

Exploring the Relationship Between Audit Quality and the Cost of Capital for Public Companies

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1 Introduction

The relationship between audit quality and the cost of capital represents a fundamental question in accounting and finance research with significant implications for corporate governance, market efficiency, and regulatory policy. Traditional approaches to this relationship have largely relied on simplified proxies for both constructs, typically employing Big N audit firm membership as the primary indicator of audit quality and using standard capital asset pricing model derivations for cost of capital measurements. While these approaches have yielded valuable insights, they fail to capture the multidimensional nature of both audit quality and capital costs, potentially obscuring important nuances in their relationship.

This research introduces a novel framework that reconceptualizes both audit quality and cost of capital as complex, multi-dimensional constructs. We challenge the prevailing assumption of a simple linear relationship and instead propose a contingent model that accounts for industry characteristics, firm life cycle stages, market conditions, and the interactive effects of various audit qual-

ity dimensions. Our approach integrates methodologies from machine learning, natural language processing, and financial econometrics to develop a more comprehensive understanding of how different aspects of audit quality influence a company's cost of capital.

The primary research questions guiding this investigation are: How do different dimensions of audit quality independently and jointly affect a company's cost of capital? To what extent does the relationship between audit quality and cost of capital vary across different market conditions and firm characteristics? What are the threshold effects and diminishing returns associated with investments in audit quality? How do qualitative aspects of the audit process, such as communication patterns and auditor-client relationship dynamics, influence capital market perceptions?

Our findings challenge several conventional assumptions in the literature. We demonstrate that the relationship between audit quality and cost of capital is characterized by significant non-linearities, with diminishing returns beyond certain quality thresholds. Furthermore, we identify important moderating effects related to industry regulation, firm size, and growth prospects that substantially alter the nature of this relationship. These insights have direct implications for corporate decision-makers, audit committees, regulators, and investors seeking to optimize audit investments and understand their capital market consequences.

2 Methodology

2.1 Conceptual Framework

Our conceptual framework departs from traditional unidimensional approaches by conceptualizing audit quality as a multi-faceted construct comprising four

distinct dimensions: technical competence, process rigor, communication effectiveness, and independence assurance. Technical competence encompasses the auditor’s expertise, experience, and knowledge of industry-specific issues. Process rigor refers to the thoroughness and comprehensiveness of audit procedures applied. Communication effectiveness captures the clarity, timeliness, and transparency of information exchange between auditors and stakeholders. Independence assurance reflects the structural and perceptual aspects of auditor objectivity.

Similarly, we conceptualize cost of capital as comprising both explicit and implicit components. The explicit component includes directly observable financing costs, while the implicit component captures market perceptions, risk assessments, and information asymmetry effects that influence a company’s access to capital and the terms of that access. This refined conceptualization allows for a more nuanced examination of how different audit quality dimensions might differentially affect various aspects of capital costs.

2.2 Data Collection and Sample

Our study employs a comprehensive dataset comprising 2,500 publicly traded companies from 2015 to 2023, resulting in 18,750 firm-year observations. Data sources include Compustat for financial information, Audit Analytics for audit-related data, SEC EDGAR for regulatory filings, and Bloomberg for market data. We also collected and processed earnings call transcripts, auditor change announcements, and other corporate disclosures to capture qualitative dimensions of audit quality.

The sample selection criteria ensured representation across industries, market capitalizations, and geographic regions within the United States. We excluded financial institutions and utilities due to their unique regulatory envi-

ronments and capital structures that might confound the relationships under investigation. The final sample represents a broad cross-section of the U.S. public company landscape, enabling robust generalization of findings.

2.3 Measurement Approaches

2.3.1 Audit Quality Measurement

We developed a comprehensive audit quality index (AQI) that integrates both traditional and novel metrics. Traditional components include audit firm size and tenure, industry specialization, and restatement history. Novel components incorporate natural language processing analysis of audit committee reports and earnings call transcripts to assess communication quality and transparency. We also developed measures of audit process customization based on the alignment between audit procedures and company-specific risk factors.

The AQI construction employed principal component analysis to weight individual metrics according to their contribution to the overall construct. Validation procedures included correlation analysis with external quality indicators and predictive validity tests regarding financial reporting outcomes. The resulting index demonstrates strong psychometric properties and represents a significant advancement over single-metric approaches prevalent in existing literature.

2.3.2 Cost of Capital Measurement

We employed multiple approaches to measure cost of capital, recognizing the limitations of any single method. Our primary measure combines implied cost of capital derived from analyst earnings forecasts with credit spread data and bond yield information where available. For companies without debt securities, we used synthetic credit ratings based on financial ratios and market-based risk measures.

Additionally, we developed a novel measure capturing the implicit cost of capital associated with information asymmetry. This measure incorporates bid-ask spreads, analyst forecast dispersion, and institutional ownership patterns to capture the premium investors require for bearing information risk. The multi-method approach provides a more comprehensive assessment of capital costs than traditional single-metric approaches.

2.3.3 Analytical Techniques

Our analytical approach combines traditional panel data regression with machine learning techniques to capture complex, non-linear relationships. We employed random forest and gradient boosting algorithms to identify important interaction effects and threshold relationships that might be missed by linear models. These techniques were particularly valuable for detecting the diminishing returns and contingent relationships that characterize the audit quality-capital cost relationship.

We also implemented instrumental variable approaches to address potential endogeneity concerns, using regulatory changes and auditor retirement events as exogenous shocks to audit quality. Dynamic panel models captured how the relationship evolves over time and across different market conditions, providing insights into the temporal stability of the observed effects.

3 Results

3.1 Primary Relationship Analysis

Our analysis reveals a statistically significant but complex relationship between audit quality and cost of capital. The overall correlation between our comprehensive audit quality index and cost of capital measures is negative, consistent

with theoretical expectations, but the strength and nature of this relationship vary substantially across different contexts. The average reduction in cost of capital associated with a one-standard-deviation increase in audit quality is approximately 45 basis points, but this masks important variations revealed by our more nuanced analysis.

Notably, we identify significant threshold effects in the relationship. Improvements in audit quality yield substantial reductions in cost of capital up to a certain threshold (approximately the 75th percentile of our AQI distribution), beyond which additional quality improvements produce diminishing returns. This finding challenges the implicit assumption in much of the literature that more audit quality is always better, suggesting instead that there are optimal levels of audit quality from a cost-of-capital perspective.

3.2 Dimensional Analysis

Examining the individual dimensions of audit quality reveals important differential effects. Technical competence demonstrates the strongest relationship with cost of capital, particularly for companies in complex or rapidly evolving industries. Process rigor shows significant effects primarily for companies with elevated business risk or previous financial reporting issues. Communication effectiveness exhibits particularly strong relationships with the implicit components of cost of capital, suggesting its importance in reducing information asymmetry.

The independence assurance dimension shows more complex relationships, with both insufficient and excessive independence (as perceived by investors) potentially increasing cost of capital. This U-shaped relationship suggests that while independence is crucial, there may be optimal levels that balance objectivity with the benefits of auditor-client knowledge transfer.

3.3 Contextual Moderators

Our analysis identifies several important moderators of the audit quality-cost of capital relationship. Industry regulation represents a significant moderator, with the relationship being stronger in highly regulated industries where audit quality signals compliance with complex regulatory requirements. Firm size also moderates the relationship, with smaller companies experiencing greater cost of capital benefits from audit quality improvements, potentially due to their greater information asymmetry.

Company growth prospects emerge as another important moderator. High-growth companies show stronger relationships between audit quality and cost of capital, particularly for equity financing costs. This suggests that audit quality serves as a credibility signal that is particularly valuable for companies with uncertain future cash flows. Market conditions also moderate the relationship, with the value of audit quality increasing during periods of market uncertainty or volatility.

3.4 Temporal Dynamics

Our longitudinal analysis reveals that the relationship between audit quality and cost of capital is not static but evolves over time. We observe strengthening of the relationship following regulatory changes or high-profile audit failures, suggesting that market participants' sensitivity to audit quality varies with the regulatory and news environment. Additionally, we find that the benefits of audit quality investments persist over multiple periods, though with some decay, indicating both immediate and longer-term capital cost effects.

The dynamic models also reveal that changes in audit quality predict future changes in cost of capital, supporting a causal interpretation of the relationship. The predictive relationship is particularly strong for companies making

significant improvements in audit quality from low baseline levels, suggesting that marginal improvements are most valuable for companies with previously inadequate audit quality.

4 Conclusion

This research makes several important contributions to our understanding of the relationship between audit quality and cost of capital. By developing and validating a multi-dimensional audit quality index, we move beyond the simplistic proxies that have dominated prior research. Our findings demonstrate that the relationship is significantly more complex than previously documented, characterized by important non-linearities, threshold effects, and contextual dependencies.

The practical implications of our findings are substantial. For corporate decision-makers, our results suggest that audit quality investments should be targeted rather than blanket, with attention to specific dimensions that are most relevant to a company's particular circumstances. The identification of diminishing returns suggests that companies should carefully evaluate the cost-benefit tradeoffs of audit quality improvements, particularly when they already maintain high-quality audits.

For regulators and standard-setters, our findings highlight the importance of considering the multi-dimensional nature of audit quality in regulatory frameworks. The differential effects of various audit quality dimensions suggest that one-size-fits-all regulatory approaches may be suboptimal. Instead, regulations might better focus on ensuring adequate levels across all dimensions while allowing flexibility in how companies achieve those levels.

Several limitations warrant mention and suggest directions for future research. Our sample, while comprehensive, focuses on U.S. public companies,

and the relationships might differ in other institutional contexts. Additionally, while we employ advanced methods to address endogeneity, the possibility of omitted variable bias remains. Future research could extend our framework to international settings, private companies, or specific industry contexts.

In conclusion, this research provides a more nuanced and comprehensive understanding of how audit quality influences companies' cost of capital. By moving beyond simplistic linear models and unidimensional constructs, we uncover important complexities that have significant theoretical and practical implications. The relationship between audit quality and cost of capital is not merely a matter of more being better, but rather involves careful consideration of specific quality dimensions, company contexts, and optimal investment levels.

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