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The Impact of Data Asset Information Disclosure on Audit Quality: The Roles of Business Complexity and Media Attention

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Abstract: In the digital economy era, the influence of data asset information disclosure on audit quality has become increasingly prominent. Based on information asymmetry theory and signaling theory, this paper empirically examines the mechanisms through which data asset disclosure affects audit quality using a sample of China's A-share listed companies from 2014 to 2024. The findings reveal: (1) a significant inverted U-shaped relationship between data asset disclosure and audit quality, with an inflection point at approximately 2.63; (2) media attention plays a partial mediating role in this relationship; and (3) business complexity significantly strengthens this non-linear effect, making the curve steeper and shifting the inflection point rightward to 2.97. Heterogeneity analysis shows that this inverted U-shaped relationship is significant only in high-tech firms. The study employs propensity score matching and instrumental variable methods to address endogeneity concerns, confirming the robustness of the results. This research enriches the theoretical framework of audit quality determinants, provides empirical evidence for regulating data asset disclosure policies, and offers practical insights for companies to optimize their disclosure strategies and for auditors to improve professional practice.

Keywords: Data asset; Audit quality; Media attention; Business complexity.

1. Introduction

In this context, data assets have emerged as key production factors whose value is becoming increasingly prominent. Globally, both governments and corporations have elevated data utilization to new heights—the big data industry is booming, and digital transformation is accelerating across sectors. China has officially entered the digital economy era. Over the past decade, the government has issued multiple policy documents supporting data asset development. In 2023, the Ministry of Finance's Guiding Opinions on Strengthening Data Asset Management further clarified issues related to data asset ownership, transactions, and information disclosure, making the capitalization of data assets a critical pathway for firms to adapt to the digital economy.

The concept of "data assets" can be traced back to the late 1970s, when Richard Peterson argued that corporate bonds and financial products generating continuous returns should be considered data assets [1]. Over time, the concept has been refined, with deepening understanding and enriched connotations. Business complexity refers to the diversity of corporate management experience, encompassing organizational hierarchy complexity. It broadly describes the cognitive, governance, and decision-making friction that internal management and external information users face due to the diverse, heterogeneous, and dynamic characteristics of a firm's business scope, models, processes, or information environment (Arshia Farzamfar, 2024) [2]. The formation of data assets is complex and varied, including both internally generated and externally purchased data resources that differ significantly in storage, format, quality, and circulation, thereby increasing business complexity to some extent. Data asset information disclosure refers to the transparent, accurate, and timely public release of relevant information about data assets owned or controlled by a firm. Existing literature identifies three main perspectives on disclosure modes: on-balance-sheet recognition, off-balance-sheet disclosure, and no disclosure required (Huang Shizhong, 2020) [3]. Compared with traditional financial information, data asset information—characterized by its diversity, interactivity, dynamism, and replicability—plays a vital role in promoting high-quality economic development.

Capital market stakeholders increasingly rely on corporate data asset disclosure to assess value and risk. However, research on the relationship between data assets and audit quality, particularly the pathways through which data asset disclosure influences audit quality, remains insufficient. The complexity and diversity of data assets create considerable uncertainty in disclosure, affecting auditors' judgments about their authenticity and fair value. Audit quality is a key factor ensuring financial information reliability. While previous domestic and international research has identified various determinants of audit quality, its relationship with data assets has rarely been explored and requires in-depth investigation.

This study's contributions are twofold: First, from a research perspective, unlike traditional audit quality studies, we examine this emerging and important issue from the novel angle of data asset disclosure, enriching and expanding the theoretical framework of audit quality determinants and providing new directions for future research. Second, in terms of research pathways, existing literature seldom discusses the relationship between data assets and audit quality. Based on information asymmetry theory, we propose that data asset disclosure influences audit quality by affecting media attention, thereby exploring the underlying mechanism.

2. Literature Review

2.1. Research on Audit Quality

Audit quality is influenced by three main factors: the audit subject, the audit object, and the external environment. Regarding the audit subject, accounting firm size, internal

governance, and reputation are crucial. Reputable firms can attract high-quality clients and charge higher audit fees, thereby improving audit quality (Chen Bo, 2013) [5]. Auditor characteristics such as gender, age, and experience also significantly affect audit quality (Huang Hongbin et al., 2019) [6]. From the perspective of the audit object, audit quality largely depends on the corporate governance structure and financial condition of the audited entity. Additionally, the external environment affects audit quality through various mechanisms. Industry competition influences audit pricing and resource allocation (Deng Lu et al., 2013) [7]. In highly competitive industries, firms may lower audit fees to attract more clients, reducing resource investment due to insufficient revenue and consequently decreasing audit quality.

2.2. Research on Data Asset Disclosure and Media Attention

Media attention refers to the degree of focus that various media outlets place on specific events, entities, or issues. While existing literature has not reached a completely unified definition, it is generally understood along two dimensions (Carroll, 2003): (1) reporting frequency—quantitative measures such as the number of articles or coverage duration within a specific timeframe; and (2) reporting salience—qualitative features including placement, length, and presentation style [9]. Media plays an intermediary role through two primary pathways: passively transmitting information to the public to reduce information asymmetry between stakeholders and firms (Saxton et al., 2013) [8], and selectively releasing information to influence public judgment when corporate behaviors show no significant differences. Studies have confirmed that media attention can prompt auditors to improve audit quality, with negative coverage having a stronger effect (Dong Tianyi et al., 2022) [4].

Existing literature has verified the economic impact of data asset disclosure from multiple dimensions. However, whether such disclosure effectively reaches target audiences and shapes market expectations depends largely on information transmission mechanisms. Yu Zhongbo et al. (2011), based on earnings management research, concluded that excessive media attention increases market pressure on managers, who may then engage in more earnings management to meet market expectations. However, managers will not sustain such behavior long-term due to market pressure [10].

2.3. Theoretical Foundation

2.3.1. Information Asymmetry Theory

Information asymmetry theory describes how market participants have varying degrees of access to relevant information. George Akerlof first proposed this theory, using the "lemons market" model to illustrate how better-informed individuals typically gain advantageous positions while less-informed individuals face disadvantages. On one hand, data asset disclosure can mitigate information asymmetry between firms and auditors. In traditional auditing, core corporate resources mainly consist of tangible assets or mature intangible assets with relatively transparent ownership, valuation, and amortization rules, allowing auditors to rely on market prices, source documents, or third-party confirmations for cross-verification. On the other hand, in the digital economy, management's control permeates daily operations, while auditors can only verify the effectiveness of data asset disclosure through sampling and interviews. Current accounting standards still treat data asset disclosure as primarily voluntary, with firms determining disclosure scope, detail, and frequency, which further exacerbates information asymmetry. Due to technical barriers, even when firms provide substantial information, auditors may struggle to verify it using traditional valuation models or comparable transactions if they cannot properly interpret the information.

2.3.2. Signaling Theory

Signaling theory focuses on how, under information asymmetry, observable actions or signals can convey private information from the informed party to the uninformed party to influence decision-making and expectations. Corporate information disclosure serves as a real-time observable and verifiable signal for auditors, helping to bridge the information gap. If firms release false or misleading information that is later exposed, they face regulatory penalties and reputational damage. Currently, data asset disclosure follows a "mandatory plus voluntary" approach—only firms with higher-quality data assets and more robust internal controls are willing to bear the costs of voluntary disclosure. This behavior naturally signals that "firms with more comprehensive disclosure have better internal controls," thereby reducing auditors' prior uncertainty during risk assessment.

3. Mechanism Analysis and Research Hypotheses

Existing research presents two competing views on how data asset disclosure affects audit quality.

View 1: Positive Effects

Higher levels of data asset disclosure enable auditors to obtain sufficient, appropriate evidence through public channels, accurately identifying material misstatement risks in data asset ownership, valuation, completeness, and accuracy. This allows for more targeted audit procedures, reducing detection risk and audit failure probability. In traditional audits, auditors rely heavily on financial statements and other structured data for judgment. Innovation is crucial for corporate development, and data asset disclosure can provide more diverse data to fuel innovation.

View 2: Negative Effects

Data asset auditing remains in its infancy. Auditors face various hidden risks, and data asset disclosure may trigger information overload problems, reducing audit quality. No fair and comprehensive auditing standards for data assets currently exist. Auditors' lack of experience makes it difficult to quickly perform audit work, reduce potential risks, and improve audit report quality based solely on existing standards. Moreover, current penalties for non-compliant disclosure are relatively low, prompting firms to selectively disclose data asset information or even provide misleading information for self-interest, reducing transparency and affecting auditor judgment. Additionally, firms must invest substantial resources in collecting, processing, and maintaining data assets for value creation, crowding out other corporate resources.

Within the classic principal-agent framework, management possesses private information about data asset value and risk, while external auditors and shareholders rely on public disclosure. Higher audit quality helps principals accurately identify management behavior. When data asset disclosure levels are low, incremental information helps reduce agency costs and improve audit quality. However, when disclosure

exceeds auditors' verifiable capacity, management may exploit information advantages to "over-package" or selectively disclose, triggering new agency conflicts that reduce audit quality, creating an inverted U-shaped relationship.

Hypothesis H1:

Data asset information disclosure has an inverted U-shaped effect on audit quality.

Based on information asymmetry theory, the information gap between management and external auditors is a key determinant of audit judgment quality. While data asset disclosure can narrow this gap, when disclosure levels exceed auditors' verifiable capacity, incremental information becomes interference signals that exacerbate asymmetry and reduce audit quality. Furthermore, as a critical information intermediary in capital markets, media plays a key role in this process. According to information transmission theory, media attention not only disseminates and amplifies corporate disclosure but also constrains management opportunism through public oversight. Specifically, when firms disclose data asset information, heightened media attention can prompt auditors to pay greater attention to this emerging asset class, increasing audit effort and professional skepticism. Simultaneously, media reports provide auditors with information cues, reducing information search costs and mitigating audit quality deterioration caused by information asymmetry.

Hypothesis H2:

Media attention mediates the relationship between data asset disclosure and audit quality.

As the digital economy flourishes, the capitalization of data assets becomes more standardized, and their applications grow widespread. Existing research shows that increased digitalization raises business complexity. Data asset disclosure requirements are becoming clearer. Some firms have added data collection, cleaning, labeling, and governance processes beyond existing business operations, making corporate information systems, accounting units, and organizational structures more diverse. Business complexity rises accordingly. Meanwhile, data disclosure approval involves coordination across multiple departments, requiring communication on content and timing, which lengthens processes and reduces operational efficiency.

This complexity demands more time and resources from auditors to understand and evaluate data asset measurement, recognition, and reporting. High business complexity typically accompanies higher hidden risks. Auditors must conduct detailed reviews of data asset lifecycles, data governance, and data security, which undoubtedly increases audit difficulty and complexity, affecting resource allocation and audit quality. In extremely complex businesses, even with adequate disclosure, auditors may reduce risk assessments due to information overload and insufficient professional competency.

Hypothesis H3:

Business complexity moderates the inverted U-shaped relationship between data asset disclosure and audit quality.

4. Research Design

4.1. Sample Selection and Data Sources

Based on data from China's A-share listed companies from 2014 to 2024, the following procedures were applied to the initial sample: (1) firms with abnormal financial conditions (e.g., ST, *ST status) were excluded; (2) financial and securities companies were removed; (3) observations with missing values for key variables were eliminated; and (4) to mitigate outliers, all continuous variables were winsorized at the 1st and 99th percentiles. These filters yielded a final sample of 30,635 firm-year observations across 4,543 listed companies. All raw data were obtained from the Wind database, CSMAR database, and China Listed Companies Financial News Database. Stata 18.0, Python, and Excel 2021 were used for data processing and empirical analysis.

4.2. Variable Definitions and Measurement

Dependent Variable:

Audit quality (AQ) is the dependent variable. Following Dong Xiaohong et al. (2021) [15], audit quality is measured as the negative absolute value of the difference between the actual audit opinion issued and the probability of a standard unqualified opinion (as estimated by the Mao model).

Independent Variable:

Data asset disclosure (DA) is the independent variable, calculated as the natural logarithm of (total word count of data asset disclosures in annual reports + 1).

Mediating Variable:

Media attention (MEDIA) is the mediating variable. Following Huang Jinbo et al. (2022) [14], data were collected from the China Listed Companies Financial News Database, which includes eight major financial newspapers and over 600 important periodicals commonly used in academic research.

Moderating Variable:

Business complexity (COMP) is constructed via principal component analysis (PCA) using five indicators: market capitalization, revenue scale, employee count, financial leverage, and the Herfindahl index, capturing both firm-level and industry-level dimensions.

Control Variables:

Following prior literature, control variables include CEO duality, Tobin's Q, fixed asset ratio, and others. Detailed definitions are provided in Table 1.

Table 1. Variable Definitions

Type	Symbol	Variable Name	Definition
Dependent	AQ	Audit Quality	Negative absolute difference between actual and predicted unqualified opinion
Independent	DA	Data Asset Disclosure	Ln(Word count of data asset disclosures + 1)
Mediating	MEDIA	Media Attention	Ln(Number of news reports + 1)
Moderating	COMP	Business Complexity	Composite index via PCA
Controls	Dual	CEO Duality	=1 if CEO and Chair are the same person, 0 otherwise
	CashFlow	Cash Flow Ratio	Operating cash flow / Total assets
	TobinQ	Tobin's Q	Market value / Total assets
	Fixed	Fixed Asset Ratio	Net fixed assets / Total assets
	Intangible	Intangible Asset Ratio	Net intangible assets / Total assets
	GrossProfit	Gross Profit Margin	(Revenue - COGS) / Revenue
	Mfee	Administrative Expense Ratio	Admin expenses / Revenue (proxy for agency costs)
	Occupy	Major Shareholder Fund Occupancy	Other receivables / Total assets (proxy for agency costs)
	Year	Year Fixed Effects	Year dummies
	Ind	Industry Fixed Effects	Industry dummies

4.3. Model Specification

To test Hypothesis H1, the following quadratic regression model is estimated:

$$AQ_{i,t} = \alpha_0 + \alpha_1 DA_{i,t} + \alpha_2 DA^2_{i,t} + \alpha_m Control_{i,t} + \sum Industry + \sum Year + \varepsilon_{i,t} \quad (1)$$

Where AQ is audit quality, DA is data asset disclosure, DA2 is its quadratic term, Controls includes control variables, and industry and year fixed effects are included.

To examine the mediating role of media attention (H2), we follow Wen Zhonglin's (2014) [11] three-step approach:

$$AQ_{i,t} = \alpha_a + \alpha_b DA_{i,t} + \alpha_n Control_{i,t} + \sum Industry + \sum Year + \varepsilon_{i,t} \quad (2)$$

$$MEDIA_{i,t} = \beta_0 + \beta_1 DA + \beta_m Control_{i,t} + \sum Industry + \sum Year + \varepsilon_{i,t} \quad (3)$$

$$AQ_{i,t} = \gamma_0 + \gamma_1 DA_{i,t} + \gamma_2 COMP_{i,t} + \gamma_m Control_{i,t} + \sum Industry + \sum Year + \varepsilon_{i,t} \quad (4)$$

If the coefficients follow the expected pattern, media attention partially mediates the relationship.

To test the moderating effect of business complexity (H3), following Lin Weipeng (2022) [12], we estimate:

$$AQ_{i,t} = \lambda_0 + \lambda_1 DA_{i,t} + \lambda_2 COMP_{i,t} + \lambda_3 DA \times COMP_{i,t} + \lambda_4 DA2 + \lambda_5 DA2 \times COMP_{i,t} + Control_{i,t} + \sum Industry + \sum Year + \varepsilon_{i,t} \quad (5)$$

5. Empirical Results and Analysis

5.1. Descriptive Statistics

Table 2 presents descriptive statistics for the sample of 30,635 observations. Audit quality (AQ) has a mean of -0.029 and standard deviation of 0.098, with a minimum of -0.974 and maximum of -0.001, indicating considerable variation. Data asset disclosure (DA) has a mean of 3.364 (SD = 0.680), ranging from 1.609 to 5.964, showing significant cross-firm heterogeneity.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Median	Std. dev.	Min	Max
AQ	30,635	-0.029	-0.009	0.098	-0.97427	-0.0015
DA	30,635	3.364	3.296	0.680	1.609438	5.963579
Dual	30,635	0.346	0.000	0.476	0	1
CashFlow	30,635	0.051	0.050	0.064	-0.15701	0.256736
TobinQ	30,635	1.974	1.611	1.158	0.794918	9.614131
Fixed	30,635	0.200	0.171	0.146	0.002636	0.690761
Intangible	30,635	0.043	0.032	0.046	0	0.323281
GrossProfit	30,635	0.303	0.270	0.177	-0.0592	0.876057
Mfee	30,635	0.080	0.066	0.059	0.006947	0.422975
Occupy	30,635	0.011	0.005	0.017	6.15E-05	0.135088

5.2. Correlation Analysis

Table 3 shows Pearson correlation coefficients. DA is significantly negatively correlated with AQ at the 1% level, suggesting preliminary evidence that data asset disclosure reduces audit quality. MEDIA and COMP are significantly positively correlated ($r = 0.486$, $p < 0.01$), indicating that more complex firms attract greater media attention. Most correlation coefficients are below 0.5 in absolute value, suggesting no severe multicollinearity.

Table 3. Correlation Matrix

	AQ	DA	MEDIA	COMP	Dual	CashFlow	TobinQ
AQ	1						
DA	-0.074***	1					
MEDIA	0.058***	-0.097***	1				
COMP	0.052***	-0.098***	0.486***	1			
Dual	0.015**	0.096***	-0.097***	-0.193***	1		
CashFlow	0.120***	-0.122***	0.098***	0.166***	-0.020***	1	
TobinQ	-0.00300	0.091***	-0.00300	-0.165***	0.075***	0.121***	1
Fixed	-0.00300	-0.284***	0.070***	0.174***	-0.089***	0.204***	-0.104***
Intangible	-0.025***	-0.088***	0.048***	0.096***	-0.061***	0.067***	-0.046***
GrossProfit	0.080***	0.141***	0.046***	-0.240***	0.104***	0.218***	0.303***
Mfee	-0.131***	0.168***	-0.058***	-0.355***	0.045***	-0.157***	0.250***
Occupy	-0.160***	0.050***	0.089***	0.139***	-0.066***	-0.126***	-0.045***
	Fixed	Intangible	GrossProfit	Mfee	Occupy		
Fixed	1						
Intangible	0.110***	1					
GrossProfit	-0.185***	0.026***	1				
Mfee	-0.085***	0.075***	0.391***	1			
Occupy	-0.168***	-0.025***	-0.110***	0.016**	1		

5.3. Main Regression Results

5.3.1. Data Asset Disclosure and Audit Quality

Column (1) in Table 4 shows that with control variables included, DA and DA2 have coefficients of 0.0186 ($p < 0.01$) and -0.00339 ($p < 0.001$), respectively, forming a significant inverted U-shape. U-test calculation indicates an inflection point at DA ≈ 2.63. These results support H1: audit quality initially improves with data asset disclosure but declines after the inflection point.

Table 4. Regression Results

	(1)	(2)	(3)	(4)	(5)
	AQ	AQ	MEDIA	AQ	AQ
DA	0.0170**	-0.00635***	0.0692***	-0.00649***	0.0259***
	-3.07	(-5.96)	-4.89	(-6.09)	-4.06
DA2	-0.00323***				-0.0186*
	(-4.30)				(-2.55)
MEDIA				0.00201***	
				-4.66	
COMP					-0.0186*
					(-2.55)
DAxCOMP					0.0108*
					-2.52
DA2xCOMP					-0.00123*
					(-1.99)
Controls	YES	YES	YES	YES	YES
IND	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES
Obs	30635	30635	30635	30635	30635
R^2	0.077	0.076	0.141	0.077	0.077

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.3.2. Mediating Role of Media Attention

Following Wen Zhonglin's [11] three-step mediation test, we estimate equations (2), (3), and (4). The results (Table 4, columns 2-4) show:

Column (2): DA significantly negatively affects AQ ($\beta = -0.00635$, $p < 0.001$)

Column (3): DA significantly increases MEDIA ($\beta = 0.0692$, $p < 0.001$)

Column (4): When both DA and MEDIA are included, MEDIA positively affects AQ ($\beta = 0.00201$, $p < 0.001$), and the negative coefficient on DA becomes less negative, confirming partial mediation.

Thus, H2 is supported: media attention partially mediates the relationship between data asset disclosure and audit quality, with disclosure attracting media coverage that improves information environment and constrains managerial opportunism.

5.3.3. Moderating Effect of Business Complexity

To test H3, we estimate equation (5) with interaction terms (Table 4, column 5). The coefficient on DA2 × COMP is -0.00123 ($p < 0.10$), indicating that business complexity steepens the inverted U-shaped relationship and shifts the inflection point rightward to 2.97. In complex firms, the negative impact of excessive disclosure on audit quality becomes more severe.

5.4. Robustness Checks

5.4.1. Propensity Score Matching (PSM)

To address self-selection bias, we implement PSM by dividing firms into high vs. low disclosure groups based on the median DA level. Matching quality tests show: (1) standardized biases for all covariates drop substantially (e.g., Fixed assets from -42.0% to -3.1%); (2) mean bias decreases from 18.5% to 2.1%; (3) pseudo R^2 falls from 0.045 to 0.001; (4) all post-matching balance tests have $p > 0.05$; and (5) 99.94% of treated firms are on the common support.

The average treatment effect on the treated (ATT) confirms that high-disclosure firms have significantly lower audit quality (ATT = -0.00997, t = -7.07). Regression on the matched sample yields consistent inverted U-shape results (DA: $\beta = 0.0154$, $p < 0.05$; DA2: $\beta = -0.00307$, $p < 0.01$). Moreover, the interaction terms (DA × COMP: $\beta = 0.0160$, $p < 0.01$; DA2 × COMP: $\beta = -0.00184$, $p < 0.01$) confirm that business complexity exacerbates the non-linear effect.

To address reverse causality and omitted variable bias, we use industry-year mean disclosure levels (IV_DA and IV_DA2) as instruments. First-stage results (Table 5, columns 3-5) show strong instruments (F-statistics >> critical values). Second-stage results (column 6) demonstrate that the inverted U-shaped relationship persists after controlling for endogeneity (DA: $\beta = 0.217$, $p < 0.001$; DA2: $\beta = -0.029$, $p < 0.001$).

Table 5. Robustness Checks

	PSM		2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)
	AQ	AQ	AQ	DA	DA2	AQ
DA	0.0154*	0.0300***	0.017**			0.217***
	-2.08	-3.83	-2.432			-4.902
DA2	-0.00307**	-0.00488***	-0.003***			-0.029***
	(-2.91)	(-4.45)	(-3.176)			(-4.653)
COMP		-0.0282**				
		(-3.23)				
DAxCOMP		0.0160**				
		-3.23				
DA2xCOMP		-0.00184**				
		(-2.67)				
IV_DA				0.294***	0.033	
				(-4.474)	(-0.067)	
IV_DA2				0	0.294***	
				(-0.036)	(-4.124)	
Controls	YES	YES	YES	YES	YES	YES
IND	YES	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES	YES
N	23087	23087	29033	29033	29033	29033
R^2	0.077	0.079	0.08	0.488	0.507	0.041

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.4.2. Instrumental Variable (IV) Approach

To address reverse causality and omitted variable bias, we use industry-year mean disclosure levels (IV_DA and IV_DA2) as instruments. First-stage results (Table 5, columns 3-5) show strong instruments (F-statistics >> critical values). Second-stage results (column 6) demonstrate that the inverted U-shaped relationship persists after controlling for endogeneity (DA: $\beta = 0.217$, $p < 0.001$; DA2: $\beta = -0.029$, $p < 0.001$).

5.5. Heterogeneity Analysis

5.5.1. Industry Heterogeneity

Following Peng Hongxing et al. (2017) [13], we classify high-tech firms based on the Strategic Emerging Industries Classification and Listed Companies Industry Classification Guidelines. Table 6 shows subsample regressions:

High-tech firms: Significant inverted U-shape (DA: $\beta = 0.024$, t = 2.97; DA2: $\beta = -0.004$, t = -3.44); inflection point at DA = 2.99. U-test confirms the non-linear relationship (t = 2.41, $p = 0.016$).

Non-high-tech firms: Neither DA nor DA2 is significant, with confidence intervals containing zero.

These results align with expectations: high-tech firms

possess stronger data governance architectures and information processing capabilities, making their disclosures more decision-relevant and impactful for auditor risk assessment.

Table 6. Heterogeneity Analysis

	(1)	(2)
	HighTech	Non-HighTech
DA	0.024***	-0.004
	(2.97)	(-0.39)
DA2	-0.004***	-0.000
	(-3.44)	(-0.29)
Dual	0.004***	-0.001
	(2.73)	(-0.59)
Controls	YES	YES
IND	YES	YES
YEAR	YES	YES
N	21342	11281
R^2	0.083	0.092

t statistics in parentheses
$^{*}\ p < 0.05, ^{**}\ p < 0.01, ^{***}\ p < 0.001$

6. Summary

This study investigates the inverted U-shaped relationship between data asset disclosure and audit quality, confirming the mediating role of media attention and the moderating effect of business complexity. The findings are robust to PSM and IV methods. Heterogeneity analysis reveals that the inverted U-shape exists only in high-tech firms. For regulators: Disclosure guidelines should balance transparency with auditor capacity, avoiding information overload. For firms: Optimize disclosure strategies by focusing on quality over quantity, especially for complex businesses. For auditors: Enhance professional competency in data asset auditing and leverage media cues to reduce information asymmetry. This research enriches audit quality literature by introducing data asset disclosure as a novel determinant, elucidates the underlying mechanism through media attention, and demonstrates boundary conditions via business complexity. It provides empirical evidence for digital economy regulation and corporate disclosure strategy optimization.

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