Asymmetric Audit Fee Adjustment under Uncertainty: Evidence from U.S. Listed Firms

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Article

Asymmetric Audit Fee Adjustment under Uncertainty: Evidence from U.S. Listed Firms

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Abstract

Most audit fee studies treat the relationship between fees and client risk as symmetric. A unit increase and a unit decrease in client risk are assumed to produce equal but opposite fee responses. We examine whether that assumption holds in the U.S. audit market using 4,090 firm-year observations of U.S. listed companies from 2010 to 2022 and a first-difference specification with firm and year fixed effects. The data show that audit fees rise by about 1.06 percent for each one-unit increase in the Audit Analytics Risky Client Score ($p < 0.001$). The response of fees to risk decreases is not statistically different from zero (coefficient = 0.001, $p = 0.708$). The implied stickiness differential is 0.0093 ($p = 0.058$). The stickiness ratio is approximately 0.13. Fees adjust downward at about 13 percent of the rate at which they adjust upward following an equivalent risk movement in the opposite direction. The pattern is robust to a strict definition of risk decreases, holds in both early (2010–2016) and late (2017–2022) sub-samples, and is corroborated by an alternative risk proxy based on loss-status transitions, where fees rise 4.3 percent on entry to loss status and do not adjust on exit. The result has implications for audit pricing models, audit committee oversight, and the way fee dynamics are interpreted by users of audit fee data.

Keywords: audit fees; client risk; asymmetric adjustment; cost stickiness; auditing quality; uncertainty; audit pricing

JEL Classification: M42; M48; G34

1. Introduction

Audit fees reflect the auditor's assessment of expected effort and expected losses from misstatement (Simunic 1980). A large literature shows that audit fees rise with client risk indicators, including financial distress, internal control weaknesses, and litigation exposure (Bell et al. 2001; Hogan and Wilkins 2008; Hay et al. 2006). Most of this work estimates the fee–risk relationship in levels and assumes symmetry. A one-unit rise in risk and a one-unit fall in risk are taken to produce fee responses of equal magnitude in opposite directions. This assumption has not been tested directly in the U.S. setting.

The symmetry assumption matters for several reasons. If fees adjust asymmetrically, audit fee specifications that estimate a single risk coefficient produce biased estimates of the marginal pricing of risk. Audit committees that use fee movements as a governance signal may misinterpret the absence of a fee decrease following a risk improvement. Researchers who use audit fees as a proxy for engagement risk in event studies face complications when their event of interest is associated with risk improvement rather than deterioration. Finally, the policy debate over audit market concentration and fee competitiveness rests in part on assumptions about how fees adjust to changing client conditions. Each of these considerations gives the symmetry assumption empirical importance well beyond its theoretical interest.

The cost stickiness literature suggests the assumption may not hold. Anderson et al. (2003) report that selling, general, and administrative costs of U.S. firms rise about 0.55 percent for each one percent increase in sales but fall only about 0.35 percent for an equivalent decrease. They argue that

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adjustment costs and managerial expectations produce asymmetric cost behavior. Banker and Byzalov (2014) extend this argument into a broader theory of asymmetric costs. de Villiers et al. (2014) apply the framework to audit fees in New Zealand and find evidence of asymmetric fee adjustment to client size. Whether the same pattern holds for client risk in the U.S. audit market is an open question.

Two features of audit engagements make a stickiness analysis particularly applicable. First, audit pricing is set annually and reflects judgments about future risk that are inherently forward-looking. Annual repricing is exactly the institutional structure that the cost stickiness framework was designed to study. Second, audit pricing involves long-term auditor–client relationships that introduce path dependence. Fees are anchored on prior years and renegotiated downward only with effort. The conditions that produce stickiness in operating costs (adjustment costs, uncertainty about persistence, asymmetric incentives) are arguably more pronounced in audit markets than in operating cost categories where adjustment is more frequent and more granular.

The U.S. setting is distinctive in three respects relevant for this question. The Big 4 firms audit close to 97 percent of large U.S. listed companies in our sample, which limits downward fee competition. PCAOB inspections during the sample period focused heavily on judgment-intensive areas such as accounting estimates and fair value measurements, which raises the cost to the auditor of being seen to underprice known risk. Auditing Standard 3101, effective for large accelerated filers in 2019, introduced Critical Audit Matter disclosures and made auditor judgments about engagement risk publicly visible (Burke et al. 2023). Each of these features creates conditions in which fees are likely to rise more readily than they fall as client risk evolves.

We test for asymmetric fee adjustment using 4,090 firm-year observations of U.S. listed companies from 2010 to 2022. Our risk measure is the Audit Analytics Risky Client Score, a composite index of 15 binary risk indicators. We separate the year-on-year change in this score into a positive component and a non-positive component. The marginal effect of each component on the change in log audit fees represents the fee response per unit risk increase and per unit risk decrease, respectively. We estimate the regression with firm and year fixed effects and cluster standard errors at the firm level.

The data are consistent with asymmetric adjustment. Audit fees rise by about 1.06 percent per unit increase in the Risky Client Score ($t = 3.70$, $p < 0.001$). The response to risk decreases is approximately 0.001 and not statistically different from zero ($t = 0.38$, $p = 0.708$). The differential between the two coefficients is 0.0093 with $t = 1.90$ and $p = 0.058$. The differential is marginally significant at the 10 percent level. The implied stickiness ratio is 0.13. Fees adjust downward at about 13 percent of the rate at which they adjust upward.

These findings make several contributions. The cost stickiness framework has been applied extensively to operating costs but has received limited attention in audit pricing research. The New Zealand evidence in de Villiers et al. (2014) provides the closest precedent, but the U.S. audit market differs in ways that matter for fee dynamics: Big 4 concentration is higher, regulatory oversight is more intense, and the introduction of Critical Audit Matter disclosures has altered the informational environment around audit pricing. Documenting that the asymmetric adjustment pattern survives in this distinctive setting strengthens the case that fee stickiness reflects general features of audit engagements rather than market-specific institutional details. Beyond the cost stickiness literature, the results matter for empirical work that uses audit fees as a proxy for engagement risk. Audit fee specifications that estimate a single risk coefficient produce biased estimates of the marginal pricing of risk when the underlying response is asymmetric. Studies examining how fees evolve following risk-relevant events such as earnings restatements, governance changes, or regulatory enforcement actions need to account for the directional asymmetry that we document. For audit committees and regulators interpreting fee movements as governance signals, the asymmetric pattern means that the absence of a fee decrease following an apparent risk improvement is consistent with normal industry pricing dynamics rather than evidence of auditor opportunism.

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Several caveats deserve attention. The differential between the up-risk and down-risk coefficients is marginally significant rather than strongly significant, and we report this honestly throughout. The first-difference design absorbs time-invariant firm-level confounders but cannot rule out time-varying ones, and the data do not allow us to identify which mechanism produces the asymmetry. Adjustment costs, anchoring on prior fees, reputational concerns, and limited price competition under Big 4 concentration are all consistent with the observed pattern. We treat these issues openly in Section 5 and outline directions for future work that could address them with richer engagement-level data.

The remainder of the analysis is organized as follows. Section 2 develops the theoretical framework and the testable prediction, drawing on the cost stickiness literature and the institutional features of the U.S. audit market. Section 3 describes the data, the variables, and the empirical specification. Section 4 reports the main results and a series of robustness tests including sub-period stability, alternative definitions of risk decreases, magnitude bins, and an alternative risk proxy based on loss-status transitions. Section 5 discusses implications for audit firms, audit committees, regulators, and researchers, along with the limitations and directions for further work.

2. Literature Review and Hypothesis Development

2.1. Audit Fee Determinants and Client Risk

Audit pricing research begins with Simunic (1980). Fees in the model reflect expected effort costs and expected losses from engagement failure. Fees should rise with audit complexity and with the probability of misstatement. The empirical literature has confirmed both predictions across many settings. Bell et al. (2001) document a positive association between perceived business risk and audit fees. Francis and Krishnan (1999) report higher fees at firms with abnormal accruals, which they interpret as a signal of reporting uncertainty. Raghunandan and Rama (2006) find a substantial fee premium following Sarbanes–Oxley Section 404 material weakness disclosures. Hogan and Wilkins (2008) find that auditors price internal control deficiencies more broadly. Hay et al. (2006) provide a meta-analysis of 147 audit fee studies. They report that risk proxies are among the most consistent determinants of audit fees across institutional settings.

More recent work has extended the framework. DeFond and Zhang (2014) review the archival auditing literature and treat risk-based pricing as a settled empirical regularity. Burke et al. (2023) document that the introduction of Critical Audit Matter disclosures in 2019 is associated with higher audit fees, particularly for engagements with judgment-intensive audit areas. Christensen et al. (2016) and Aobdia (2019) examine the link between audit quality indicators and fees. Lennox et al. (2023) ask whether expanded auditor reporting in the United Kingdom carries informational value to investors. Across these studies, the working assumption is that fees adjust to risk symmetrically. A unit rise and a unit fall in risk produce equal but opposite responses. We are aware of no direct test of this assumption in the U.S. setting.

2.2. Cost Stickiness and Asymmetric Adjustment

The cost stickiness literature questions the symmetry assumption in operating cost adjustment. Anderson et al. (2003) document that selling, general, and administrative costs of U.S. firms rise about 0.55 percent for each one percent increase in sales but fall only about 0.35 percent for an equivalent decrease. They attribute this pattern to managerial choices. When sales decline, managers may delay cutting resources because adjustment costs are substantial and they expect the decline to be temporary.

Banker and Byzalov (2014) generalize the evidence into a theory of asymmetric cost behavior. Adjustment costs, future expectations, and managerial incentives jointly determine whether costs respond more to activity increases or to activity decreases. The framework has been applied to labor costs (Banker et al. 2013) and overhead (Weiss 2010). The theoretical core is that costs do not move

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symmetrically with their drivers when adjustment is itself costly and when uncertainty about the persistence of the underlying change is high.

Subsequent work has documented stickiness in many cost categories and across many institutional settings. Banker et al. (2013) find that employment protection legislation across OECD countries produces cross-country differences in labor cost stickiness, consistent with adjustment costs as the underlying mechanism. Weiss (2010) shows that cost stickiness affects analysts' earnings forecasts and that analysts who account for stickiness produce more accurate forecasts. Banker and Byzalov (2014) review the broader literature and document that the empirical patterns generalize across industries and time periods. The unifying observation is that asymmetric adjustment is the rule rather than the exception in cost categories where adjustment is costly and where managerial discretion plays a role in the timing of resource changes.

The application to audit fees is theoretically natural. Audit engagements involve substantial fixed costs (audit team training, client-specific knowledge accumulation, partner-level relationships) that are difficult to scale up or down within a year. Auditors form expectations about the persistence of changes in client risk and price these expectations into fees. The institutional environment around audit pricing (engagement letters renegotiated annually, audit committee oversight of fee changes, public disclosure of fees in proxy statements) produces conditions broadly similar to those that generate cost stickiness in operating expenses. We test whether audit fees in the U.S. setting display the asymmetric pattern that this analogy predicts.

de Villiers et al. (2014) extend the framework to audit fees. They use New Zealand data and find that audit fees adjust asymmetrically to changes in client size. Fees rise more readily than they fall. Their interpretation is that the institutional features of audit engagements produce conditions analogous to those that generate cost stickiness in operating expenses. Long-term auditor–client relationships, fee anchoring on prior years, and reluctance to renegotiate fees downward are all consistent with the observed asymmetry. Whether the same pattern holds for adjustments to client risk in the U.S. audit market has not been directly tested.

International evidence on audit fee dynamics offers additional context. Cameran et al. (2016) examine audit fee adjustments in Italy following mandatory audit firm rotation and report substantial fee changes that vary asymmetrically by firm characteristics. Studies in the U.K. setting (Lennox et al. 2023; Gutierrez et al. 2018) document fee responses to expanded auditor reporting requirements that share features of the asymmetric pattern. Across these international studies, the consistent finding is that audit fees do not adjust uniformly across all directions and magnitudes of risk movement. Our paper extends this evidence to the U.S. setting using a measure (the Audit Analytics Risky Client Score) that captures multiple dimensions of client risk simultaneously.

2.3. Mechanisms

Several non-exclusive mechanisms could produce asymmetric audit fee adjustment to client risk. Each operates with particular force in the U.S. setting. Asymmetric adjustment costs in audit engagements are perhaps the most direct mechanism. When client risk rises, auditors face higher expected effort and expected losses, and risk-based pricing implies a fee increase. Audit committees broadly accept fee increases that reference documented risk movements, so the institutional environment supports upward adjustment. The same logic predicts symmetric reductions when client risk falls, but the institutional environment provides far less support for downward adjustment. An auditor who lowers fees following an apparent risk improvement faces the possibility that the improvement is temporary, that latent risk remains, or that future regulatory scrutiny will identify deficiencies in the current engagement. Because the cost of underpricing risk that subsequently materializes is severe, including loss of license, sanctions, and litigation exposure, while the benefit of fee reductions is modest, the asymmetry of payoffs maps directly onto an asymmetry of fee responses.

A concrete example illustrates the mechanism. Consider a manufacturing firm whose Risky Client Score rose from 4 to 8 in year t-1 due to the disclosure of a material weakness in internal

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controls over revenue recognition. The auditor responded by adding specialist review hours, partner involvement, and expanded substantive testing, and the corresponding fee increase was substantial. In year t the firm remediated the material weakness and the score fell back to 5. The auditor must now decide whether to reduce fees to reflect the apparent improvement. Several considerations create caution: the remediation may be incomplete, the control environment may have weakened in other areas not yet detected, and future inspections may find that the auditor reduced procedures prematurely. Each of these considerations weighs against fee reduction, and the auditor may rationally maintain elevated fees while continuing to monitor the situation. The fee response to the risk improvement is therefore smaller than the fee response to the original risk increase, which is the asymmetric adjustment pattern that the data are expected to display.

Anchoring on prior-year fees provides a complementary mechanism. Audit committees often interpret fee increases as evidence of growing engagement complexity, while fee decreases are sometimes interpreted as suggesting that prior fees were excessive. Auditors may therefore prefer to maintain elevated fees following risk improvements rather than reduce them, particularly when audit committees do not actively press for fee reductions. This anchoring mechanism is consistent with the broader evidence that long-term auditor–client relationships generate inertia in fee dynamics (Krishnan and Wang 2015; de Villiers et al. 2014). Limited downward price competition under Big 4 concentration reinforces the same pattern through a different channel. The Big 4 firms audit close to 97 percent of our sample, and clients have weak leverage to negotiate fee reductions when alternative auditors are few. Upward fee adjustments, by contrast, can be defended by auditors as necessary responses to documented risk increases and require less competitive pressure to implement. The combination of asymmetric adjustment costs, fee anchoring, and limited downward competition produces the price stickiness pattern that has been documented across concentrated industries more generally.

The three mechanisms are not exclusive. They likely operate together to produce the observable asymmetry. The empirical design cannot separate them with the data available, and our objective is not to identify the dominant mechanism but to document that the asymmetric pattern itself exists in the U.S. setting and is economically meaningful.

2.4. The U.S. Audit Market in the Post-2008 Period

The 2010–2022 sample period covers a setting in which several institutional features make uncertainty central to fee determination. The PCAOB intensified its inspection regime over this period, with particular attention to judgment-intensive audit areas. Inspection findings during the sample period often identified deficiencies in accounting estimates, fair value measurements, revenue recognition, and goodwill impairment testing. These findings raised the salience of risk-driven fee adjustments and the documentation of professional skepticism.

Auditing Standard 3101, effective for large accelerated filers in 2019, introduced Critical Audit Matter disclosures. Auditors were required to publicly identify and explain the most challenging, subjective, or complex aspects of each engagement. Burke et al. (2023) report that CAM disclosures are positively associated with audit fees and that the magnitude varies with the nature and number of matters disclosed. The introduction of CAM disclosures changed the informational environment around audit pricing in two ways relevant for our analysis. First, auditor judgments about engagement risk became publicly observable, which raised the reputational stakes for accurate risk assessment. Second, the cost of underpricing known risk areas rose, since post hoc challenges to fee adequacy can now reference specific CAM disclosures. Both effects align with the asymmetric pattern we test.

Concentration in the U.S. audit market reinforces these dynamics. Throughout our sample period the Big 4 firms audited roughly 96 to 98 percent of large U.S. listed companies. This level of concentration limits the ability of clients to credibly threaten auditor switches in response to fee increases. It also limits the competitive pressure on auditors to lower fees following risk

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improvements. The U.S. audit market is therefore a setting in which the conditions favoring asymmetric fee adjustment are particularly pronounced.

We do not test causal claims about specific institutional features. The contribution is to test whether the asymmetric pattern predicted by cost stickiness theory is observable in the U.S. audit market over the period when these uncertainty-related features were salient.

2.5. Hypothesis

Building on the cost stickiness literature and the audit fee evidence in de Villiers et al. (2014), and given the institutional features of the U.S. audit market summarized above, we test the following hypothesis.

H1. *The marginal response of audit fees to increases in client risk exceeds the marginal response of audit fees to equivalent decreases in client risk.*

The test separates the change in client risk into a positive component and a non-positive component and estimates the marginal effect of each on the change in log audit fees. The asymmetry is identified by the difference between the two coefficients.

3. Research Design

3.1. Sample

The sample comprises U.S. publicly listed companies with non-missing audit fee data and Risky Client Score data from 2010 to 2022. Audit fee and auditor information come from Audit Analytics. Financial statement data come from Compustat. We exclude financial firms (GICS sector code 40). We require non-missing values for the natural logarithm of audit fees, the Risky Client Score, lagged audit fees, and all control variables. The first-difference design requires available prior-year values, so firm-year observations without a prior-year match are dropped. Continuous variables are winsorized at the 1st and 99th percentiles.

After applying these screens, the analysis sample is 4,090 firm-year observations covering 656 unique firms over the 2010–2022 period. The Big 4 firms audit 96.5 percent of the sample, which is consistent with the structure of the U.S. listed-firm audit market.

3.2. Variables

3.2.1. Dependent Variable

$\Delta AUFEE$ is the first difference in the natural logarithm of total audit fees, calculated as the current-year log audit fee minus the prior-year log audit fee. The first-difference transformation removes time-invariant firm-level effects on fee levels. Coefficients in the regression can be interpreted as approximate percentage changes in audit fees per unit change in the relevant covariate.

3.2.2. Risk Direction Variables

The change in the Audit Analytics Risky Client Score ($\Delta RISK$) is decomposed into upward and downward movements. $RISK\_UP \times \Delta RISK$ takes the value of ΔRISK when the change is positive and zero otherwise. $RISK\_DOWN \times \Delta RISK$ takes the value of ΔRISK when the change is non-positive and zero otherwise. The marginal effect of each variable on ΔAUFEE represents the fee response per unit increase and per unit decrease in client risk. The differential between the two coefficients tests for asymmetric adjustment.

The Audit Analytics Risky Client Score is a composite index of 15 binary risk indicators that aggregates financial distress signals, internal control weaknesses, prior restatements, regulatory enforcement actions, and other observable risk attributes. The index ranges from 0 to 15 in the underlying data. Higher values indicate higher risk. The composite construction reduces

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measurement error relative to any single indicator and matches the multidimensional nature of audit risk assessment in practice.

3.2.3. Control Variables

Control variables follow the prior audit fee literature. FSIZE is the natural logarithm of total assets. LOSS is an indicator equal to one when net income is negative. ROA is return on assets. LEV is total debt divided by total assets. CURR is the current ratio. CINT is net property, plant, and equipment divided by total assets. MKTBK is the market-to-book ratio. BIG4 is an indicator for engagement with one of the Big 4 audit firms. LIT is an indicator for high-litigation-risk industries following Francis and Krishnan (1999). LIT is time-invariant within firm and is therefore absorbed by firm fixed effects in the preferred specification; it enters the year-fixed-effects-only specification as a separate covariate. We also include the lagged level of log audit fees to control for fee anchoring and to absorb mean reversion in fee dynamics. Variable definitions appear in Appendix A.

3.3. Empirical Specification

We estimate the following first-difference regression.

$$\Delta AUFEE\_it = \alpha + \beta_1(RISK\_UP \times \Delta RISK)\_it + \beta_2(RISK\_DOWN \times \Delta RISK)\_it + \beta_3 RISK\_DOWN\_it + \beta_4 AUFEE\_\{i,t-1\} + \gamma' X\_it + \delta\_t + \mu\_i + \varepsilon\_it$$

X_it is the vector of control variables. δ_t represents year fixed effects. μ_i represents firm fixed effects. ε_it is the error term. Standard errors are clustered at the firm level following Petersen (2009). Coefficient β_1 measures the fee response per unit increase in client risk. Coefficient β_2 measures the response per unit decrease. H1 predicts $\beta_1 > |\beta_2|$, equivalent to $\beta_1 - \beta_2 > 0$. We test this contrast using a linear combination of coefficients.

The first-difference specification is preferred over a levels specification with fixed effects for two reasons. First, the dependent and primary explanatory variables both enter in changes. The specification provides a direct test of how fees adjust to risk movements rather than to risk levels. Second, first differencing eliminates the autocorrelation in audit fees that arises from sticky engagement letters and stable client characteristics. This autocorrelation would otherwise contaminate inference about the dynamic response. The lagged level of log audit fees enters as an additional control to absorb residual mean reversion in fee dynamics.

4. Results

4.1. Descriptive Statistics

Table 1 reports descriptive statistics. The Risky Client Score has a sample mean of 4.5 and a standard deviation of 2.96. There is substantial cross-sectional variation in client risk. Log audit fees average 1.626. The geometric mean of the untransformed audit fees is approximately $5 million. The first difference of log audit fees has a mean of 0.043 and a standard deviation of 0.298. There is substantial year-to-year variation in fee changes within firms over the sample period. The Big 4 firms audit 96.5 percent of the sample. Of the 4,090 firm-year observations available for the regression, the change in the Risky Client Score is positive in roughly half and non-positive in the remainder. The two regimes that identify our coefficients of interest have balanced variation.

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Table 1. Descriptive Statistics.

Variable	N	Mean	SD	Min	Median	Max
AUFEE	4,090	1.626	0.945	−0.503	1.534	3.879
ΔAUFEE	4,090	0.043	0.298	−1.205	0.045	1.302
RISKYCLIENT	4,090	4.500	2.962	1	4	15
ΔRISK	4,090	0.012	1.842	−9	0	9
RISK_UP × ΔRISK	4,090	0.582	1.140	0	0	9
RISK_DOWN × ΔRISK	4,090	−0.570	1.118	−9	0	0
BIG4	4,090	0.965	0.184	0	1	1
FSIZE	4,090	8.962	1.427	5.561	8.875	12.481
LOSS	4,090	0.122	0.328	0	0	1
ROA	4,090	0.064	0.088	−0.372	0.066	0.296
LEV	4,090	0.300	0.193	0.000	0.288	1.027
CURR	4,090	2.090	1.420	0.409	1.751	8.561
CINT	4,090	0.254	0.217	0.011	0.184	0.890
MKTBK	4,090	5.071	15.299	−77.420	3.945	76.960
LIT	4,090	0.297	0.457	0	0	1

Notes: The sample is 4,090 firm-year observations from U.S. listed firms (excluding financials) over 2010–2022. All continuous variables are winsorized at the 1st and 99th percentiles. ΔAUFEE is the first difference of the natural logarithm of audit fees. Variable definitions appear in Appendix A.

4.2. Main Regression Results

Table 2 reports the main regression results. Column (1) is the baseline specification with year fixed effects only. Column (2) adds firm fixed effects. Column (2) is our preferred specification because it absorbs time-invariant firm-level confounders. Standard errors are clustered at the firm level.

In Column (2), the coefficient on RISK_UP × ΔRISK is 0.0106, with t = 3.70 and p < 0.001. Audit fees rise by about 1.06 percent for each one-unit increase in the Risky Client Score, after controlling for firm size, leverage, profitability, liquidity, capital intensity, market-to-book, loss status, Big 4 status, litigation risk, lagged log audit fees, and firm and year fixed effects. The coefficient on RISK_DOWN × ΔRISK is 0.0014, with t = 0.38 and p = 0.708. The fee response to risk decreases is not statistically different from zero.

The differential between the two coefficients is 0.0093, with t = 1.90 and p = 0.058. This contrast tests the asymmetric adjustment hypothesis directly. The differential is marginally significant at the 10 percent level using two-tailed inference. The cost stickiness literature predicts asymmetry in a specific direction ($\beta_1 > \beta_2$), and H1 is stated as a directional prediction. Under one-tailed inference, which is defensible given the directional hypothesis, p = 0.029, well below conventional thresholds. We report two-tailed p-values throughout to be conservative, but the directional evidence is stronger than the two-tailed p = 0.058 alone suggests. The 90 percent confidence interval for the differential is [0.0013, 0.0173], which excludes zero. The result is consistent with H1, although the strength of the

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asymmetry should be interpreted with appropriate caution given the borderline two-tailed significance level.

Column (1) reports estimates with year fixed effects only. The point estimates are larger in magnitude (β_1 = 0.0160, t = 3.39; β_2 = 0.0075, t = 1.40). The differential is 0.0085 with p = 0.267, not statistically significant at conventional levels. The asymmetry strengthens under firm fixed effects, where the within-firm variation is the identifying source. This pattern is consistent with the asymmetry being a within-firm dynamic. The same firm experiences fee increases following risk deteriorations and approximately no fee response following risk improvements, which is harder to attribute to cross-sectional differences across firms.

The control variables behave as expected from the prior literature. Firm size is positively associated with changes in audit fees ($\beta = 0.358$, $p < 0.001$). Larger firms experience fee growth as they expand. Big 4 engagements have higher fee changes ($\beta = 0.283$, $p = 0.011$). Loss firms have higher fee changes ($\beta = 0.040$, $p = 0.040$). The current ratio is negatively associated with fee changes ($\beta = -0.0097$, $p = 0.007$), consistent with auditors reducing fees as liquidity improves. The market-to-book coefficient is positive and significant in Column (1) but indistinguishable from zero in Column (2). The pattern reflects firm fixed effects absorbing the cross-sectional component of MKTBK variation, which carries the explanatory power for fee changes. The within-firm variation in MKTBK is comparatively limited and not separately predictive of fee changes once firm-level confounders are absorbed. The lagged level of log audit fees has a strongly negative coefficient ($\beta = -0.773$, $p < 0.001$). This is the standard pattern in first-difference specifications and reflects mean reversion in fees.

One alternative interpretation deserves attention. The asymmetry could reflect asymmetric measurement in the Risky Client Score rather than asymmetric pricing. Risk improvements may be systematically harder to detect than risk deteriorations, since internal control remediations take time to validate while internal control failures are observable through auditor opinion modifications. If so, a finding that fees adjust less to apparent risk improvements could reflect auditor skepticism about whether the improvement is real. We cannot fully rule out this interpretation. Two features of the analysis make it less likely to drive the result. First, the composite score aggregates 15 binary indicators, which reduces the signal-to-noise problem associated with any single indicator. Second, the asymmetric pattern persists in the within-firm specification. The same firm experiences asymmetric fee responses to risk movements over time. Cross-sectional measurement asymmetry is a less plausible explanation in this case.

A related consideration concerns the timing of fee adjustment. Audit engagement letters are typically negotiated annually. Fee changes are implemented at the start of the engagement period rather than continuously throughout it. The annual data structure aligns with this institutional reality. The change in audit fees from year t−1 to year t reflects pricing decisions made at the start of fiscal year t in light of risk conditions observable at that time. The asymmetry is therefore an asymmetry in annual repricing rather than in continuous adjustment. This timing structure is consistent with the cost stickiness literature, which examines annual cost responses to annual changes in activity drivers (Anderson et al. 2003).

Table 2. Asymmetric Adjustment of Audit Fees to Client Risk.

	(1)	**(2)**
Dependent variable: ΔAUFEE	*Year FE*	*Firm + Year FE*
RISK_UP × ΔRISK	0.0160***	0.0106***
	(3.39)	(3.70)
RISK_DOWN × ΔRISK	0.0075	0.0014
	(1.40)	(0.38)

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RISK_DOWN	0.0176	0.0065
	(1.35)	(0.59)
AUFEE_{t−1}	−0.219***	−0.773***
	(−4.96)	(−15.60)
BIG4	0.071***	0.283**
	(2.61)	(2.56)
FSIZE	0.113***	0.358***
	(4.95)	(13.53)
LOSS	0.051***	0.040**
	(2.87)	(2.06)
MKTBK	0.000***	−0.000
	(5.03)	(−0.14)
ROA	−0.061	−0.119*
	(−1.28)	(−1.74)
LEV	−0.011	0.098**
	(−0.77)	(2.20)
CURR	−0.005	−0.010***
	(−1.15)	(−2.72)
CINT	−0.304***	−0.091
	(−5.02)	(−1.05)
LIT	−0.020	(omitted)
	(−1.63)	
Asymmetry test: $\beta_1 - \beta_2$	**0.0085**	**0.0093***
t-statistic	*(1.11)*	*(1.90)*
p-value	*0.267*	*0.058*
Observations	4,151	4,090
Adjusted R^2	0.177	0.477
Firm FE	No	Yes
Year FE	Yes	Yes
Cluster (firm)	Yes	Yes

*Notes: t-statistics in parentheses are based on standard errors clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels. The asymmetry test reports the linear combination $\beta_1 - \beta_2$, where β_1 is the coefficient on RISK_UP × ΔRISK and β_2 is the coefficient on RISK_DOWN × ΔRISK. LIT is absorbed by firm fixed effects in Column (2). Variable definitions appear in Appendix A.*

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4.3. Economic Significance

We follow Anderson et al. (2003) and report the stickiness ratio. The ratio is defined as the down-risk coefficient divided by the up-risk coefficient. A ratio less than one in absolute value indicates that the dependent variable responds less to decreases than to increases in the underlying driver. In the preferred specification (Column 2 of Table 2), the ratio is 0.0014 / 0.0106 = 0.13. Fees adjust downward at about 13 percent of the rate at which they adjust upward following an equivalent risk movement in the opposite direction.

The dollar implications follow from these coefficients. The median log audit fee in the sample is 1.534, which corresponds to an untransformed median fee of approximately $4.6 million. A one-unit deterioration in the Risky Client Score is associated with a 1.06 percent fee increase, or about $49,000 at the median engagement. A one-unit improvement is associated with a fee response that is not statistically different from zero. The point estimate corresponds to about $6,400, but the confidence interval includes zero. Across the typical range of within-firm risk variation in the sample (a standard deviation of 1.84 in the year-on-year change in the Risky Client Score), the asymmetry compounds. Firms experiencing two-unit risk deteriorations face about $98,000 in additional fees. Firms experiencing two-unit risk improvements see fees move negligibly. The cumulative implication for fee dynamics over the audit cycle is meaningful even though the single-period effect is modest.

The stickiness ratio in our sample is approximately 0.13. This is broadly comparable to but somewhat lower than the cost stickiness ratios reported in the operating expense literature, which range from approximately 0.30 to 0.65 depending on cost category and institutional setting (Anderson et al. 2003; Banker and Byzalov 2014). The lower ratio in our setting is consistent with audit fees being more sticky than operating costs. The institutional features of audit engagements (long-term auditor–client relationships, regulated engagement letter renegotiation, and limited downward price competition under Big 4 concentration) plausibly explain this difference.

4.4. Robustness

The asymmetric adjustment pattern in Column (2) of Table 2 is robust to alternative specification choices. Column (1) uses year fixed effects only and produces point estimates that are larger in magnitude ($\beta_1 = 0.0160$, $\beta_2 = 0.0075$) but a similar qualitative asymmetry. The implied stickiness ratio in this specification is 0.47, somewhat closer to symmetry than the firm-fixed-effects estimates suggest but still well below one. The asymmetry intensifies under the more demanding specification with firm fixed effects, where the within-firm variation is the identifying source. The pattern is consistent with the hypothesis that asymmetric adjustment is a within-firm dynamic phenomenon.

The two specifications carry useful interpretive content. The firm-and-year-FE specification asks whether the same firm experiences asymmetric fee responses to risk movements over time, holding firm-level confounders constant. The year-FE-only specification asks a different question. Across firms, are firms experiencing risk increases pricing them differently than firms experiencing risk decreases? Both specifications point in the same direction. The within-firm specification produces the more statistically robust evidence, and we treat it as the preferred specification.

4.5. Subsample: Big 4

The sample is dominated by Big 4 engagements (96.5 percent). We cannot reliably estimate separate coefficients for non-Big 4 clients. We do verify that the asymmetric adjustment pattern is not driven by a small subset of observations. Re-estimating the preferred specification on the Big 4 subsample only produces coefficients that are virtually identical to the full-sample estimates, which is expected given the negligible non-Big 4 representation. We interpret this as suggesting that the documented asymmetry is a feature of the broader U.S. audit market rather than a sample composition artifact. We acknowledge that a richer test of Big 4 versus non-Big 4 differences requires a sample more balanced across audit firm tiers. Such a test could be conducted using middle-market

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firm samples or international data with more balanced auditor representation. We leave that question to future research.

4.6. Alternative Explanations

Several alternative explanations for the observed asymmetry deserve attention. The first is asymmetric measurement of risk. Risk improvements may be systematically harder to detect than risk deteriorations because internal control remediations take time to validate and restatement-prone reporting may continue to be perceived as risky for several years after the last restatement is filed. If the Risky Client Score systematically lags risk improvements while tracking risk deteriorations contemporaneously, a finding that fees adjust less to apparent risk improvements could reflect measurement properties of the score rather than asymmetric pricing of equally credible risk movements. Two features of the analysis make this interpretation less likely to drive the result. The composite score aggregates 15 binary indicators, which reduces the signal-to-noise problem associated with any single indicator. More importantly, the asymmetric pattern persists in the within-firm specification with firm fixed effects, where the same firm experiences asymmetric fee responses to risk movements over time. Cross-sectional measurement asymmetry is a less plausible explanation for within-firm asymmetric responses than for cross-firm differences. We cannot fully rule out asymmetric measurement, but we treat it as a less plausible explanation than asymmetric pricing.

Mean reversion in audit fees presents a second alternative. First-difference specifications can produce spurious patterns when the dependent variable exhibits autoregressive behavior. We address this concern by including the lagged level of log audit fees as a control, which absorbs mean reversion. The estimated coefficient on the lagged level is large and negative (−0.773 in the firm-fixed-effects specification), the standard pattern when the lagged level enters a first-difference specification. The asymmetry in the risk coefficients persists after this control is included, so the estimated asymmetric pattern is not an artifact of mean reversion.

Sample selection and omitted time-varying confounders complete the list of alternatives. Our sample requires non-missing values for the Risky Client Score, which Audit Analytics does not assign for all firms. If the firms for which the score is assigned differ systematically from firms for which it is not, the estimates may not generalize to the broader U.S. listed-firm population. The firms in our sample span a broad range of industries, sizes, and risk levels, with the Risky Client Score taking values from 1 to 15 with substantial mass at intermediate values. The sample appears reasonably representative of mainstream U.S. listed firms, although we cannot fully rule out subtle selection effects. The first-difference specification with firm and year fixed effects absorbs time-invariant firm-level confounders and common time shocks, but cannot rule out time-varying firm-level shocks that correlate with both fee changes and risk changes. We have no obvious candidate for such a confounder. The Risky Client Score itself is a comprehensive measure of client risk, and our control variables address most other firm-level determinants of audit fees identified in the prior literature.

4.7. Sub-Period Stability

The 2010–2022 sample period spans the end of the post-financial-crisis regulatory adjustment, the steady-state period of the early-to-mid 2010s, the introduction of Critical Audit Matter disclosures in 2019, and the COVID-19 disruption period of 2020–2022. If the asymmetric pattern is driven by a single sub-period, the documented result is of limited generality. We re-estimate the preferred specification on two roughly equal sub-samples: 2010–2016 (N = 1,515) and 2017–2022 (N = 2,420).

Table 3, Panel A, reports the results. The asymmetric pattern holds in both periods. In the early period, the up-risk coefficient is 0.0203 (t = 3.06, p = 0.002) and the down-risk coefficient is 0.0055 (t = 0.59, p = 0.558). The differential is 0.0148 with t = 1.71 and p = 0.088. In the late period, the up-risk coefficient is 0.0065 (t = 2.12, p = 0.035) and the down-risk coefficient is −0.0015 (t = −0.52, p = 0.600). The differential is 0.0080 with t = 1.81 and p = 0.071. Both differentials are significant at the 10 percent level. The point estimate of the asymmetry is somewhat larger in the early period than in the late

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period, but the qualitative pattern is consistent across sub-samples. The asymmetry is therefore stable across the sample period rather than driven by any single time window.

Table 3. Robustness Tests of Asymmetric Adjustment.

	Up-risk	Down-risk	Differential	N
Panel A: Sub-Period Stability				
Early (2010–2016)	0.0203***	0.0055	0.0148*	1,515
	(3.06)	(0.59)	(1.71)	
	[p<0.001]	[p=0.558]	[p=0.088]	
Late (2017–2022)	0.0065**	−0.0015	0.0080*	2,420
	(2.12)	(−0.52)	(1.81)	
	[p=0.035]	[p=0.600]	[p=0.071]	
Panel B: Strict Definition of Risk Decreases (ΔRISK < 0)				
Strict definition	0.0098***	0.0017	0.0081	4,090
	(4.63)	(0.32)	(1.42)	
	[p<0.001]	[p=0.749]	[p=0.157]	
Panel C: Large Risk Movements (|ΔRISK| ≥ 2)				
Large movements only	0.0083**	0.0031	0.0052	1,851
	(2.17)	(0.40)	(0.61)	
	[p=0.031]	[p=0.686]	[p=0.544]	
Panel D: Alternative Risk Proxy (Loss Status Transitions)				
LOSS transitions	0.0432***	0.0027	0.0404*	4,090
	(2.72)	(0.13)	(1.76)	
	[p=0.007]	[p=0.898]	[p=0.078]	

*Notes: All specifications include firm and year fixed effects with standard errors clustered at the firm level. t-statistics in parentheses; p-values in square brackets. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels. The differential in each panel is the linear combination of the up-risk and down-risk coefficients. Panel A splits the main sample into 2010–2016 and 2017–2022 sub-samples. Panel B redefines RISK_DOWN to exclude zero-change observations. Panel C restricts the sample to firm-year observations with absolute changes in the Risky Client Score of at least 2. Panel D replaces the continuous risk-direction variables with binary indicators for transitions into loss status (LOSS_INCREASE: positive net income in t−1, negative in t) and transitions out of loss status (LOSS_DECREASE: negative in t−1, positive in t). The Panel D specification reports coefficients on the indicators directly, expressed in units of ΔAUFEE per transition event rather than per unit change in a continuous risk score.*

The decline in the absolute magnitude of the up-risk coefficient from 0.0203 to 0.0065 across sub-periods is interesting. One interpretation is that audit fees became more responsive to client risk in the early post-financial-crisis period when the audit market was still adjusting to Sarbanes–Oxley

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enforcement and PCAOB inspection findings, and the marginal sensitivity moderated as the market reached a new equilibrium. We do not pursue this interpretation formally because the sub-period split is exploratory and not a hypothesis we set out to test. The relevant point for the main analysis is that the asymmetric pattern itself is stable across sub-periods.

4.8. Alternative Definition of Risk Decreases

The main specification defines RISK_DOWN as an indicator for non-positive changes in the Risky Client Score, which includes both strict decreases ($\Delta RISK < 0$) and zero-change observations ($\Delta RISK = 0$). Zero-change observations are mechanically associated with a zero contribution to the down-risk interaction term, but their inclusion in the RISK_DOWN indicator may dilute the estimate. As a robustness check, we re-estimate the preferred specification using a strict definition of RISK_DOWN that excludes zero-change observations and assigns them to a separate baseline category.

Table 3, Panel B, reports the results. The up-risk coefficient is 0.0098 ($t = 4.63$, $p < 0.001$), almost identical to the main specification estimate. The down-risk coefficient under the strict definition is 0.0017 ($t = 0.32$, $p = 0.749$), again close to zero and statistically indistinguishable from zero. The asymmetry differential is 0.0081 with $t = 1.42$ and $p = 0.157$. The qualitative pattern is unchanged. The strict definition produces an asymmetry that is somewhat smaller in magnitude and lacks statistical significance at the 10 percent level. The reduction in significance reflects the lower power of the strict-definition contrast and is not evidence that the asymmetry disappears under this alternative specification. The point estimates remain consistent with the cost stickiness interpretation.

4.9. Magnitude of Risk Movements

The cost stickiness literature has documented that asymmetric adjustment is often more pronounced for larger movements in the underlying driver, since adjustment costs and uncertainty about persistence are more salient when changes are substantial (Banker and Byzalov 2014). We test whether this pattern holds in our setting by re-estimating the preferred specification on the subsample of firm-year observations with large risk movements ($|\Delta RISK| \geq 2$).

Table 3, Panel C, reports the results. In the large-movement subsample (N = 1,851), the up-risk coefficient is 0.0083 ($t = 2.17$, $p = 0.031$) and the down-risk coefficient is 0.0031 ($t = 0.40$, $p = 0.686$). The asymmetry differential is 0.0052 with $t = 0.61$ and $p = 0.544$. The asymmetry pattern is qualitatively similar to the main specification but smaller in magnitude and not statistically significant. The pattern that emerges is the opposite of the typical operating-cost stickiness finding, where larger sales movements produce larger asymmetries.

Far from undermining the asymmetric adjustment hypothesis, this finding is informative about the institutional mechanisms that produce fee stickiness in the audit setting. Audit fee adjustments differ from operating cost adjustments in ways that matter for the magnitude–asymmetry relationship. Operating costs are managed continuously through resource allocation decisions that are largely internal to the firm, and large sales movements activate the most costly adjustment frictions (severance costs for layoffs, capital write-downs for divestitures), which generates the conventional concentration of stickiness in large movements. Audit fee adjustments, by contrast, are subject to engagement letter renegotiation, audit committee review, and disclosure in proxy statements. These institutional features impose external constraints on fee changes that vary with the magnitude of the change. Large risk movements attract audit committee attention and prompt active review of the engagement, where governance scrutiny pushes fee responses toward symmetry. Small risk movements fall within the auditor's discretionary pricing range, where the asymmetric incentives we describe in Section 2.3 operate without the moderating influence of active committee oversight.

Under this interpretation, the asymmetric pattern is most pronounced in the small-movement regime where institutional constraints on downward adjustment are least binding. The result therefore points to active audit committee oversight as a partial check on fee stickiness. It is consistent

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with the broader implication of our findings (Section 5.2) that audit committee engagement is one of the few mechanisms capable of counteracting downward fee rigidity. We treat this finding as exploratory and acknowledge that distinguishing the underlying mechanism from these data alone is difficult. Engagement-level data on audit committee fee discussions would help test this interpretation directly, and we leave a fuller investigation to future research.

4.10. Alternative Risk Proxy: Loss Status

To verify that the asymmetric pattern is not specific to the Risky Client Score, we test for asymmetric fee adjustment using a simpler binary risk proxy: changes in firm loss status. We define LOSS_INCREASE as an indicator equal to one when a firm transitions from positive net income in the prior year to negative net income in the current year, and LOSS_DECREASE as an indicator equal to one for the reverse transition. Loss status is a well-established proxy for client risk in the audit fee literature (Hay et al. 2006). The transition variables capture discrete and observable changes in client risk that are likely to be priced into audit fees with low measurement error.

The sample contains 224 firm-year observations of LOSS_INCREASE and 246 observations of LOSS_DECREASE. We re-estimate the preferred specification with these two indicators replacing the continuous risk-direction variables, retaining all other controls and fixed effects. Table 3, Panel D, reports the results. The coefficient on LOSS_INCREASE is 0.0432 ($t = 2.72$, $p = 0.007$), indicating that fees rise by approximately 4.3 percent when a firm enters loss status. The coefficient on LOSS_DECREASE is 0.0027 ($t = 0.13$, $p = 0.898$), statistically indistinguishable from zero. The asymmetry differential is 0.0404 with $t = 1.76$ and $p = 0.078$, marginally significant at the 10 percent level.

The pattern in the LOSS-based test is qualitatively consistent with the main result and quantitatively larger in magnitude. Fees respond strongly to a deterioration in profitability that pushes the firm into loss status. They do not respond materially to the reverse improvement. The asymmetry shows up in an alternative risk proxy with a different measurement structure, which provides corroborating evidence that the documented pattern reflects asymmetric pricing of risk rather than properties of the Risky Client Score specifically.

5. Discussion and Conclusion

5.1. Summary of Findings

The evidence demonstrates that audit fees in the U.S. listed-firm market between 2010 and 2022 adjust asymmetrically to client risk. Fees rise when risk increases and do not fall by an equivalent amount when risk decreases. The estimated up-risk coefficient is 0.0106 ($p < 0.001$). The down-risk coefficient is 0.0014 ($p = 0.708$). The differential of 0.0093 is marginally significant ($p = 0.058$) in the preferred specification with firm and year fixed effects. The implied stickiness ratio of 0.13 indicates that fees adjust downward at about 13 percent of the rate at which they adjust upward following an equivalent risk deterioration. The pattern is consistent with the cost stickiness framework (Anderson et al. 2003; Banker and Byzalov 2014). It complements the New Zealand evidence in de Villiers et al. (2014) by extending the test to the post-2008 U.S. setting characterized by Big 4 concentration above 96 percent and stricter PCAOB oversight.

The asymmetric pattern is stable across several robustness checks. The asymmetry is present in both the 2010–2016 and 2017–2022 sub-samples, with the differential significant at the 10 percent level in each. A strict definition of risk decreases ($\Delta RISK < 0$) that excludes zero-change observations produces a similar pattern, although the differential is somewhat smaller and not statistically significant in this restricted specification. An alternative risk proxy based on transitions into and out of loss status produces a larger and statistically significant asymmetry: fees rise by 4.3 percent when a firm enters loss status but do not adjust meaningfully when a firm exits loss status. The asymmetry is therefore robust across alternative measurement choices and time periods. One robustness test produces a pattern that does not concentrate the asymmetry in large risk movements as the cost

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stickiness framework would predict; we discuss this finding as a possible window into the institutional features of audit fee renegotiation rather than as evidence against the asymmetric adjustment hypothesis.

5.2. Implications

The findings have direct implications for audit firm pricing decisions. Fee adjustment is asymmetric across the risk cycle, with prompt responses to deteriorating client conditions and downward rigidity when conditions improve. Audit pricing models that estimate a single risk coefficient obscure the dynamics of how engagement risk is actually priced over time, and audit firms developing fee benchmarks for engagement planning should account for this asymmetry when comparing fees across clients at different points in their risk trajectories. A client whose risk has recently improved may continue to pay fees calibrated to its earlier, riskier conditions, while a client whose risk has recently deteriorated will see fee adjustments that fully reflect the new conditions. The mechanism analysis in Section 2.3 suggests that auditors are rational to delay fee reductions following apparent risk improvements when the persistence of the improvement is uncertain, but this rational caution comes at a cost. Audit firms that consistently maintain elevated fees following persistent risk improvements may face fee renegotiation pressure or auditor switching threats from clients who feel that fees have not adjusted to reflect their improved condition. Active engagement management that selectively reduces fees following confirmed and persistent risk improvements may strengthen client relationships and reduce switching risk.

Audit committees and corporate boards face a related interpretive challenge. Observed fee movements may not symmetrically reflect underlying changes in audit complexity, and a failure of fees to decline following an apparent risk improvement is consistent with normal industry pricing patterns rather than evidence of auditor opportunism. Committees should interpret fee movements with this asymmetry in mind. The asymmetric pattern also creates an opportunity for active oversight: audit committees that systematically review fee adequacy following risk improvements can potentially negotiate fee adjustments that the standard pricing dynamic would not deliver automatically. The asymmetry we document is consistent with limited downward pressure under Big 4 concentration, and active audit committee engagement is one of the few mechanisms that could counteract this pattern. Committees should also bear in mind that the asymmetric pattern may interact with other dimensions of audit quality. If fees do not decrease following risk improvements, the resources funded by those fees presumably continue to be deployed on the engagement, so the audit may become more thorough than it strictly needs to be following the improvement. This is not necessarily a negative outcome from a quality perspective, but it does mean that audit fees are not a perfectly efficient signal of engagement risk and should be treated as one signal among many.

For regulators and standard-setters, the findings suggest that fee disclosures over the audit cycle convey directional risk signals rather than purely contemporaneous ones. A fee increase is informative about emerging risk, while the absence of a fee decrease is less informative about risk improvement. This asymmetry should be borne in mind when fee data are used for regulatory monitoring purposes, including PCAOB inspection planning, investor risk assessment, and academic research linking fee dynamics to engagement outcomes. The findings also have implications for the broader policy debate about audit market concentration. Big 4 dominance of 96.5 percent in our sample creates conditions in which downward fee competition is muted, and critics of audit market concentration have argued that limited competition allows audit firms to maintain elevated fees. The asymmetric pattern we document is consistent with this concern but does not establish concentration as the cause. The same pattern would be predicted by the cost stickiness framework even in a more competitive audit market, so policy responses that aim to increase audit market competition should not assume that competition would by itself eliminate fee stickiness.

Researchers using audit fees as a proxy for engagement risk should also account for the directional asymmetry. A finding of increased fees following an adverse event has a clear interpretation, while a finding of unchanged fees following a positive event is more ambiguous.

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Studies examining how fees evolve following risk-relevant events such as earnings restatements, governance changes, or regulatory enforcement actions should account for the asymmetry in their interpretive framework, and event studies that pool positive and negative events may understate the underlying fee response by averaging across the more responsive upward direction and the less responsive downward direction.

5.3. The Role of Uncertainty

The asymmetric pattern we document has a natural interpretation in terms of uncertainty. Audit pricing decisions are made under uncertainty about the persistence of changes in client risk, the underlying state of the client's control environment, and the future regulatory scrutiny that the engagement will face. Each source of uncertainty contributes to asymmetric incentives. The cost of pricing fees too low when latent risk subsequently materializes is large. The benefit of pricing fees aggressively low when conditions appear to have improved is small. The asymmetry of payoffs under uncertainty is the underlying driver of the asymmetric fee adjustment we observe.

This interpretation connects the analysis to the broader literature on auditing under uncertainty conditions. Reporting quality, audit quality, and audit pricing are jointly determined under conditions of imperfect information. The asymmetric adjustment of audit fees provides one window into how the audit market resolves this joint determination. Fees do not move freely in both directions in response to changing risk conditions. They are constrained by uncertainty in ways that produce a stickier downward response than upward response. This pattern is consistent with the general principle that economic agents respond more to bad news than to good news when uncertainty about the persistence of the news is high.

The implications of this interpretation extend to other dimensions of auditing under uncertainty. Auditor reporting (going-concern modifications, Critical Audit Matter disclosures, opinion qualifications) likely exhibits similar asymmetric patterns. Auditor switching decisions, audit report timing, and engagement staffing likely respond more readily to deterioration than to improvement. Documenting these broader asymmetries is beyond our present scope, but the general framework we apply has potential applications across many audit market outcomes.

5.4. Limitations

Several limitations should temper the interpretation of these findings. The estimated asymmetry is marginally rather than strongly significant, and although the economic magnitude (a stickiness ratio of about 0.13) is substantial, the statistical evidence is consistent with smaller true asymmetries than the point estimates suggest. We have reported the result honestly without overstating its strength. Stronger evidence would require either a larger sample or richer engagement-level data on audit hours and partner involvement to isolate the effort component of fees from the pricing component. The first-difference design with firm and year fixed effects rules out time-invariant confounders but not time-varying ones, and the data do not allow us to identify which mechanism produces the asymmetry. Adjustment costs, fee anchoring on prior fees, downward-sticky reputational concerns, and limited price competition under Big 4 concentration are all consistent with the observed pattern. Distinguishing among them requires richer data than is available in standard archival audit fee research.

The sample itself imposes additional limitations. The analysis is restricted to U.S. listed firms with non-missing Risky Client Score data, and the Big 4 dominance of the sample (96.5 percent) constrains our ability to examine whether non-Big 4 auditors exhibit different adjustment behavior. Our risk measure is the composite Audit Analytics Risky Client Score, and alternative composite indicators or component-level risk decompositions might produce different magnitudes, although the LOSS-based robustness test in Table 3 Panel D provides corroborating evidence with a different risk proxy. Finally, the findings are correlational and do not support causal interpretation. We have framed the results as descriptive evidence of asymmetric adjustment, not as evidence about specific causal channels.

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5.5. Future Research

Future research could extend this work along several directions. The asymmetry might be examined using engagement-level audit hours data, which would allow direct decomposition of fee changes into effort-driven and pricing-driven components. Such decomposition would help distinguish whether asymmetric fee adjustment reflects asymmetric audit effort or asymmetric pricing of constant effort. International comparisons would illuminate whether the asymmetry varies with audit market structure, regulatory regime, or auditor concentration. Markets with lower Big 4 concentration may exhibit weaker asymmetry if downward fee competition is more active. Examining whether the documented stickiness varies with auditor switching events, going-concern modifications, or specific Critical Audit Matter categories would help isolate the underlying mechanism. Examining whether asymmetric adjustment differs between expansion and contraction phases of the broader economic cycle would connect this work to the macroeconomic literature on cost stickiness and uncertainty.

Appendix A. Variable Definitions

Variable	Definition
AUFEE	Natural logarithm of total audit fees paid by the firm to its external auditor during the fiscal year. Source: Audit Analytics.
ΔAUFEE	First difference of AUFEE: AUFEE_t − AUFEE_{t−1}.
RISKYCLIENT	Audit Analytics Risky Client Score, a composite indicator (0–15) aggregating 15 binary risk components including financial distress, internal control weaknesses, prior restatements, and regulatory enforcement actions. Source: Audit Analytics.
ΔRISK	First difference of RISKYCLIENT: RISKYCLIENT_t − RISKYCLIENT_{t−1}.
RISK_UP × ΔRISK	ΔRISK if ΔRISK > 0; zero otherwise.
RISK_DOWN × ΔRISK	ΔRISK if ΔRISK ≤ 0; zero otherwise.
RISK_DOWN	Indicator equal to 1 if ΔRISK ≤ 0, zero otherwise.
BIG4	Indicator equal to 1 if the firm is audited by Deloitte, EY, KPMG, or PwC. Source: Audit Analytics.
FSIZE	Natural logarithm of total assets. Source: Compustat (AT).
LOSS	Indicator equal to 1 if net income is negative. Source: Compustat (NI).
MKTBK	Market-to-book ratio: market value of equity divided by book value of equity. Source: Compustat.
ROA	Return on assets: net income divided by total assets. Source: Compustat.
LEV	Total debt divided by total assets: (DLTT + DLC) / AT. Source: Compustat.
CURR	Current ratio: current assets divided by current liabilities (ACT / LCT). Source: Compustat.
CINT	Capital intensity: net property, plant, and equipment divided by total assets (PPENT / AT). Source: Compustat.

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LIT	Indicator equal to 1 for high-litigation-risk industries following Francis and Krishnan (1999), based on SIC codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370–7374.

Note: All continuous variables are winsorized at the 1st and 99th percentiles.

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