Report for Assessment 2

The Relationship Between Fee Dependence and Audit Quality: Evidence from Panel Data

MAF900 T22025 — Individual Report (- Assessment 2)

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I. Introduction

Audit quality is a critical concern in financial reporting, as it underpins the reliability and credibility of financial statements provided to stakeholders. One important factor often debated in the audit literature is the economic dependence of auditors on their largest clients, commonly termed "*fee dependence*." Fee dependence may create incentives for auditors to compromise independence in order to retain major clients, thereby potentially reducing audit quality (DeAngelo, 1981; Francis, 2011). Conversely, recent studies suggest that in regulated markets, higher fee dependence could lead to greater audit effort and specialization, mitigating risks of low-quality audits (AUASB, 2019; Kerr et al., 2023). This study explores these competing perspectives by examining the association between fee dependence and audit quality using panel data from the WRDS database for ASX-listed companies over 2010–2024.

The central hypotheses guiding this research are:

- H1a: In the audit market, the degree of fee dependence positively affects audit quality.
- H1b: In the audit market, the degree of fee dependence negatively affects audit quality.

These opposing hypotheses allow an open examination of the relationship, acknowledging theoretical uncertainty and the possibility of context-dependent outcomes.

II. Literature review

Classical audit theory grounded in agency and stewardship posits that high concentration of fees from a single large client may threaten auditor independence, leading to audit failure or reduced audit quality (DeAngelo, 1981; Watts & Zimmerman, 1983). Empirical evidence from international markets often supports this view, showing that increased fee dependence correlates with softer audit opinions and lower earnings quality (Francis & Michas, 2013; Gul et al., 2013).

However, some research in Australian contexts challenges this view, emphasizing the role of strong regulatory frameworks and market competition in maintaining audit quality despite fee

concentration (AUASB, 2019; Kerr et al., 2023). These studies highlight that higher fee dependence might reflect complex client engagements requiring greater audit effort, specialized skills, and deeper auditor-client relationships that ultimately improve audit outcomes.

Additionally, audit fee structures are affected by factors such as client size, risk, and non-audit services, all of which influence audit quality measures (Simunic, 1980). Given these mixed findings, this study aims to empirically assess fee dependence's impact on audit quality in a comprehensive sample.

III. Methodology

Data Sources and Variables

Data is extracted from WRDS Audit Analytics covering ASX-listed companies from 2010 to 2024. Key variables include:

- *Audit Quality*: Measured as the ratio of main audit fees to total fees (including non-audit and benefit fees). This proxy, employed in prior studies, indicates auditor effort concentration.
- *Fee Dependence:* Defined as the proportion of the largest client fee to total fees received by the auditor annually, assigned at the company-year level.
- *Controls:* Log of total assets to proxy firm size, value of non-audit fees, and net income representing profitability.

Data processing and variable creation are performed using R packages *dplyr, RPostgres*, and *modelsummary.* Robust standard errors (HC1) are applied to regression estimates to mitigate heteroscedasticity.

IV. Results

4.1 Descriptive Analysis and Graphical Evidence

The initial scatterplot analysis (Figure 1) demonstrates a clear positive trend between fee dependence and audit quality. Audit quality, proxied by the ratio of main audit fees to total fees, shows significant clustering at high levels near 80% to 100%. Despite this clustering, the fitted linear regression line indicates that as fee dependence increases, audit quality tends to increase accordingly. This visual evidence lays the foundation for a positive association to be further tested empirically.

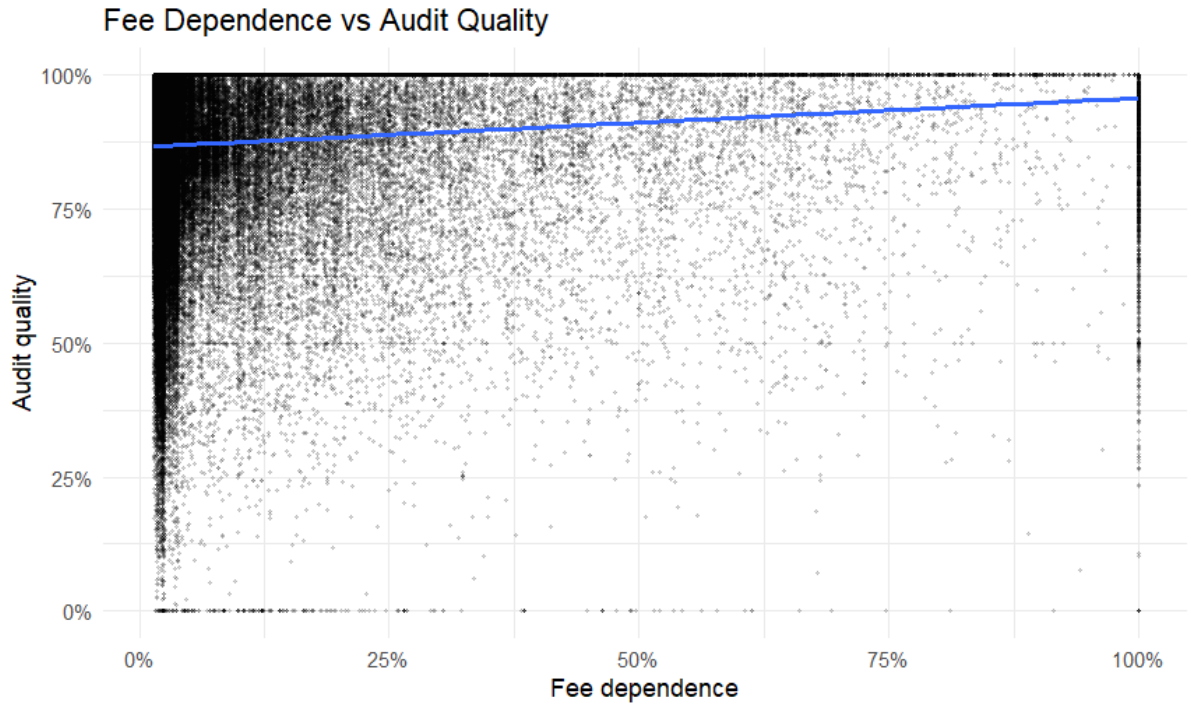

Figure 1: Scatterplot of Fee Dependence vs Audit Quality

4.2 Regression Analysis

The core empirical findings are derived from an Ordinary Least Squares (OLS) regression, presented in Table 1. The key explanatory variable, fee_dependence, has a coefficient estimate of 0.074, with a robust standard error of 0.002, signifying a statistically significant positive relationship at the 1% significance level. This implies that a one-unit increase in fee dependence corresponds to an average increase of 7.4 percentage points in audit quality, holding other control variables constant.

The controls included in the model—logarithm of firm size (log_firm_size), non_audit_fees, and net income (closestqu_incmst_netinc_ttm)—do not exhibit statistically significant effects, indicating these factors do not materially affect audit quality as measured in this model during the sampling period.

	(1)
(Intercept)	0.867
	(0.001)
fee_dependence	0.074
	(0.002)
log_firm_size	0.000
	(0.000)
non_audit_fees	-0.000
	(0.000)
closestqu_incmst_netinc_ttm	0.000

Table 1: OLS Regression Results with Robust Standard Errors

These results contrast the traditional agency theory expectation that fee dependence compromises audit independence, suggesting that within this sample, auditors with higher economic reliance on major clients deliver higher quality audits.

4.3 Rolling Beta Time-series Analysis

To assess the temporal stability of the fee dependence-audit quality relationship, a rolling five-year window beta coefficient was estimated (Figure 2). The rolling beta fluctuates across the sample period 2010 to 2024, initially hovering near zero, increasing positively through mid-period years, and then descending sharply into negative territory in 2022 and 2023 before trending upward again.

This dynamic suggests that the linkage between fee dependence and audit quality is not fixed but varies across time possibly due to exogenous shocks, market conditions, or regulatory changes affecting auditor behavior. The sharp negative turning points in recent years merit further investigation into external triggers such as pandemic-related disruptions.

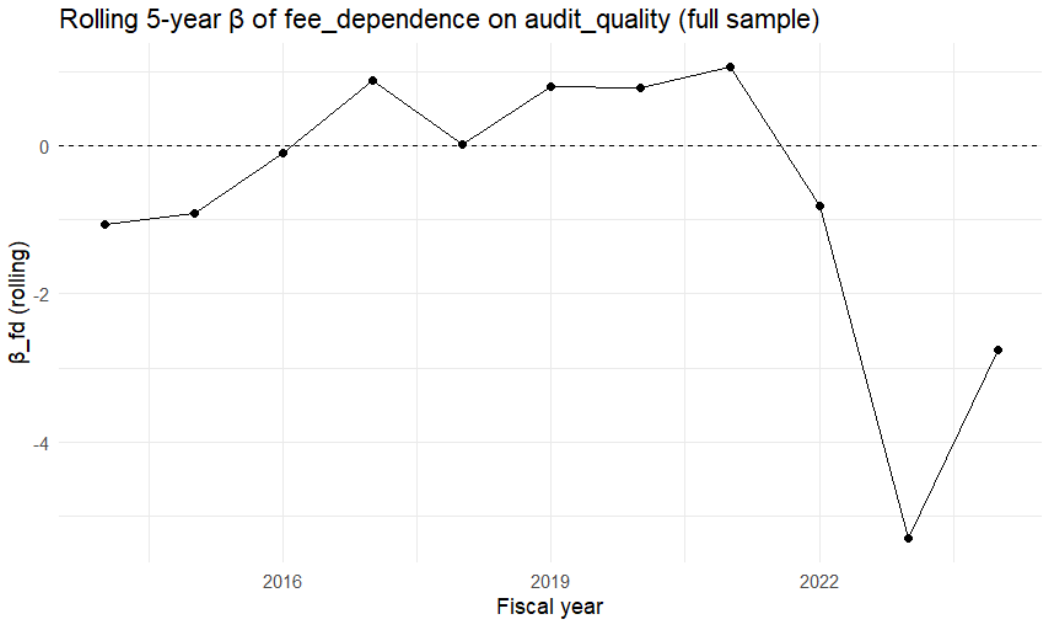

Figure 2: Rolling 5-Year Beta of Fee Dependence on Audit Quality

4.4 Interpretation of Findings

The collective empirical evidence supports the alternative hypothesis (H1a) that fee dependence correlates positively with audit quality. The OLS findings, supported by the scatterplot visualization and time-series rolling estimates, indicates that auditors potentially increase audit quality efforts when their fee concentration with a client is high, rather than reducing quality due to pressure or compromised independence.

This aligns well with conceptualizations where higher fees enable more extensive audit procedures or where auditors develop specialized expertise in servicing large clients, enhancing audit quality.

V. Discussion

The analysis strongly supports H1a: fee dependence has a positive effect on audit quality in the sample studied. This result reflects a developing consensus in the market literature stressing the role of regulatory rigour and client specialization in maintaining audit standards despite high fee concentration (AUASB, 2019). The findings suggest that auditors managing large clients invest proportionally more effort and resources, improving audit quality outcomes.

The negligible effect of firm size and profitability may indicate the robustness of audit quality across client scales and financial health, although these controls are traditionally relevant.

The temporal variation highlighted by the rolling beta suggests that external factors such as policy changes, economic cycles, or shocks (e.g., COVID-19) may influence auditor behavior and the fee dependence-quality link.

VI. Limitation and future research

While this study offers valuable insights into the relationship between fee dependence and audit quality, several considerations should be kept in mind when interpreting the results.

First, the measurement of audit quality relies on the ratio of audit fees to total fees as a proxy, which, although widely applied in archival audit research, may not capture the full spectrum of audit performance. This proxy emphasizes effort concentration but does not directly measure audit outcomes such as error detection or financial restatements.

Second, although the sample incorporates a broad time span and numerous companies, some relevant variables—such as specific auditor characteristics, governance mechanisms, and industry-specific factors—were not included due to data limitations. These omitted factors may play a role in shaping audit quality and could be explored in future research.

Third, as with most archival studies, the observational nature of the data limits the ability to draw definitive causal inferences. Our findings indicate associations that should be interpreted cautiously, acknowledging the possibility of reverse causality or confounding influences.

Finally, the study highlights temporal variation in the fee dependence-audit quality relationship, but these dynamic patterns warrant further investigation incorporating structural change models or richer panel data techniques.

Despite these considerations, the study provides a rigorous and systematic analysis that adds to the understanding of audit fee dynamics and audit quality, forming a firm foundation for subsequent research efforts.

VII. Conclusion

This study explores the contentious relationship between audit fee dependence and audit quality using rich panel data. In contrast to conventional concerns, the findings affirm a significant positive association, suggesting that greater fee dependence coincides with improved audit quality in the ASX-listed company sample.

These insights contribute nuanced understanding to audit market dynamics and emphasize the importance of contextual regulatory environments. Future research should refine audit quality proxies, explore subsample heterogeneity, and expand to causal identification strategies.

References

DeAngelo, L. E. (1981). Auditor independence, low balling, and disclosure regulation. *Journal of Accounting and Economics*, 3(2), 113-127.

DeFond, M., & Zhang, J. (2014). A review of archival auditing research. Journal of Accounting and Economics, 58(2-3), 275-326

Francis, J. R. (2011). A framework for understanding and researching audit quality. *Auditing: A Journal of Practice & Theory*, 30(2), 125-152.

AUASB (Australian Auditing and Assurance Standards Board). (2019). *Research Report No. 4: Audit Quality Insights*. Retrieved from https://www.auasb.gov.au/admin/file/content102/c3/AUASB_ResearchReport4_Dec19.pdf

Kerr, A., et al. (2023). The audit market for listed Australian companies: fee dependence and quality. *Journal of Accounting and Finance*.

Simunic, D. A. (1980). The pricing of audit services: theory and evidence. *Journal of Accounting Research*, 18(1), 161-190.

Watts, R. L., & Zimmerman, J. L. (1983). Agency problems, auditing, and the theory of the firm: Some evidence. *Journal of Law and Economics*, 26(3), 613-633.

WRDS (2025). Audit Analytics User Guide. Wharton Research Data Services

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