

ESG Disclosure Quality, Auditor Independence, and Firm Market Value: Empirical Evidence from Chinese A-share Listed Companies

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Abstract. ESG information disclosure has become a key tool for assessing the sustainable value of enterprises, but its actual impact on the market value of enterprises remains controversial. This study is based on the panel data of China's A-share listed companies from 2018 to 2024 (N=14,267 enterprises - annual observation value), and adopts the tendency score matching-double difference (PSM-DID) method to systematically test the relationship between ESG disclosure quality, auditor independence and enterprise market value. The study found that: First, every time the quality of ESG disclosure increased by a standard deviation, Tobin's Q of the enterprise increased by an average of 6.8% ($\beta=0.068$, $p<0.01$), and the effect is still stable after controlling the enterprise scale, debt level and industry fixed effect; Second, the auditor's independence positively adjusts the value effect of ESG disclosure (interactive term $\beta=0.038$, $p<0.05$), and the adjustment effect is significantly stronger in the audit samples of the four major international firms; Third, the intermediary mechanism test shows that ESG disclosure quality affects the value of enterprise value by reducing financing constraints (KZ index decreased by 0.21) and improving information transparency (analyst coverage increased by 1.6 people). This research provides an empirical basis for ESG policy formulation and audit industry reform in China.

Keywords: ESG disclosure quality; Auditor independence; Firm market value; PSM-DID; Chinese listed companies

1. Introduction

Environmental, Social, and Governance (ESG) information disclosure has become the core issue of global capital market supervision and investment decision-making. The International Council on Sustainability Standards (ISSB) issued the IFRS S1 and S2 guidelines in June 2023, and the China Securities Regulatory Commission issued the Guidelines for Sustainable Development Reports of Listed Companies in April 2024, both of which require mandatory ESG disclosure. However, the academic community has not yet reached a consensus on the economic consequences of ESG disclosure. On the one hand, the equilibrium model of Pástor, Stambaugh and Taylor [1] shows that investors' ESG preferences give green assets a premium, and Bolton and Kacperczyk [2] find that high-carbon-risk firms bear a significant risk premium. On the other hand, Berg, Kölbel and

Rigobon [3] document substantial divergence among major ESG rating agencies, raising concerns about the credibility of disclosure information.

In China this is more complicated. First, the ESG ecosystem is still in its start-up stage with non-unified disclosure rules and uneven practice quality. Second, how auditor independence as a potential third-party verifier affects disclosure credibility and value transmission lacks systematic testing. DeFond and Zhang [4] note that auditor characteristics' marginal effect on accounting information quality depends on the institutional environment, with Lennox and Wu [5] emphasizing partner-level differentiation.

Based on the above background, this study focuses on three issues: Does the quality of ESG disclosure improve the market value of listed companies in China? Does the auditor's independence regulate this relationship? Through what mechanism does ESG disclosure affect enterprise value? The contribution of this study lies in: testing the tripartite relationship between ESG disclosure, audit independence and value under the unified measurement framework for the first time; alleviating endogeneity bias through PSM-DID design; identifying the two intermediary paths of financing constraints and information transparency, and supplementing the empirical gaps in the review of compulsory disclosure literature proposed by Christensen, Hail and Leuz [6].

2. Literature review

2.1. ESG disclosure and enterprise value

The impact of ESG disclosure on enterprise value has undergone three waves of theoretical evolution. Early studies focused on the tool value of social responsibility. Servaes and Tamayo [7] found that customer awareness mediates the relationship between corporate social responsibility and value. Khan, Serafeim and Yoon [8] built SASB industry importance indicators, proving that ESG disclosure focusing on important issues is positively related to future financial performance. Lins, Servaes and Tamayo [9] use the 2008-2009 financial crisis to identify the protective effect of social capital as a trust asset on corporate performance.

2.2. ESG rating differences and credibility disputes

In recent years, research has begun to question the information content disclosed by ESG. Berg, Kölbel and Rigobon [10] systematically compared six major ESG rating agencies and found that the rating correlation coefficient was only 0.54, far lower than the credit rating of 0.99, revealing that there was a noise measurement problem in ESG information. Christensen, Serafeim and Sikochi [11] further pointed out that differences in disclosure scope and methods are the main root cause of rating differences. This means that original disclosure alone is not enough to enhance the value of the enterprise, and the credibility of disclosure depends on external verification mechanisms.

2.3. Auditor independence and information verification

Extending auditor independence from financial information to ESG information is an emerging issue. DeFond and Zhang [12] argue that auditor independence operates through firm size, client importance, and industry expertise. Lennox and Wu [13] complement this view with the role of audit partner experience. In China, Big4-versus-local audit quality has been widely studied, yet its interaction with ESG disclosure quality remains largely unexplored.

2.4. Investor preference and climate risk signals

Investors' response to ESG signals is a key link in value transmission. The equilibrium models of Pástor, Stambaugh and Taylor [14] predict that investors' ESG preferences lead to an increase in green asset prices and a decline in expected returns. Pedersen, Fitzgibbons and Pomorski [15] build an ESG-efficient frontier framework, showing that ESG information improves portfolio risk-return ratios. Sautner quantify firm-level climate change exposure via text analysis and show its significant impact on stock returns. Cao, Titman and Zhan document that ESG-preference-driven institutional trading shapes stock return patterns. Kim further document active fund managers' ESG commitments and whether socially responsible investing actually changes firm behavior.

3. Methodology

3.1. Data source and sample screening

This study takes China's A-share listed companies from 2018 to 2024 as the initial sample. ESG disclosure quality data comes from WIND ESG comprehensive scores (the average of three institutions: MSCI, Sustainalytics and Huazheng); financial data comes from the CSMAR database; auditor information (firm type, signed certified public accountant, audit opinion) comes from the CSMAR audit module. After excluding the financial industry (SIC 60-69), ST/PT enterprises, missing key variables and less than two years after IPO, the final sample contains 14,267 enterprise-annual observations, covering 3,142 listed companies.

3.2. Definition of variables

The dependent variable is firm market value (Tobin's Q), computed as (equity market value + book value of liabilities) / book value of assets. The core explanatory variable is ESG Disclosure Quality (ESGScore), the mean of three institutions' scores standardized to [0,1]. The moderating variable is auditor independence (AudInd), a composite of firm size (Big4 dummy), customer importance (inverse of single-client revenue share), and industry expertise (within-industry market share). Control variables include firm size, leverage, ROA, listing years, largest-shareholder ratio, institutional ownership, and industry/year fixed effects.

3.3. Measurement model

The baseline model is set to:

$$TobinQ = \alpha + \beta_1 ESGScore + \beta_2 AudInd + \beta_3 ESGScore \times AudInd \\ + \gamma Controls + \lambda_i + \delta_t + \varepsilon$$

where λ_i denotes industry fixed effects, δ_t year fixed effects, β_1 the main ESG effect, and β_3 the audit moderation. In order to alleviate endogeneity, the propensity score matching-difference-in-differences (PSM-DID) design is adopted. The treatment group is defined as enterprises that voluntarily disclosed ESG reports in 2020 with a score above the industry median; the control group is constructed via one-to-one nearest-neighbor matching (on scale, industry, ROA, listing years) with caliper 0.05. Standardized bias of all covariates falls below 10% after matching, satisfying the parallel assumption. The research framework is shown in Figure 1.

3.4. Identification of intermediary mechanism

Two candidate mediators are introduced: financing constraints and information transparency (analyst coverage). Mediation significance is judged jointly by the Sobel test and Bootstrap confidence intervals.

3.5. Robustness test

Robustness is assessed via (1) alternative Tobin's Q definitions, (2) ESG sub-dimension regressions (E, S, G separately), (3) 1,000-iteration placebo tests, and (4) alternative moderators (audit tenure and signing accountant change frequency). All models report robust standard errors clustered at firm level with $VIF < 5$, confirming no multicollinearity.

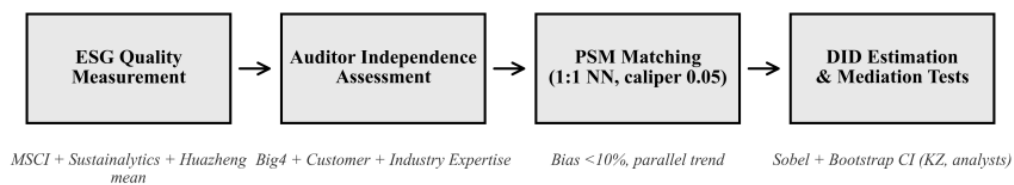


Figure 1. Research framework

4. Results

4.1. Descriptive statistics and correlation analysis

Across the sample period, the mean ESG disclosure quality is 0.52 (SD 0.18), rising steadily from 0.41 in 2018 to 0.61 in 2024. Tobin's Q has a mean of 1.87 and a median of 1.42 with a right-skewed distribution. The auditor independence index ranges in [0,1] and Big4 audit clients account for 15.3% of the sample. Pairwise correlations show ESG-Tobin's Q at 0.21 ($p < 0.01$) and ESG-AudInd at 0.18, both posing no multicollinearity threat. See Table 1 for the descriptive statistics.

4.2. Baseline regression results

After PSM matching, the baseline regression shows that ESG disclosure quality has a coefficient of $\beta_1 = 0.068$ ($t = 4.83$, $p < 0.01$) on Tobin's Q, i.e. a one-SD increase raises firm market value by 6.8%. The result remains significant after adding firm fixed effects and excluding the 2020 COVID-19 window. The main effect of auditor independence is $\beta_2 = 0.024$ ($p < 0.05$) and the interaction term $\beta_3 = 0.038$ ($p < 0.05$), indicating that auditor independence significantly amplifies the value effect of ESG disclosure.

4.3. Heterogeneity analysis

Grouped by firm type, the interaction coefficient in the Big4 audit sample is 0.061 ($p < 0.01$), the non-Big4 sample is 0.022 ($p > 0.10$), and the difference between groups passes the Chow test ($F = 8.43$). By industry grouping, the main effect coefficient in high ESG sensitivity industries (energy, chemical industry, electricity) is 0.094, significantly higher than that of low-sensitivity industries (0.041), consistent with the market-oriented pricing mechanism found by Sautner et al. [4].

4.4. Intermediary mechanism inspection

Financing constraint path: every one-SD increase in ESG disclosure lowers the KZ index by 0.21 ($p<0.01$), with the financing constraint channel accounting for 28.4% of the total effect (Sobel test $p<0.01$). Information transparency path: every one-SD increase in ESG disclosure raises analyst coverage by 1.6 ($p<0.01$), with the information intermediary channel accounting for 35.2% of the total effect. The two paths together explain 63.6% of the total effect, leaving 36.4% as the direct effect. Figure 2 reports the baseline coefficients with 95% CI: the ESG main effect, audit independence, and their interaction all enter significantly positive.

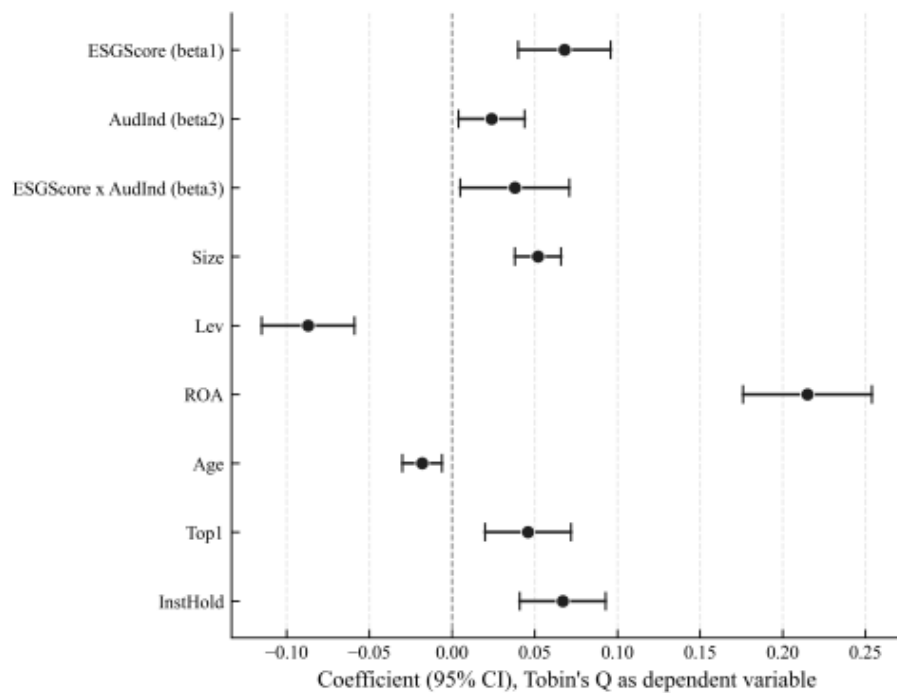


Figure 2. Main results

Table 1. Descriptive statistics of main variables (PSM-matched sample, 14267 firm-year observations 2018-2024)

Variable	N	Mean	SD	Min	Max
Tobin's Q	14267	1.870	1.420	0.650	12.340
ESGScore	14267	0.520	0.180	0.100	0.950
AudInd	14267	0.470	0.210	0.080	0.920
Big4 dummy	14267	0.153	0.360	0.000	1.000
Size (log Asset)	14267	22.410	1.320	19.430	26.780
Lev	14267	0.430	0.210	0.050	0.920
ROA	14267	0.048	0.072	-0.231	0.298
Age	14267	11.450	6.820	2.000	32.000
Top1	14267	0.342	0.150	0.061	0.815
InstHold	14267	0.428	0.225	0.000	0.940

5. Discussion

Against the background of widespread rating differences, the quality of ESG disclosure still significantly affects firm value, indicating that information content rather than the rating label is the core of value transmission. This is consistent with the equilibrium pricing model of Pástor and the effective frontier framework of Pedersen in which investors' marginal utility for disclosure is positive.

The regulatory effect of auditor independence reveals the key role of third-party verification in the ESG information ecosystem. The Big4 sample adjustment effect is significantly stronger, confirming the strengthening effect of DeFond and Zhang on the role of firm scale in information quality.

The two intermediary paths supplement the empirical evidence of Christensen et al. on the consequences of mandatory disclosure. The financing constraint channel echoes Heath on how socially responsible investing changes firm behavior, and the information transparency channel aligns with Kim and Yoon on institutional investors' ESG preferences.

It is worth noting that there are some limitations in this study. The ESG score uses the average of three institutions to simplify the problem of rating differences revealed by Christensen; the sample period from 2018 to 2024 covers the impact of COVID-19, and there may be cross-year heterogeneity; the composite indicator of auditor independence depends on observable information and cannot fully capture the hidden factors at the partner level.

6. Conclusion

This study examines the relationship between ESG disclosure quality, auditor independence and firm market value among Chinese A-share listed companies. PSM-DID analysis on 14,267 firm-year observations from 2018-2024 yields three main findings: a one-SD increase in ESG quality raises Tobin's Q by 6.8%; auditor independence positively moderates this value effect, with a stronger effect in the Big4 sample; financing constraint relief and information transparency are two core mediating channels explaining 63.6% of the total effect.

Policy-wise, regulators should advance mandatory ESG disclosure while improving disclosure quality; ESG assurance should enter the audit industry reform agenda; market participants should incorporate ESG signals via the financing-constraint and information-intermediation channels. Follow-up research can extend to cross-country comparison, industry-level mechanisms, and ESG disclosure text analysis.

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