in strictly valid JSON format.
```

**Representative Extraction Examples**

Below we provide representative examples of leverage target disclosures from earnings calls, illustrating both range and point targets.

**Range targets.**

- **Coca-Cola (Feb 13, 2024)** [actual Debt/EBITDA: 1.7x]

  *"Our balance sheet remains strong, and our net debt leverage of 1.7x EBITDA is below our targeted range of **2 to 2.5x**."*

- **Marriott (May 4, 2022)** [actual Debt/EBITDA: 3.8x]

  *"With leverage close to our target ratio of between **3x and 3.5x** adjusted net debt to adjusted EBITDA, we're resuming our dividend at $0.30 a share in the second quarter, the first dividend in 2 years."*

- **Hershey (Apr 26, 2018)** [actual Debt/EBITDA: 2.15x]

  *"Bonds, principal amounts and maturities are aligned to rapidly delever the company consistent with our targeted capital structure, maintaining a **1.5x to 2x** debt-to-EBITDA ratio. Even with this additional debt, we've maintained our strong A1 and A debt ratings."*

- **CDW (Nov 2, 2022)** [actual Debt/EBITDA: 3.0x]

  *"We have the right capital structure in place with a targeted leverage ratio of **2.5 to 3x**. We ended the third quarter at 2.7x, down from 3.4x at the end of 2021, demonstrating strong growth in the business and excellent cash generation."*

**Point targets.**

- **Home Depot (Nov 13, 2018)** [actual Debt/EBITDA: 1.4x]

  *"In the fourth quarter, we intend to replace $1.15 billion of senior notes that came due in September and we may raise additional long-term indebtedness, which will take us closer to our targeted adjusted debt to EBITDA ratio of **2x**."*

- **Comcast (Apr 27, 2023)** [actual Debt/EBITDA: 2.6x]

  *"Second is to protect our balance sheet position with targeted leverage of around **2.4x**. This is an optimal level, we believe, to maintain broad and deep capital markets access through a cycle, balanced prudently with the opportunity for enhanced levered equity returns."*

- **AT&T (Apr 24, 2024)** [actual Debt/EBITDA: 2.9x]

  *"Our strong free cash flow has also enabled us to pay down debt. We finished the first quarter with net debt to adjusted EBITDA of 2.9x and continue to expect to reach our target in the **2.5x** range in the first half of 2025."*

- **Tyson Foods (May 6, 2024)** [actual Debt/EBITDA: 3.9x]

  *"...we are committed to building financial strength, investing in our business and returning cash to shareholders, while maintaining our investment-grade credit rating and returning net leverage to at or below **2x** net debt to EBITDA."*

**Recovering Misclassified Targets**

The LLM extraction classifies each passage into one of three statement types: `target_setting`, `description_with_analysis`, and `simple_description`. However, some genuine target-setting statements are classified as `description_with_analysis` by the LLM, particularly when the passage combines a target disclosure with extended commentary on the firm's capital structure strategy. To recover these misclassified targets, we apply the following filters to `description_with_analysis` rows:

1. The LLM's extracted `target_number` field is non-missing and contains a numeric value with "x" or "%" formatting (e.g., "2.5x (target)", "35% (long-term goal)").

2. The `target_number` field itself contains the word "target," "goal," or "objective"—indicating that the LLM recognized the passage as describing a target even though it classified the statement type differently.

3. The `leverage_variable` field refers to a capital-structure metric (Debt/EBITDA, Debt/Equity, Debt/Capital, etc.), excluding non-capital-structure ratios such as operating leverage, loan-to-value, loan-to-deposit, payout ratios, and efficiency ratios.

4. The firm-date pair does not already appear among `target_setting` rows, to avoid double-counting.

This procedure recovers 1,112 additional firm-quarter observations (from 420 unique firms, of which 20 are not represented in the `target_setting` sample) that would otherwise be lost. Manual inspection of 50 randomly sampled recovered targets confirms that over 90% are unambiguous

leverage target disclosures. The recovered observations are included in all analyses reported in the paper; results are quantitatively similar when using the narrower `target_setting`-only sample.

**Validation with Another LLM**

We validate our extraction by comparing DeepSeek-V3 and Gemini on a random sample of earnings call excerpts. For target-setting statements, DeepSeek labeled 29 excerpts as target-setting, and Gemini agreed on all 29. While Gemini flagged additional cases, most lacked a specific numerical target. Among excerpts where both models identified a leverage target number, the extracted values agreed exactly. This cross-model consistency supports the reliability of our extraction pipeline for both identifying target-setting mentions and recovering specific leverage targets.

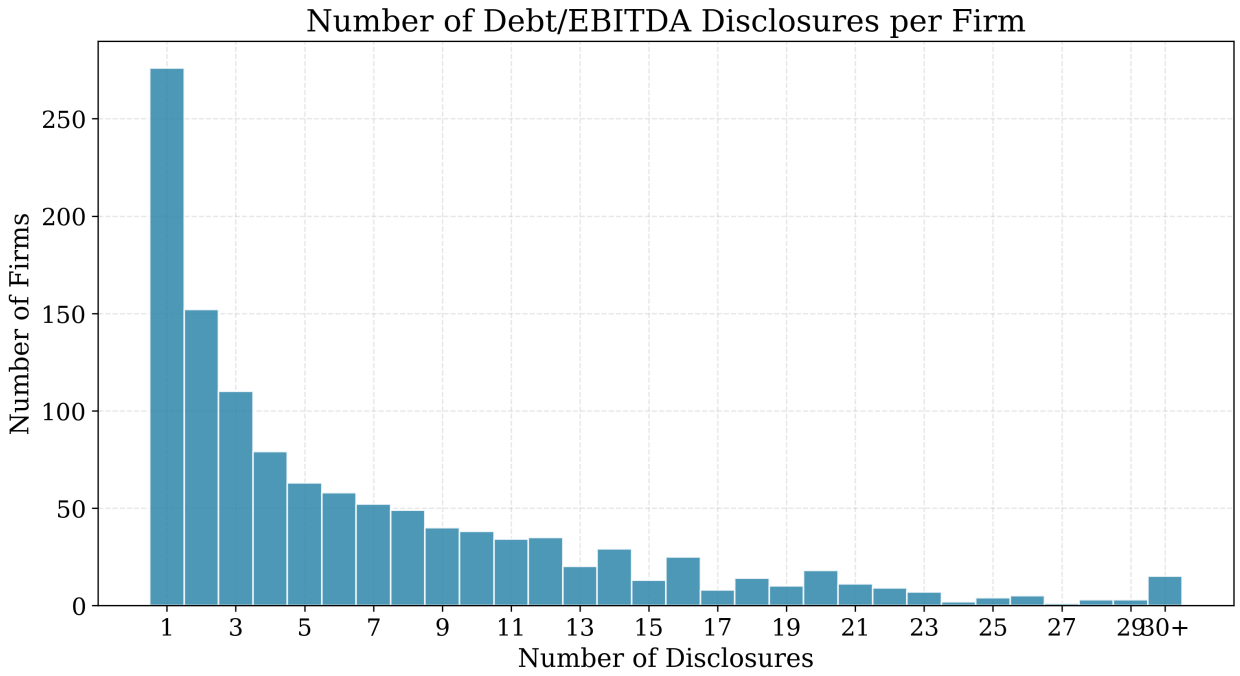
**Validation with 10-K Filings**

We investigated whether 10-K filings provide comparable leverage target data. Applying the same keyword-filtering and LLM extraction methodology to a large set of 10-K filings, we identified only approximately 400 target-related statements out of roughly 99,000 keyword-matched passages. Most matches correspond to generic covenant-related language rather than explicit management discussion of leverage targets. Because 10-Ks focus on mandatory disclosures and historical financial information rather than forward-looking commentary, they rarely contain the kind of stated targets and strategy discussion that appear in earnings calls. We therefore rely on earnings call transcripts as our primary source.

## Appendix B: Additional Figures and Tables

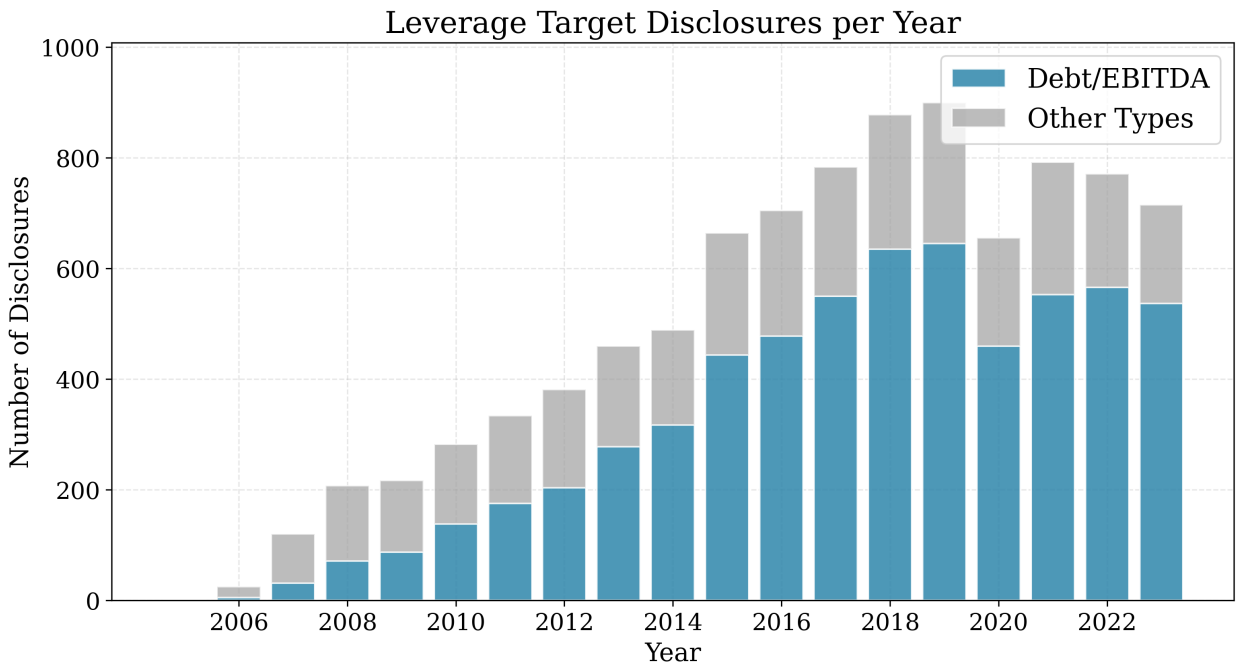
### Figures

Figure B1: Number of Debt/EBITDA disclosures per firm



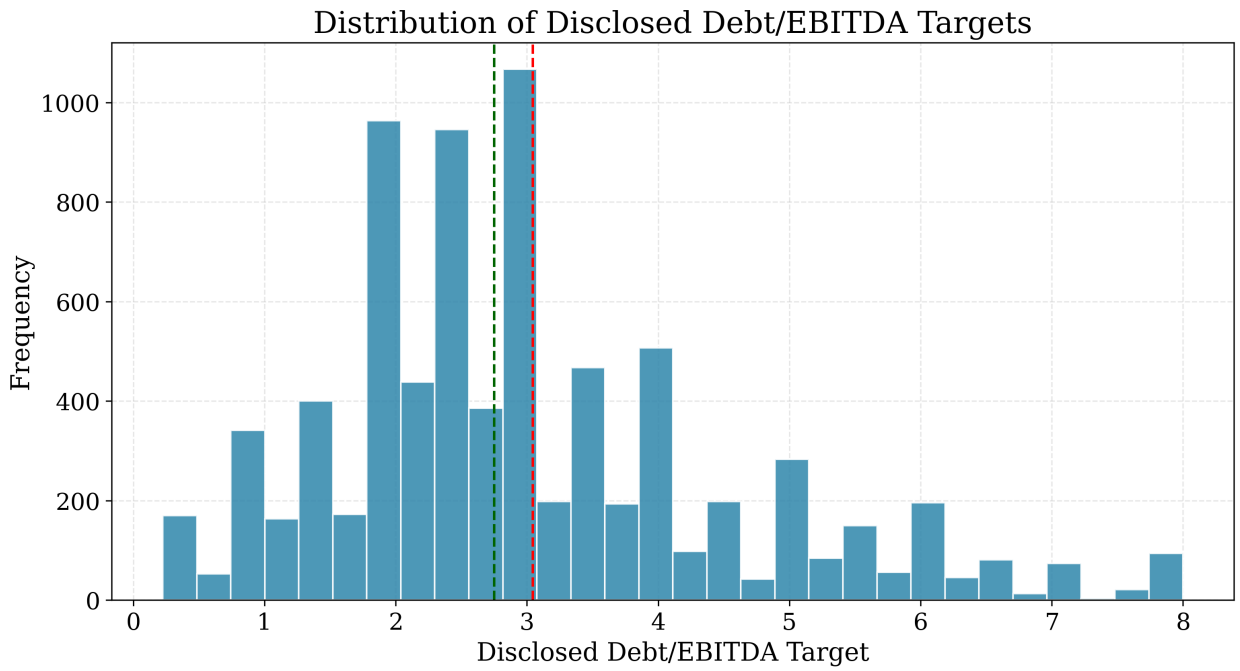

*Notes:* This figure plots the distribution of the number of Debt/EBITDA target disclosures per firm in earnings calls from 2005 to 2024. The dashed red line indicates the median. Firms with 30 or more disclosures are grouped into a single bin.

Figure B2: Number of leverage target disclosures per year



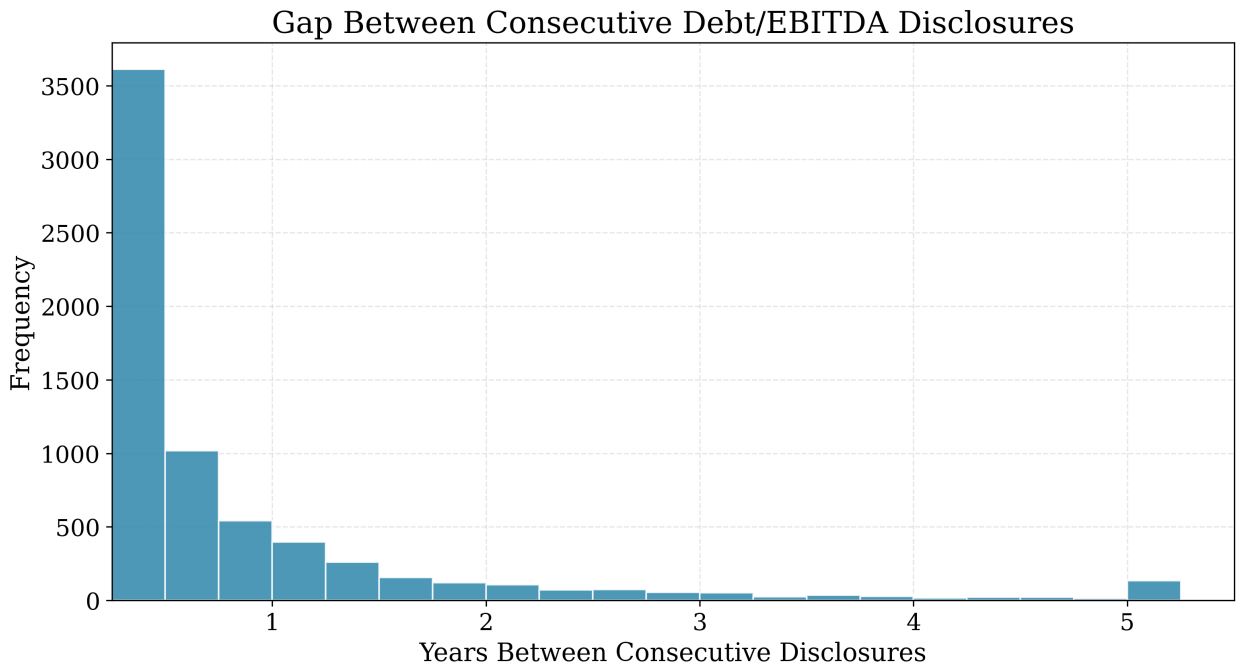

*Notes:* This figure plots the number of leverage target disclosures per year in earnings calls from 2005 to 2023. Blue bars represent Debt/EBITDA targets and gray bars represent other leverage target types (Debt/Capital, Debt/Equity, etc.). The sample ends in 2023 because 2024 earnings call data are incomplete.

Figure B3: Distribution of disclosed Debt/EBITDA targets



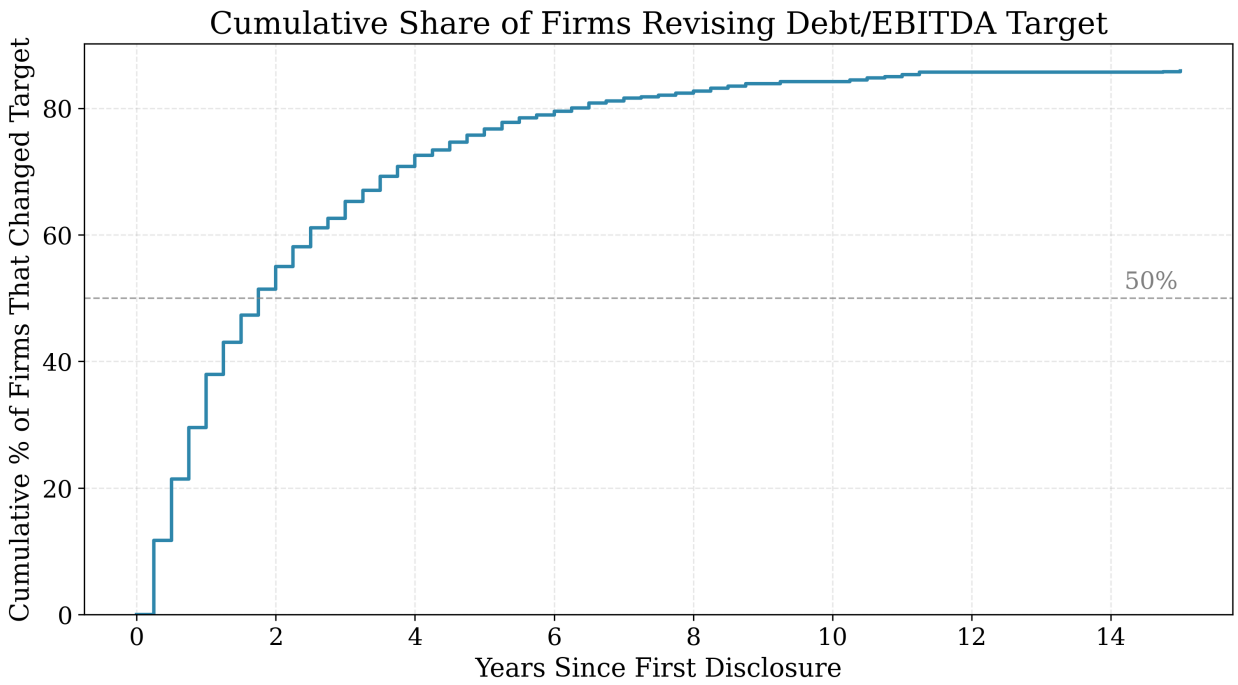

*Notes:* This figure plots the distribution of disclosed Debt/EBITDA targets across all firm-quarter observations. Values are winsorized at the 1st and 99th percentiles. The dashed red line indicates the mean and the dashed green line indicates the median.

Figure B4: Gap between consecutive disclosures



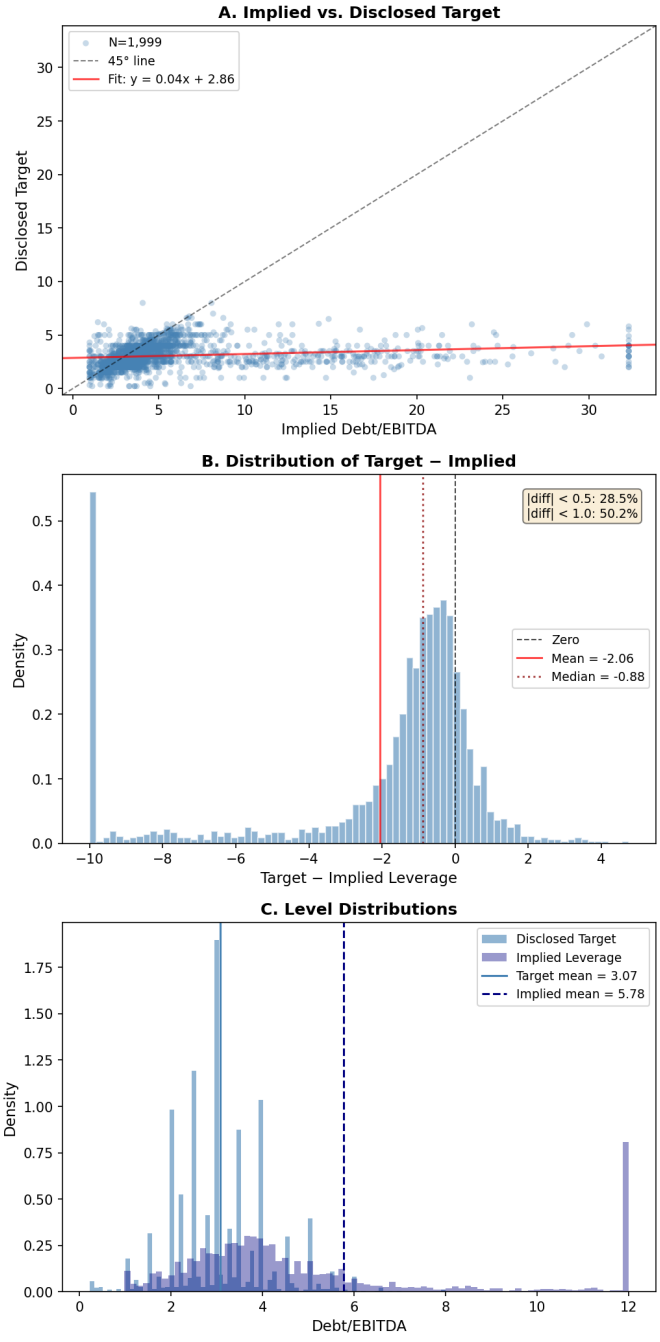

*Notes:* This figure plots the distribution of the time gap (in years) between consecutive Debt/EBITDA target disclosures within the same firm. Bins are at 0.25-year intervals. Gaps of five years or more are grouped into a single bin. The dashed red line indicates the median.

Figure B5: Cumulative share of firms that revised their target



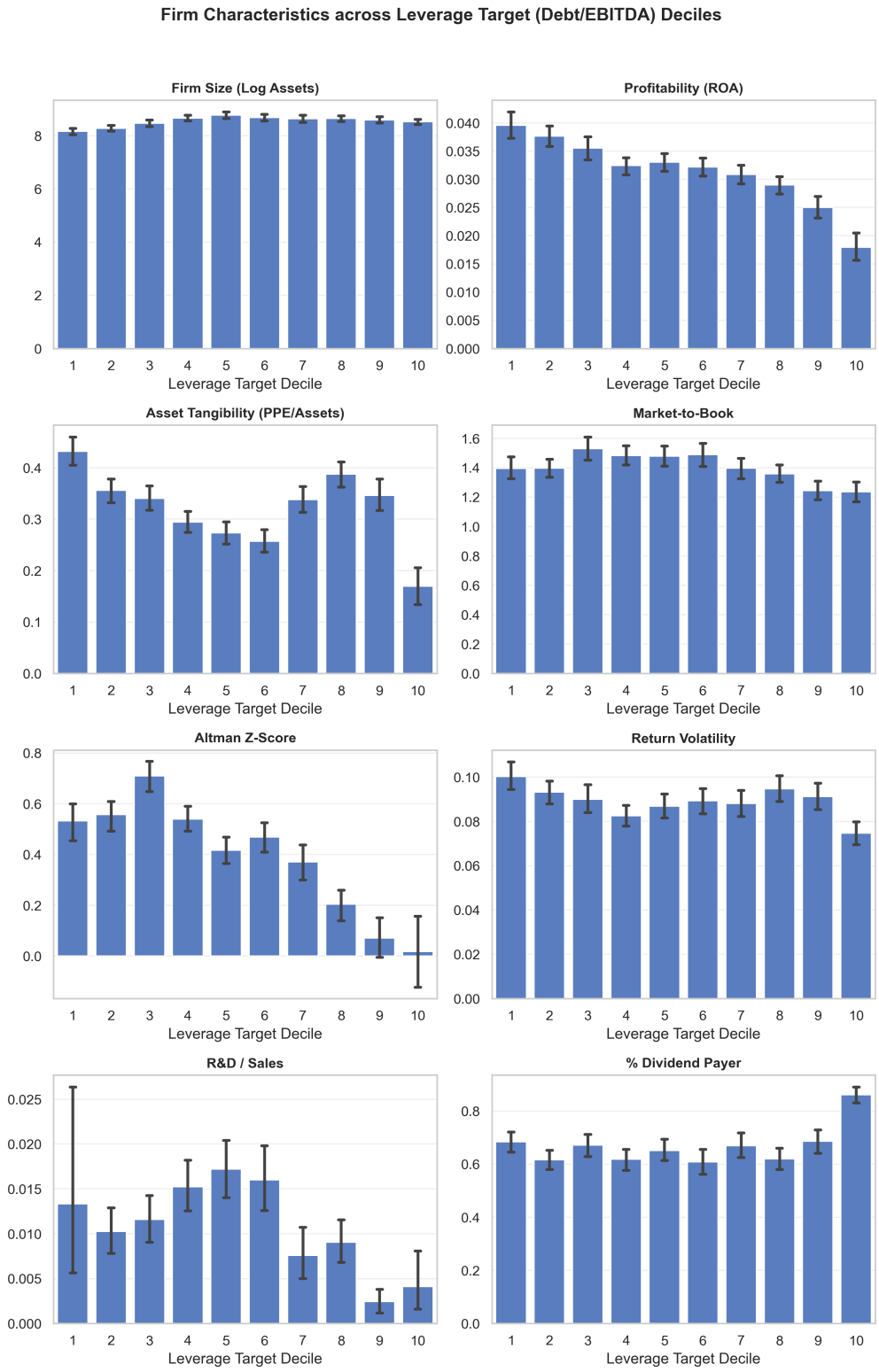

*Notes:* This figure plots the cumulative share of firms whose disclosed Debt/EBITDA target changed by more than 0.01 from their first disclosure, as a function of years since the first disclosure. Firms with only one observation are excluded. Firms that never revise their target are censored at their last observed disclosure. The dashed gray line marks 50%.

Figure B6: Disclosed Targets vs. Implied Leverage from EBITDA Guidance



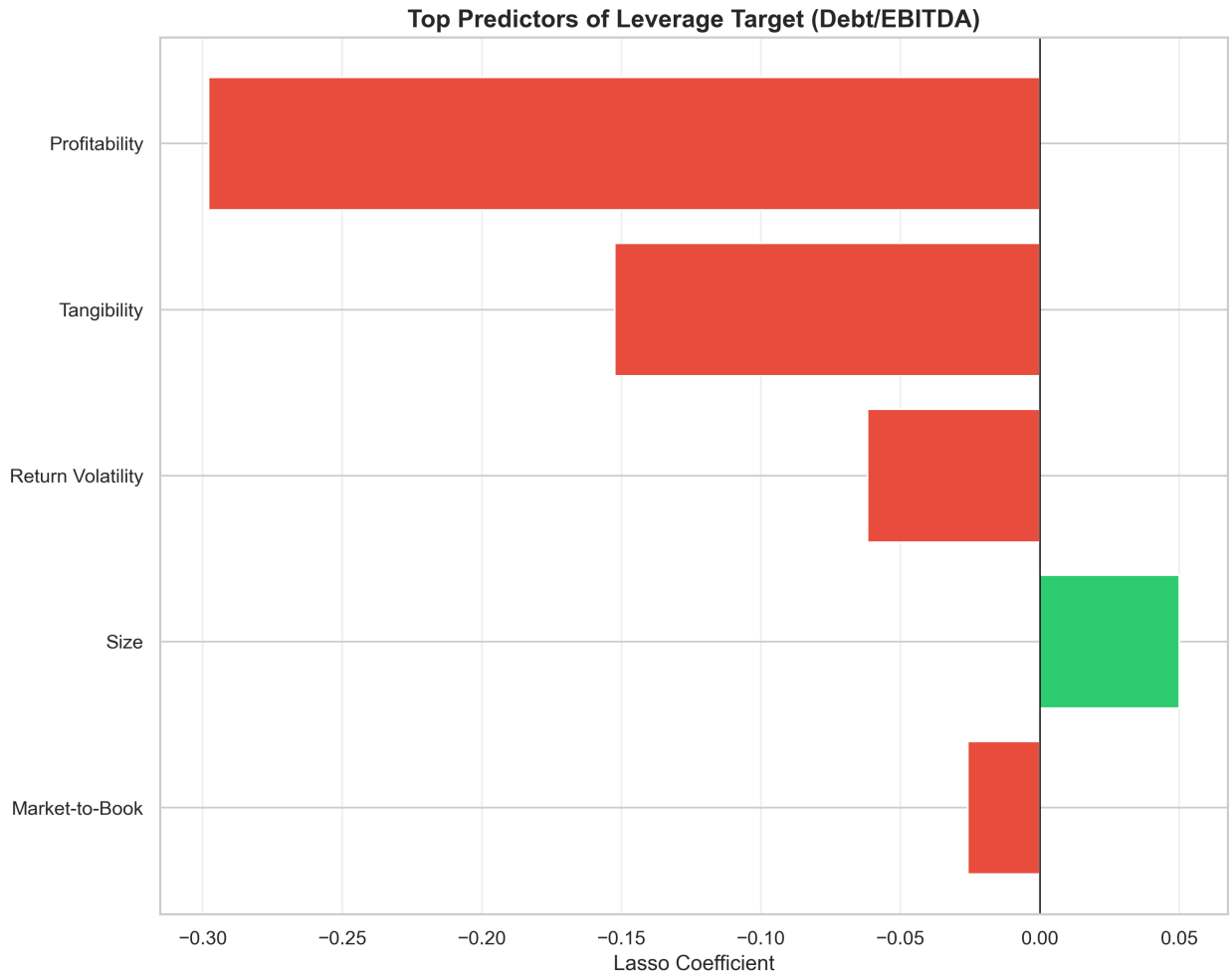

*Notes:* This figure compares disclosed Debt/EBITDA targets to implied leverage computed as current debt divided by guided EBITDA from IBES. The sample includes 2,137 firm-quarters (413 firms) with both a disclosed target and EBITDA guidance, covering 2007–2024. Panel A plots implied leverage (x-axis) against the disclosed target (y-axis) with the 45-degree line and OLS fit. Panel B shows the distribution of target minus implied leverage; the dashed black line marks zero (perfect match), and annotations report the fraction of observations within $\pm 0.5\times$ and $\pm 1.0\times$. Panel C overlays the marginal densities of disclosed targets and implied leverage, with vertical lines at each distribution's mean.

Figure B7: Firm Characteristics across Leverage Target Deciles




*Notes:* This figure sorts firm-quarter observations into deciles of their disclosed Debt/EBITDA target and plots the mean of each firm characteristic within each decile. Error bars denote 95% confidence intervals. The sample consists of all Debt/EBITDA target disclosures matched to Compustat firm characteristics.

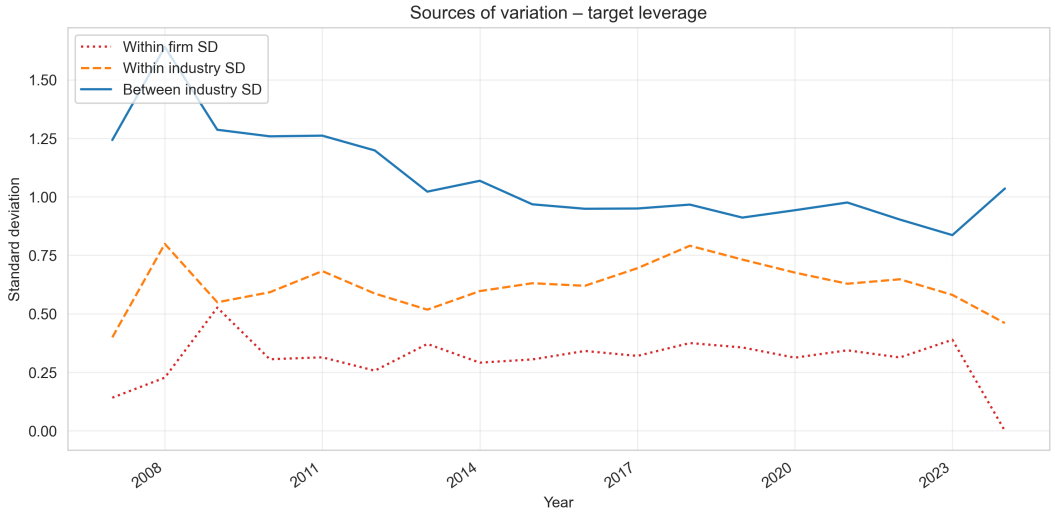
Figure B8: Top Predictors of Leverage Targets (LASSO)



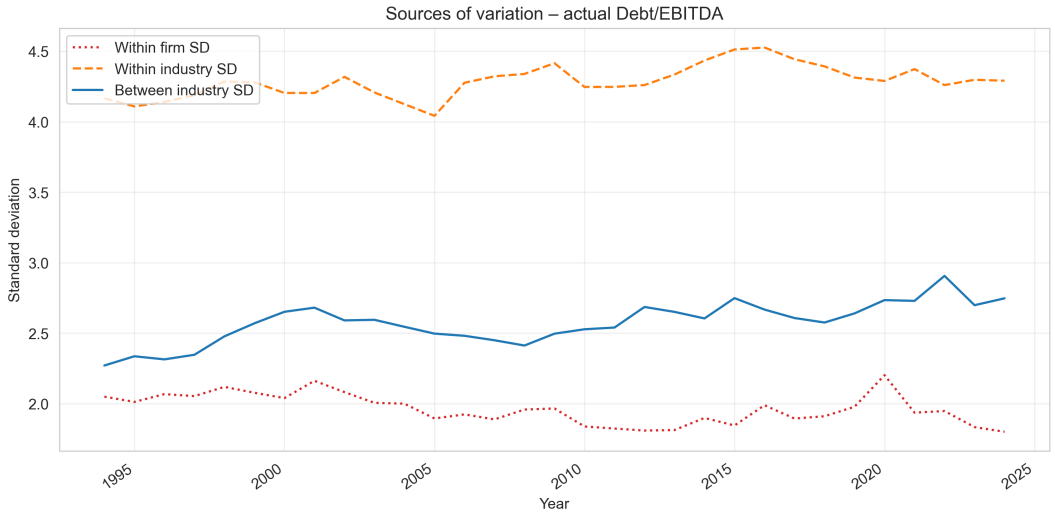

*Notes:* This figure reports LASSO regression coefficients from predicting disclosed Debt/EBITDA targets using standardized firm characteristics. All variables are standardized to have zero mean and unit variance before estimation. Green bars indicate positive coefficients (higher characteristic → higher target); red bars indicate negative coefficients. Only variables with nonzero LASSO coefficients are shown.

Figure B9: Sources of Variation Over Time: Target vs. Actual Debt/EBITDA

**Panel A: Target Leverage**

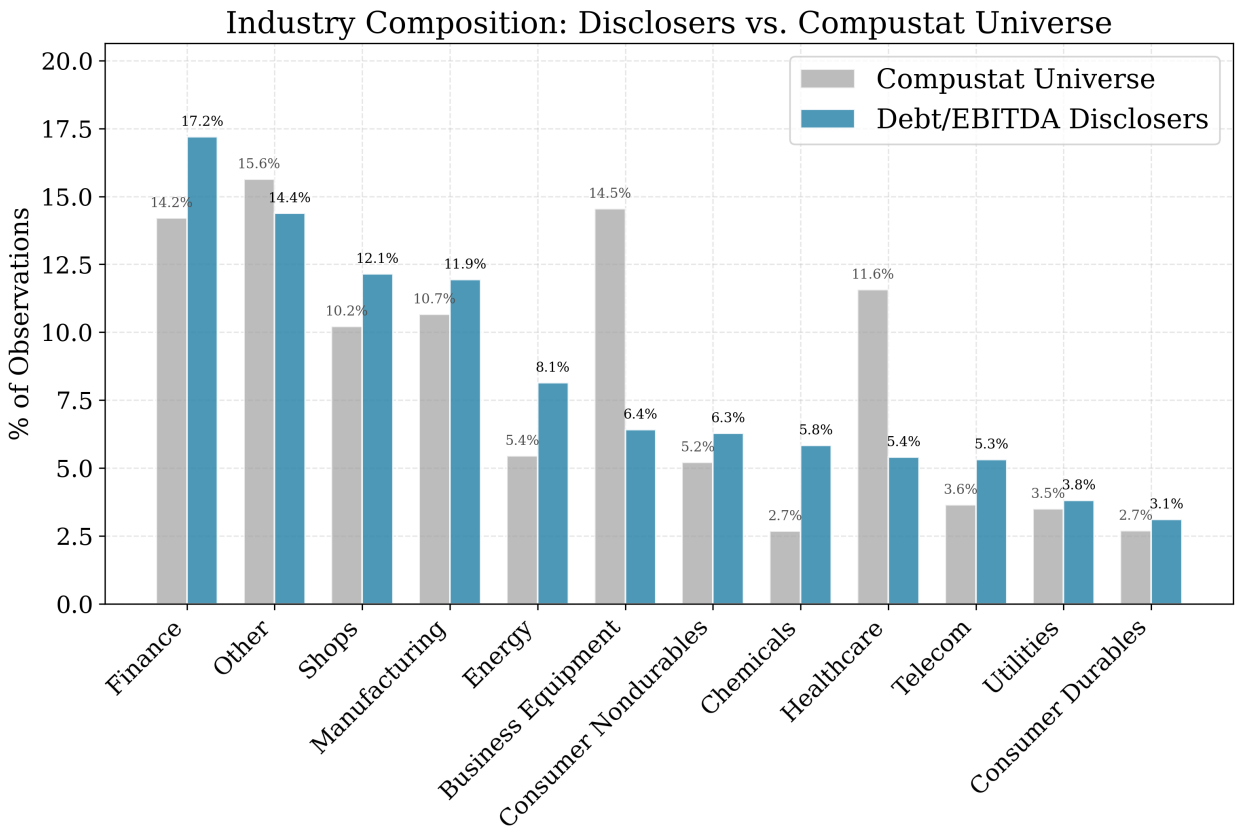



**Panel B: Actual Debt/EBITDA**



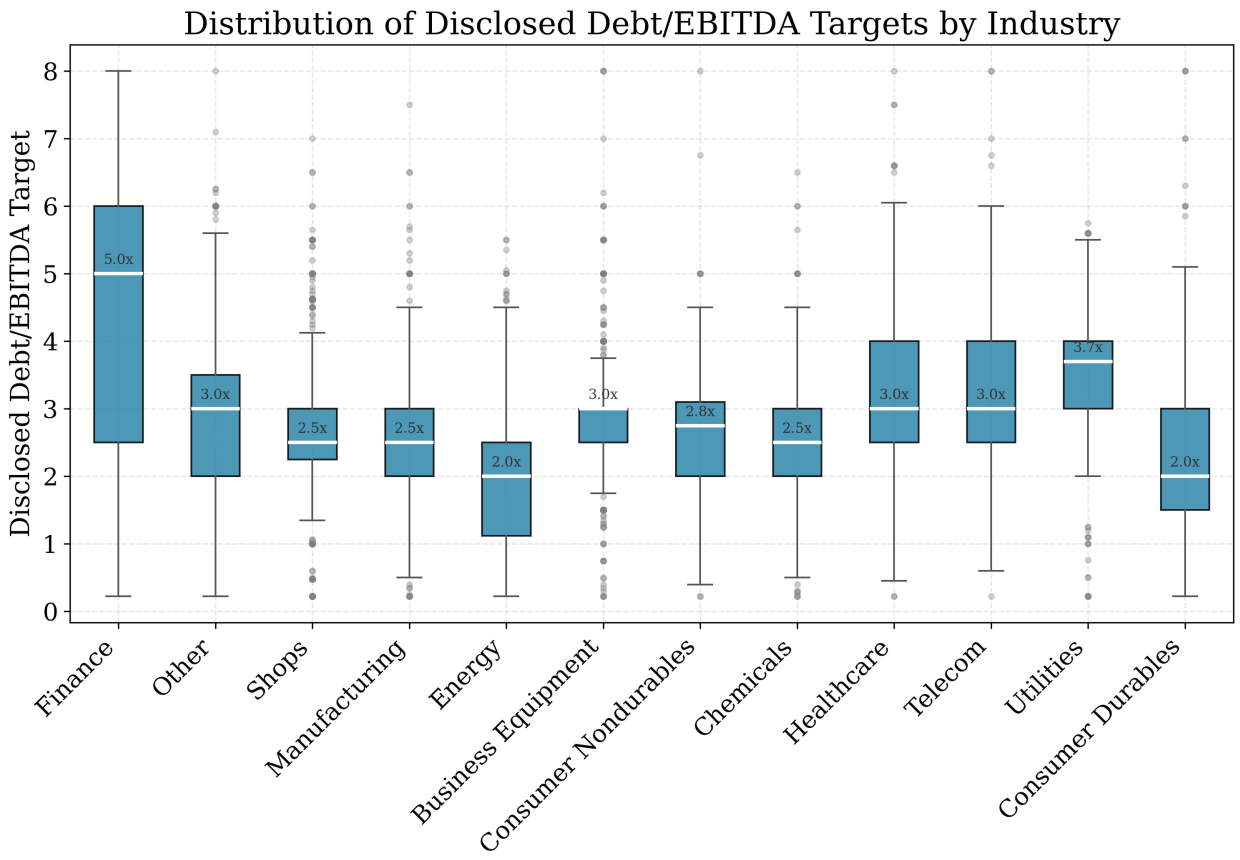

*Notes:* This figure plots the standard deviation of each variance component (between-industry, within-industry, and within-firm) over time for target leverage (Panel A) and actual Debt/EBITDA (Panel B). For targets, between-industry variation dominates and within-firm variation is small, reflecting the stability of targets over time. For actual Debt/EBITDA, within-industry variation is the largest component, and all sources of variation are substantially larger than for targets.

Figure B10: Share of disclosures by Fama-French 12 industry



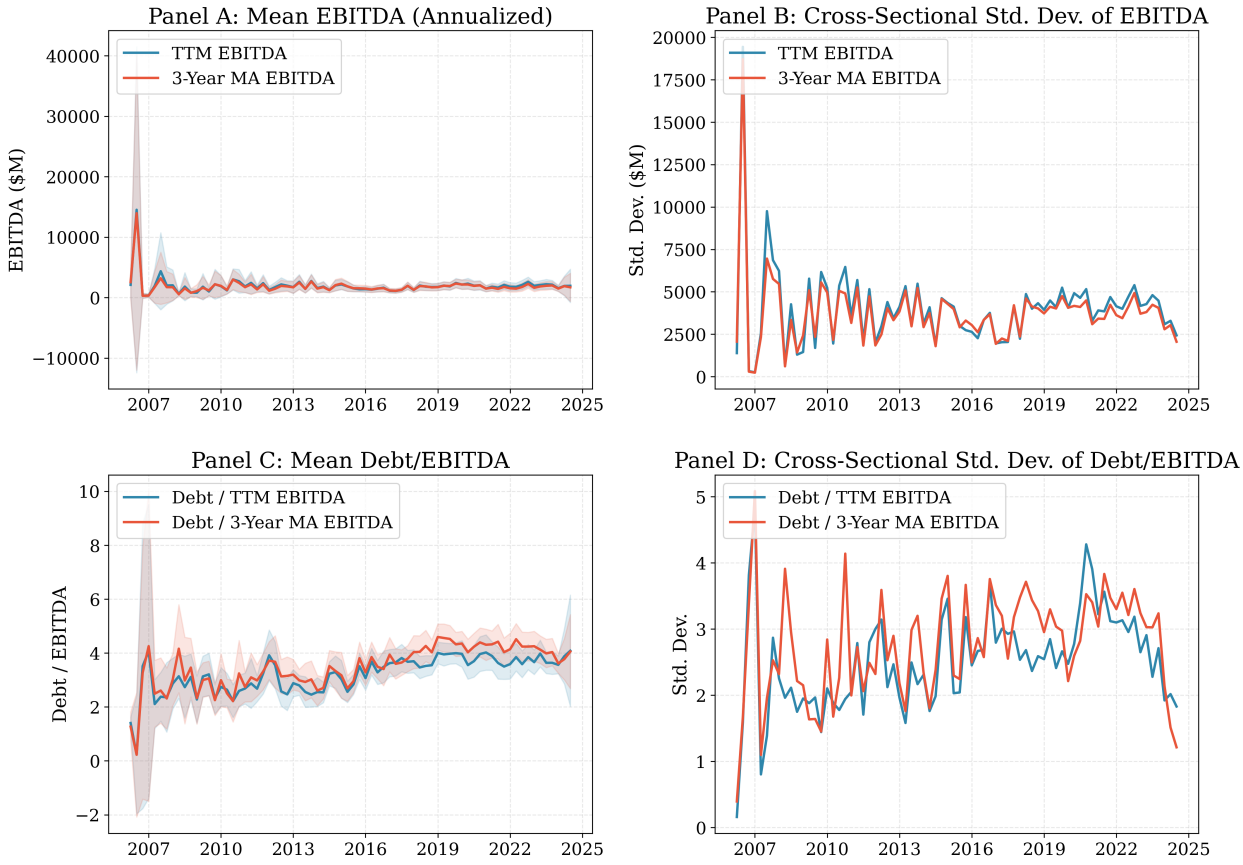

*Notes:* This figure plots the share of Debt/EBITDA target disclosures by Fama-French 12 industry classification. Industries are sorted by their share of total disclosures. SIC codes are mapped to the Fama-French 12 industries using the canonical Kenneth French SIC ranges.

Figure B11: Distribution of disclosed Debt/EBITDA targets by industry




*Notes:* This figure displays box plots of disclosed Debt/EBITDA targets by Fama-French 12 industry classification. Industries are sorted by number of observations (descending). Values are winsorized at the 1st and 99th percentiles. The white line within each box indicates the median, box edges indicate the 25th and 75th percentiles, and whiskers extend to 1.5× the interquartile range. Median values are labeled above each box.

Figure B12: TTM vs. 3-Year Moving Average EBITDA: Levels and Dispersion




*Notes:* This figure compares trailing 12-month (TTM) EBITDA with its 3-year moving average for the Debt/EBITDA discloser sample. Panel A plots the cross-sectional mean of annualized EBITDA each quarter with 95% confidence intervals. Panel B plots the cross-sectional standard deviation of EBITDA. Panel C plots the mean Debt/EBITDA ratio under each measure with 95% confidence intervals. Panel D plots the cross-sectional standard deviation of Debt/EBITDA. The 3-year moving average is the annualized mean of quarterly EBITDA over the trailing 12 quarters (minimum 8 required). Smoothing reduces both the level volatility and cross-sectional dispersion of the leverage ratio, particularly during recessions.

## Tables

### Table B1: Source of Leverage Target Disclosures

*Panel A: Overall Distribution*

| | N Obs | % of Obs | N Firms |
|---|---|---|---|
| Presentation | 5,756 | 61.3% | 1,007 |
| Q&A | 3,628 | 38.7% | 1,146 |
| Total | 9,384 | | |

*Panel B: By Position Relative to Target (Debt/EBITDA Only)*

| | Above Target (N = 4,827) | | At/Below Target (N = 3,042) | |
|---|---|---|---|---|
| | N | % | N | % |
| Presentation | 3,005 | 62.3% | 1,814 | 59.6% |
| Q&A | 1,822 | 37.7% | 1,228 | 40.4% |

*Notes:* This table reports the distribution of leverage target disclosures by their location within the earnings call transcript. "Presentation" refers to the prepared remarks section. "Q&A" refers to the question-and-answer section (including both analyst questions and management answers). Panel A reports the overall distribution. Panel B reports the distribution separately for Debt/EBITDA disclosures where the firm is above its target (overleveraged) versus at or below (underleveraged).

Table B2: Summary Statistics of Main Regression Variables

| | N | Mean | SD | P25 | Median | P75 |
|---|---|---|---|---|---|---|
| Target Leverage | 5,608 | 2.693 | 1.069 | 2.000 | 2.500 | 3.125 |
| Current Leverage | 5,608 | 3.520 | 2.488 | 1.933 | 3.047 | 4.433 |
| Leverage Gap (Target - Current) | 5,608 | -0.827 | 2.205 | -1.373 | -0.460 | 0.275 |
| Leverage Change (1Q) | 5,416 | -0.097 | 1.401 | -0.279 | -0.058 | 0.163 |
| Leverage Change (4Q) | 5,228 | -0.175 | 2.222 | -0.716 | -0.099 | 0.427 |
| Log Assets | 5,608 | 8.637 | 1.425 | 7.640 | 8.549 | 9.583 |
| Market-to-Book | 5,608 | 1.412 | 0.771 | 0.882 | 1.176 | 1.685 |
| Tangibility | 5,608 | 0.316 | 0.256 | 0.108 | 0.226 | 0.482 |
| Profitability | 5,608 | 0.034 | 0.019 | 0.023 | 0.031 | 0.041 |
| Z-Score | 5,608 | 0.464 | 0.652 | 0.098 | 0.446 | 0.876 |
| R&D/Sales | 5,608 | 0.013 | 0.032 | 0.000 | 0.000 | 0.003 |
| Dividend Payer | 5,608 | 0.602 | 0.489 | 0.000 | 1.000 | 1.000 |
| Return Volatility | 5,608 | 0.094 | 0.068 | 0.046 | 0.077 | 0.122 |
| Buy-and-Hold Return | 5,608 | 0.038 | 0.201 | -0.076 | 0.034 | 0.141 |

*Notes:* This table reports summary statistics for the main variables used in the regression analyses. The sample consists of firm-quarter observations with non-missing Debt/EBITDA target disclosures, current leverage, and all control variables. Target Leverage is the disclosed Debt/EBITDA target. Current Leverage is actual Debt/EBITDA. Leverage Gap equals Target minus Current. All continuous variables are winsorized at the 1st and 99th percentiles.

Table B3: Variance Decomposition: Target vs. Actual Leverage

| | Target | Debt/EBITDA | Debt/Assets |
|---|---|---|---|
| Between-industry | 42.9% | 31.6% | 41.9% |
| Within-industry | 27.9% | 34.0% | 37.8% |
| Within-firm | 29.2% | 34.4% | 20.3% |

*Notes:* This table reports the variance decomposition of total variation in leverage measures into three components: between-industry, within-industry (between-firm), and within-firm, following the methodology of Lemmon, Roberts, and Zender (2008). Industries are defined by 4-digit SIC codes. The sample consists of firm-quarter observations with non-missing Debt/EBITDA target disclosures, current leverage, and all control variables.

## Table B4: Covenant and Credit Rating Channels

*Panel A: Debt/EBITDA Covenants → Debt/EBITDA Target Choice*

| | Target is Debt/EBITDA | |
|---|---|---|
| | (1) | (2) |
| Has Debt/EBITDA Covenant | 0.1406*** | 0.1411*** |
| | (0.0192) | (0.0191) |
| Has Other Covenant | -0.0816*** | -0.0819*** |
| | (0.0183) | (0.0185) |
| Controls | | ✓ |
| Industry FE | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ |
| Observations | 7,735 | 7,735 |
| R-squared | 0.3592 | 0.3618 |

*Panel B: High-Yield Rating → Debt/EBITDA Target Choice*

| | Target is Debt/EBITDA | |
|---|---|---|
| | (1) | (2) |
| High Yield | 0.1327*** | 0.1391*** |
| | (0.0264) | (0.0301) |
| Controls | | ✓ |
| Industry FE | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ |
| Observations | 4,626 | 4,626 |
| R-squared | 0.4215 | 0.4222 |

*Notes:* This table examines two channels that predict whether a firm's disclosed leverage target is Debt/EBITDA rather than another leverage measure (e.g., Debt/Capital, Debt/Equity). The sample in both panels consists of firm-quarters with a disclosed leverage target. The dependent variable equals one if the disclosed target is Debt/EBITDA. In Panel A, Has Debt/EBITDA Covenant equals one if the firm has an active DealScan facility with a Max. Debt to EBITDA or Max. Senior Debt to EBITDA financial covenant. Has Other Covenant equals one if the firm has other financial covenants but no Debt/EBITDA covenant. Covenant data are from DealScan, linked via the Chava-Roberts linking table; firms without a DealScan match are treated as having no syndicated loan covenant. In Panel B, the sample is further restricted to disclosing firm-quarters with an S&P credit rating. High Yield equals one if the firm's S&P long-term issuer rating is below investment grade (BB+ or below). Controls include Log(Assets), Market-to-Book, Tangibility, and Profitability, all lagged one quarter. All specifications include industry (2-digit SIC) and year-quarter fixed effects. Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

## Table B5: Robustness: Disclosed Targets vs. Covenant Thresholds

*Panel A: Disclosed Target vs. Covenant Threshold (Debt/EBITDA)*

| | Mean | Median | Std. Dev. | % Below | % Within 0.25x | N |
|---|---|---|---|---|---|---|
| Target − Threshold | −1.172 | −1.100 | 1.305 | 84.0% | 10.5% | 3,183 |
| Mean target: 2.84x | Mean threshold: 4.01x | Mean actual: 3.19x | | | | |
| $t$-test (Target = Threshold): $t = -50.69$*** | | | | | | |

*Panel B: Speed of Adjustment by Covenant Status*

| | 1-Quarter Ahead | | 4-Quarter Ahead | |
|---|---|---|---|---|
| | Industry FE (1) | Firm FE (2) | Industry FE (3) | Firm FE (4) |
| *Full sample* | | | | |
| Leverage Gap | 0.354*** | 0.458*** | 0.553*** | 0.767*** |
| | (0.027) | (0.033) | (0.029) | (0.035) |
| N | 5,868 | 5,629 | 5,678 | 5,436 |
| *No Debt/EBITDA covenant* | | | | |
| Leverage Gap | 0.333*** | 0.462*** | 0.527*** | 0.733*** |
| | (0.034) | (0.046) | (0.039) | (0.052) |
| N | 2,970 | 2,760 | 2,853 | 2,643 |
| *Has Debt/EBITDA covenant* | | | | |
| Leverage Gap | 0.406*** | 0.462*** | 0.636*** | 0.808*** |
| | (0.042) | (0.047) | (0.042) | (0.053) |
| N | 2,891 | 2,755 | 2,819 | 2,679 |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |

*Panel C: SOA Controlling for Covenant Status*

| | 1-Quarter Ahead | | 4-Quarter Ahead | |
|---|---|---|---|---|
| | Industry FE (1) | Firm FE (2) | Industry FE (3) | Firm FE (4) |
| Leverage Gap | 0.354*** | 0.458*** | 0.553*** | 0.768*** |
| | (0.027) | (0.033) | (0.029) | (0.036) |
| Has Debt/EBITDA Covenant | −0.004 | 0.068 | −0.038 | 0.049 |
| | (0.038) | (0.066) | (0.069) | (0.119) |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Observations | 5,868 | 5,629 | 5,678 | 5,436 |
| $R^2$ | 0.279 | 0.335 | 0.282 | 0.375 |

*Notes:* This table addresses the concern that disclosed Debt/EBITDA targets merely restate covenant thresholds. Panel A compares disclosed leverage targets to DealScan Debt/EBITDA covenant thresholds for the subsample with both variables available. "% Below" is the share of observations where the target is strictly below the covenant threshold. Panel B re-estimates the gap-closing (SOA) regression by covenant status. "Leverage Gap" is the disclosed target minus current leverage. Panel C adds an indicator for having a Debt/EBITDA covenant as a control in the main SOA regression. Controls include Log(Assets), Market-to-Book, Tangibility, Profitability, R&D/Sales, Dividend Payer, Return Volatility, and Buy-and-Hold Return. All specifications include Fama-French 48 industry or firm fixed effects, plus year-quarter fixed effects. Standard errors clustered by firm in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table B6: Determinants of Leverage Target Type

| | Dep. Var.: Target is Debt/EBITDA | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Log(Assets) | -0.009 | -0.036** | -0.010 | -0.036** |
| | ( 0.007) | ( 0.018) | ( 0.006) | ( 0.018) |
| Market-to-Book | 0.004 | -0.033** | -0.000 | -0.034** |
| | ( 0.010) | ( 0.017) | ( 0.010) | ( 0.016) |
| Tangibility | -0.011 | -0.085 | 0.001 | -0.091 |
| | ( 0.066) | ( 0.077) | ( 0.061) | ( 0.077) |
| Profitability | 0.857*** | -0.106 | 0.782*** | -0.085 |
| | ( 0.275) | ( 0.190) | ( 0.270) | ( 0.188) |
| R&D/Sales | -0.247 | 0.127 | -0.224 | 0.134 |
| | ( 0.181) | ( 0.245) | ( 0.180) | ( 0.244) |
| Dividend Payer | -0.028* | -0.017 | -0.026* | -0.019 |
| | ( 0.016) | ( 0.019) | ( 0.015) | ( 0.019) |
| Return Volatility | 0.300*** | 0.040 | 0.254*** | 0.036 |
| | ( 0.072) | ( 0.053) | ( 0.068) | ( 0.053) |
| Has Debt/EBITDA Covenant | | | 0.142*** | 0.021 |
| | | | ( 0.019) | ( 0.018) |
| Has Other Covenant | | | -0.083*** | 0.017 |
| | | | ( 0.019) | ( 0.016) |
| High Yield | | | 0.042* | -0.030 |
| | | | ( 0.022) | ( 0.064) |
| Industry FE | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Observations | 7,715 | 7,435 | 7,715 | 7,435 |
| $R^2$ | 0.012 | 0.006 | 0.052 | 0.008 |

*Notes:* This table reports linear probability model estimates where the dependent variable equals one if the firm discloses a Debt/EBITDA target (85% of the sample) rather than another leverage metric (Debt/Capital, Debt/Equity, or other). Has Debt/EBITDA Covenant equals one if the firm has an active DealScan facility with a Max. Debt to EBITDA or Max. Senior Debt to EBITDA financial covenant. Has Other Covenant equals one if the firm has other financial covenants but no Debt/EBITDA covenant. High Yield equals one if the firm's S&P rating is below investment grade. All specifications include Fama-French 48 industry or firm fixed effects plus year ×quarter fixed effects. Standard errors clustered by firm in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

## Table B7: Reasoning Behind Leverage Targets

*Panel A: Primary Motivation*

| Category | N Obs | % of Obs |
|---|---|---|
| Financial Flexibility | 5,878 | 62.6% |
| Other | 1,485 | 15.8% |
| Regulatory / Covenant | 1,312 | 14.0% |
| Agency Cost | 285 | 3.0% |
| Market Timing | 276 | 2.9% |
| Pecking Order | 73 | 0.8% |
| Not Specified | 59 | 0.6% |
| Tax Shield | 16 | 0.2% |

*Panel B: Detailed Actions Discussed*

| Debt Actions | | | Equity Actions | | | Asset Actions | | |
|---|---|---|---|---|---|---|---|---|
| Category | N | % | Category | N | % | Category | N | % |
| Reducing Debt | 3,472 | 37.0% | Share Repurchases | 1,891 | 20.2% | Operational Improvements | 3,715 | 39.6% |
| Increasing Debt | 1,283 | 13.7% | Equity Issuance | 564 | 6.0% | Acquisitions | 1,494 | 15.9% |
| Restructuring Debt | 467 | 5.0% | Retained Earnings | 73 | 0.8% | Asset Sales | 722 | 7.7% |
| Other Debt Action | 74 | 0.8% | Other Equity Action | 54 | 0.6% | Other Asset Action | 108 | 1.2% |
| Refinancing Debt | 56 | 0.6% | Dividends / Distributions | 25 | 0.3% | Organic Growth | 44 | 0.5% |
| Any Mentioned | 5,014 | 53.4% | Any Mentioned | 2,589 | 27.6% | Any Mentioned | 5,863 | 62.5% |
| None Mentioned | 4,370 | 46.6% | None Mentioned | 6,795 | 72.4% | None Mentioned | 3,521 | 37.5% |

*Notes:* This table reports the motivations and actions discussed by managers during earnings calls in which they disclose a leverage target. Panel A reports the primary motivation for the leverage target. Panel B reports the detailed breakdown of actions discussed, classified into debt, equity, and asset categories. Actions are extracted from the discussion surrounding each target disclosure and classified into standardized categories. A single disclosure may reference multiple actions within a category. The sample contains 9,384 firm-quarter observations with leverage target disclosures.

## Table B8: Speed of Adjustment: Point vs. Range Target Disclosures

*Panel A: Midpoint Gap (Baseline)*

| | 1-Quarter | | 4-Quarter | |
|---|---|---|---|---|
| | Point | Range | Point | Range |
| | (1) | (2) | (3) | (4) |
| Leverage Gap | 0.384*** | 0.298*** | 0.604*** | 0.462*** |
| | ( 0.034) | ( 0.038) | ( 0.036) | ( 0.046) |
| Difference (Range − Point) | | -0.093** | | -0.129** |
| | | ( 0.042) | | ( 0.051) |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Observations | 3,990 | 1,870 | 3,826 | 1,848 |
| Within $R^2$ | 0.297 | 0.247 | 0.298 | 0.256 |

*Panel B: Range-Aware Gap*

| | 1-Quarter | | 4-Quarter | |
|---|---|---|---|---|
| | Point | Range | Point | Range |
| | (1) | (2) | (3) | (4) |
| Leverage Gap | 0.384*** | 0.319*** | 0.604*** | 0.492*** |
| | ( 0.034) | ( 0.040) | ( 0.036) | ( 0.050) |
| Difference (Range − Point) | | -0.071* | | -0.096* |
| | | ( 0.043) | | ( 0.054) |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Observations | 3,990 | 1,870 | 3,826 | 1,848 |
| Within $R^2$ | 0.297 | 0.252 | 0.298 | 0.259 |

*Notes:* This table compares the speed of adjustment toward disclosed leverage targets for firm-quarters with point target disclosures vs. range target disclosures. Point targets are single-valued; range targets specify a band. Panel A uses the range midpoint as the target for all disclosers. Panel B uses a range-aware gap: for range disclosers, the gap equals zero when actual leverage falls within the disclosed band and the distance to the nearer bound when outside; for point disclosers, the gap is identical to Panel A. "Difference" reports the coefficient on Gap × Range Target from a pooled regression that includes both types, formally testing whether SOA differs. Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table B9: Gap-Closing Specification: TTM vs. 3-Year Moving Average EBITDA

| | 1-Quarter | | 4-Quarter | | 8-Quarter | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *Panel A: Trailing 12-Month (TTM) EBITDA* | | | | | | |
| Leverage Gap (Target − Current) | 0.357*** | 0.458*** | 0.561*** | 0.767*** | 0.629*** | 0.876*** |
| | (0.027) | (0.033) | (0.029) | (0.035) | (0.038) | (0.043) |
| Observations | 5,867 | 5,629 | 5,677 | 5,436 | 4,853 | 4,630 |
| Within R-squared | 0.281 | 0.334 | 0.284 | 0.375 | 0.254 | 0.389 |
| *Panel B: 3-Year Moving Average EBITDA* | | | | | | |
| Leverage Gap (Target − Current) | 0.204*** | 0.316*** | 0.498*** | 0.698*** | 0.620*** | 0.857*** |
| | (0.022) | (0.033) | (0.032) | (0.038) | (0.036) | (0.036) |
| Observations | 5,615 | 5,389 | 5,449 | 5,227 | 4,652 | 4,435 |
| Within R-squared | 0.133 | 0.195 | 0.345 | 0.469 | 0.341 | 0.523 |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | | ✓ | | ✓ | |
| Firm FE | | ✓ | | ✓ | | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

*Notes:* This table compares speed of adjustment estimates using two leverage measures: Debt/EBITDA with trailing 12-month (TTM) EBITDA (Panel A) and Debt/EBITDA with a 3-year moving average EBITDA (Panel B). The dependent variable is the change in leverage from $t$ to $t + k$. The coefficient on Leverage Gap (Target − Current Leverage) represents the speed of adjustment—the fraction of the gap closed per period. The 3-year moving average EBITDA is the annualized mean of quarterly EBITDA over the trailing 12 quarters (minimum 8 quarters required). Smoothing the EBITDA denominator reduces mechanical mean-reversion in the leverage ratio, yielding lower but more conservative SOA estimates. Odd columns include industry and time fixed effects; even columns include firm and time fixed effects. All specifications include firm-level controls. Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table B10: Speed of Adjustment: Disclosed vs. Estimated Targets (Discloser Sample)

| | Industry FE | | | Firm FE | | |
|---|---|---|---|---|---|---|
| | Disclosed Debt/EBITDA | Estimated Debt/EBITDA | Estimated Debt/Assets | Disclosed Debt/EBITDA | Estimated Debt/EBITDA | Estimated Debt/Assets |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *Panel A: 1-Quarter Ahead* | | | | | | |
| Gap (Target − Current) | 0.357*** | 0.217*** | 0.037*** | 0.458*** | 0.364*** | 0.079*** |
| | (0.027) | (0.023) | (0.005) | (0.033) | (0.034) | (0.008) |
| *Panel B: 4-Quarter Ahead* | | | | | | |
| Gap (Target − Current) | 0.561*** | 0.426*** | 0.107*** | 0.767*** | 0.754*** | 0.232*** |
| | (0.029) | (0.038) | (0.012) | (0.035) | (0.053) | (0.017) |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Industry FE | ✓ | ✓ | ✓ | | | |
| Firm FE | | | | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| *Panel A: 1-Quarter Ahead* | | | | | | |
| Observations | 5867 | 5389 | 5451 | 5629 | 5183 | 5243 |
| Within $R^2$ | 0.281 | 0.086 | 0.025 | 0.334 | 0.146 | 0.045 |
| *Panel B: 4-Quarter Ahead* | | | | | | |
| Observations | 5677 | 5206 | 5270 | 5436 | 5002 | 5069 |
| Within $R^2$ | 0.284 | 0.109 | 0.050 | 0.375 | 0.207 | 0.110 |

*Notes:* This table compares speed of adjustment estimates using three approaches on the same sample of disclosing firms: (1) Disclosed Debt/EBITDA targets, (2) Estimated Debt/EBITDA targets from firm characteristics, and (3) Estimated Debt/Assets targets from firm characteristics. This isolates the measurement effect by holding the sample constant. The dependent variable is the change in leverage from $t$ to $t + k$. The independent variable is the gap between target and current leverage (Target − Current). Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.

## Table B11: Discloser vs. Non-Discloser Speed of Adjustment

*Panel A: Firm-Quarter Level*

| | Debt/Assets | Debt/EBITDA |
|---|---|---|
| Disclosed quarters | 44.2% | 79.3% |
| Non-disclosed quarters | 40.0% | 70.5% |
| Difference | 4.3% ($p$=0.331) | 8.7% ($p$=0.004) |

*Panel B: Firm Level*

| | Debt/Assets | Debt/EBITDA |
|---|---|---|
| Ever-disclosers | 29.1% | 62.3% |
| Never-disclosers | 42.5% | 73.2% |
| Difference | -13.3% ($p$<0.001) | -10.8% ($p$<0.001) |

*Notes:* This table compares the speed of adjustment toward estimated leverage targets for disclosers vs. non-disclosers. Panel A splits by whether the firm disclosed a target in that specific quarter. Panel B splits by whether the firm ever disclosed a target. Both Debt/Assets and Debt/EBITDA measures are reported. Targets are estimated from firm characteristics. Firm and time fixed effects are included. Standard errors are clustered by firm.

## Table B12: Asymmetric Adjustment Toward Leverage Targets: Robustness

*Panel A: Tighter Winsorization (P2.5/P97.5)*

| | Δ Debt/EBITDA (1Q) | Δ Debt/EBITDA (4Q) |
|---|---|---|
| | (1) | (2) |
| Gap × Below Target | 0.260*** | 0.365*** |
| | (0.051) | (0.076) |
| Gap × Above Target | 0.400*** | 0.774*** |
| | (0.029) | (0.036) |
| Controls | ✓ | ✓ |
| Firm FE | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ |
| $p$-value: Below = Above | 0.025 | 0.000 |
| N | 5,209 | 5,020 |
| $R^2$ (within) | 0.25 | 0.38 |

*Panel B: Capping the Leverage Gap*

| | $\|\text{Gap}\| \leq 5$ | | $\|\text{Gap}\| \leq 3$ | |
|---|---|---|---|---|
| | 1Q | 4Q | 1Q | 4Q |
| | (1) | (2) | (3) | (4) |
| Gap × Below Target | 0.217*** | 0.303*** | 0.250*** | 0.332*** |
| | (0.055) | (0.077) | (0.057) | (0.079) |
| Gap × Above Target | 0.515*** | 1.016*** | 0.512*** | 1.063*** |
| | (0.045) | (0.065) | (0.048) | (0.078) |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ | ✓ | ✓ |
| $p$-value: Below = Above | 0.000 | 0.000 | 0.001 | 0.000 |
| N | 5,209 | 5,020 | 5,209 | 5,020 |
| $R^2$ (within) | 0.16 | 0.26 | 0.11 | 0.19 |

*Panel C: Range-Aware Gap*

| | Δ Debt/EBITDA (1Q) | Δ Debt/EBITDA (4Q) |
|---|---|---|
| | (1) | (2) |
| Gap × Below Target | 0.234*** | 0.388*** |
| | (0.055) | (0.082) |
| Gap × Above Target | 0.516*** | 0.826*** |
| | (0.039) | (0.038) |
| Controls | ✓ | ✓ |
| Firm FE | ✓ | ✓ |
| Year×Quarter FE | ✓ | ✓ |
| $p$-value: Below = Above | 0.000 | 0.000 |
| N | 5,209 | 5,020 |
| $R^2$ (within) | 0.36 | 0.39 |

*Notes:* This table reports robustness checks for the asymmetric adjustment test in Table 8. Panel A winsorizes leverage variables at the 2.5th and 97.5th percentiles instead of the baseline 1st and 99th percentiles. Panel B caps the absolute value of the leverage gap (Target − Actual) at 5 and 3 turns, respectively, limiting the regression influence of extreme-gap observations without dropping them. Panel C uses a range-aware leverage gap: for range disclosers, the gap equals zero when actual leverage falls within the disclosed band and the distance to the nearer bound when outside; for point disclosers, the gap is identical to the baseline. All panels include firm and calendar-quarter fixed effects. Standard errors clustered by firm in parentheses. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels, respectively.