Article

Watchdogs or Enablers? Analyzing the Role of Analysts in ESG Greenwashing in China

Yingxue Gao [1] and Yan Chen [1,2,*]

[1] Department of Accounting, Dongbei University of Finance and Economics, Dalian 116025, China; gaoyingxue418@163.com
[2] China Internal Control Research Center, Dalian 116025, China
* Correspondence: chenyan2001@126.com

Abstract: In this study, we investigate whether analysts in China can effectively function as watchdogs to monitor managerial   ESG greenwashing practices or if they inadvertently play a role in fostering such practices. Analyzing a sample of 8498 annual records from 1282 firms listed on the Chinese A-share market from 2012 to 2022, our linear regression analysis in Stata reveals that firms with significant analyst coverage are more prone to ESG greenwashing, even after controlling for firm-level variables such as leverage (Lev), return on assets (ROA), and cash flow. This finding supports the analyst pressure hypothesis. Notably, the effect is particularly pronounced in poorly performing firms but diminishes when star analysts are involved. Furthermore, we examine the moderating effect of corporate reputation on the relationship between analyst coverage and ESG greenwashing. The results indicate that a robust firm reputation amplifies the impact of analyst scrutiny on ESG greenwashing, especially by raising stakeholder expectations. Our aim is not to undermine the role of analysts but to highlight the need for strengthened ESG regulations to enhance analyst oversight and reduce ESG greenwashing. While our findings, influenced by their Chinese context, may not be universally applicable across all regions, they offer valuable insights for emerging markets seeking to implement effective ESG practices.

Keywords: analyst coverage; ESG greenwashing; firm reputation; firm performance; corporate governance

1. Introduction

In March 2021, the Securities and Exchange Commission (SEC) established the Climate and ESG Task Force to actively detect any misconduct associated with environmental, social, and governance (ESG) matters. One of the major violations that the Task Force has encountered in identifying ESG-related misconduct is ESG greenwashing. Greenwashing is defined as a deceptive practice where a company's assertions regarding sustainable development do not align with its actual business activities [1]. It involves presenting positive communication about environmental efforts despite poor environmental performance [2]. For example,Vale of Brazil, one of the world's largest iron ore producers, issued misleading ESG information regarding dam safety. Subsequently, the dam collapsed, killing 270 people and resulting in a loss of at least $4 billion in market capitalization. However, Vale is not the only corporation implicated in greenwashing practices. According to Ogilvy and Mather, the prevalence of greenwashing has escalated to 'epidemic proportions' [3]. Research further supports this concern, revealing that 98% of products advertised with environmental benefits are guilty of some form of greenwashing [4].

The skyrocketing incidence of greenwashing has the potential to severely damage customer trust in environmentally friendly products and services, hence decreasing the market for them [1,5,6]. Similarly, the market for socially aware investments may be weak-

ened by greenwashing, which can have a negative effect on investor confidence in environmentally conscious companies [7,8]. Moreover, ESG greenwashing exposes companies to legal repercussions if investors, NGOs, or government agencies contest the accuracy of their ESG statements. Like Vale, which was previously noted, the business is facing a permanent injunction that the SEC has requested. Lawsuits have also been brought against firms for deceptive advertising regarding the environment [9]. Honda, for instance, settled a class action lawsuit for making false and deceptive claims about a hybrid car's fuel economy. Why, then, do firms still engage in ESG greenwashing in spite of these risks? A significant contributing element to the persistence of ESG greenwashing is the absence of thorough market monitoring.

A potential solution to the lack of a market monitoring force is financial analysts. Financial analysts, recognized as expert authorities, analyze firm performance and offer strategic insights [10]. By assessing target stocks, they project future performance and provide investment guidance [11]. Numerous studies have indicated that analysts are conducive to mitigating information asymmetry, thereby acting as a deterrent against managerial opportunistic behavior [12–14]. A typical example is Yu (2008) [15], which demonstrates that firms with greater analyst coverage exhibit lower instances of earnings management. This effect is referred to as the 'monitoring hypothesis', arguing that financial analysts mitigate opportunistic behavior through reducing information asymmetry.

An alternative hypothesis posits an opposing prediction, suggesting that financial analysts may inadvertently contribute to managerial opportunistic behavior by exerting excessive pressure on managers. Specifically, analysts are tasked with projecting short-term earnings and formulating corresponding stock recommendations. When analysts anticipate a decline in a company's short-term earnings, they generally lower their forecasts and issue negative recommendations. These actions, however, can provoke negative market responses and may lead to potential sanctions for managers [16,17]. Faced with such outcomes, managers may prioritize short-term earnings targets in line with analyst forecasts, often at the expense of the company's long-term value [18]. This effect is referred to as the 'pressure hypothesis' of analysts, arguing that financial analysts exacerbate managerial opportunistic behavior by imposing pressures on managers.

According to the monitoring hypothesis, if analysts accurately communicate the real ESG performance of companies to the capital market, aiding stakeholders in recognizing the genuine value of these long-term endeavors, then management would be less likely to engage in ESG greenwashing. Therefore, analysts may play a monitoring role and thereby mitigate their ESG greenwashing practices. Conversely, the pressure hypothesis argues that increased analyst coverage might lead managers to prioritize short-term earnings over long-term firm value. As a kind of long-term activity, ESG practices are more likely to be sacrificed as they may not generate immediate financial returns. Furthermore, ESG disclosure has been proven to be a tool for manipulating surpluses to align them with the expectations of analysts [19,20]. Consequently, analysts could also be able to exacerbate the ESG greenwashing of managers.

We test the two competing hypotheses mentioned above by examining the role that analysts can play in detecting instances of ESG greenwashing. We analyze data comprising 8,498 annual records from 1,282 firms listed on the China A-share market, spanning from 2012 to 2022. As for the measurement of ESG greenwashing, it refers to the significant disparity between a firm's actual ESG performance and what it reports in its ESG disclosures, sourced from Bloomberg and the Huazheng database. Then, we obtain analyst coverage and company fundamental information from the CSMAR database. Our study reveals that analyst coverage exerts pressure on management, thereby exacerbating their engagement in ESG greenwashing in China, which aligns with the pressure hypothesis of analysts. Furthermore, the facilitation effect of analysts' concerns on ESG greenwashing can be intensified among firms that prioritize reputation. The robustness of our results is confirmed through a battery of tests, including instrumental variable regression and propensity score matching.

Our research contributes to the literature concerning the external market drivers of ESG greenwashing by identifying financial analysts as influential actors in this dynamic [21–23]. Building upon the frameworks established by Alves (2009), Delmas and Burbano (2011), and Kim and Lyon (2015) [21–23], which highlight consumer, investor, and competitor-induced incentives, we propose that analysts also play a critical role. Firms often engage in ESG greenwashing to align with analysts' earnings forecasts, mitigating potential negative impacts on their investment attractiveness and share prices. Moreover, we propose that the pressures from analysts are, in fact, a reflection of broader investor expectations. This connection means that when analysts exert pressure, they indirectly compel firms to engage in greenwashing as a response to the perceived risk of less attractive investment opportunities stemming from unmet earnings forecasts and the resultant potential decline in share prices. Thus, the pressure to engage in greenwashing is not merely a direct response to analyst expectations but is deeply intertwined with a need to meet broader investor demands. We not only identify a new dimension of market-driven ESG greenwashing but also clarify the mechanisms through which such pressures are transmitted.

Our research uncovers a compelling insight into the relationship between analyst coverage and ESG greenwashing in China. Existing literature generally indicates that financial analysts are pivotal in diminishing information asymmetry and serving as external overseers for corporate management [15,17,24,25]. However, we find that in the relationship between analyst coverage and ESG greenwashing, the monitoring role of analysts is diminished; rather, Chinese analysts appear to assume the role of pressure-givers, actively contributing to ESG greenwashing. This divergence from the finding of Hinze (2019) [26] posits that analyst monitoring boosts sustainable engagement in Germany. This phenomenon can be partially attributed to ESG development being government-led in China, coupled with the absence of a harmonized ESG disclosure framework and mandatory assurance requirements. These factors create challenges for market forces, including analysts, to effectively exert a monitoring influence. When such monitoring proves ineffective, analyst coverage may transform into pressure, potentially exacerbating ESG greenwashing. This insight contributes to the analyst pressure hypothesis and broadens the discussion on the adverse effects of analysts [18,27]. Simultaneously, our finding underscores the significant role that government policy plays in shaping ESG practices in emerging markets, pointing out the relative immaturity of the capital markets in such contexts. Additionally, we are pioneers in exploring how firm reputation moderates the relationship between analyst coverage and ESG greenwashing. While firm reputation is generally seen as a deterrent against unethical corporate behavior due to the potential risks to a company's public image and stakeholder trust [28–30], our study reveals its limitations in disciplining companies against ESG greenwashing. The fragile nature of reputation—where companies are strongly motivated to avoid any action or information that could tarnish their image—does not necessarily prevent greenwashing practices. Instead, it may simply lead companies to more carefully manage the disclosure of such activities rather than curtail them entirely. We expanded on the literature addressing the dark side of firm reputation [31,32] by investigating how firm reputation positively moderates the relationship between analyst coverage and ESG greenwashing.

Our research carries significant practical implications for emerging markets to enhance ESG development. In most emerging markets, ESG development is predominantly driven by government initiatives. Under such environments, it is crucial for governments to amplify their efforts in guiding market activities towards sustainable practices. This approach could progressively foster a more robust ESG market, as exemplified by initiatives like the dual carbon policy of China, which intends to reach carbon neutrality by 2060 and peak carbon emissions before 2030. Moreover, our findings highlight a critical gap in the role of analysts in overseeing ESG practices, primarily due to the lack of uniform ESG disclosure standards and mandatory assurance requirements. This disparity not only hinders effective monitoring but also complicates efforts to maintain accountability

across different industries. Consequently, there is a pressing need to accelerate the development and implementation of harmonized ESG disclosure standards and mandatory assurance requirements. Such standards would enhance transparency and consistency, thereby empowering analysts to more effectively scrutinize and hold firms accountable for their ESG claims.

It is important to clarify that our intention is not to diminish the role of analysts in this framework. Instead, we aim to highlight the crucial need for more robust ESG regulations that can bolster analyst oversight capabilities. Strengthening these regulations would not only empower analysts but also significantly reduce the prevalence of ESG greenwashing. This approach underscores the dual need for government action to guide sustainable market practices and for global standards that can unify and clarify ESG disclosures, creating a more transparent and accountable corporate landscape.

2. Literature Review

2.1. Analysts Coverage

Recognized as authoritative experts, financial analysts evaluate firm performance and deliver strategic insights [10]. By analyzing target stocks, they forecast future performance and offer guidance for investment decisions [11]. Therefore, analyst coverage is defined as the number of analysts who made forecasts about a firm in a given year [15]. The greater the number of analysts, the higher the degree of analyst coverage.

Previous studies have presented two contrasting views on the role of analysts. From the perspective of the monitoring hypothesis, financial analysts possess several distinctive characteristics that enable them to effectively monitor the management of firms [13–15]. First, compared to regular executives and board members, analysts typically have a higher level of financial sophistication. They undergo specialized training and have access to resources that enable them to navigate through intricate financial statements and complex footnotes. Second, analysts engage in continuous and long-term tracking, with every action by management and any irregularities in the financial statements triggering their attention and prompting updates to the earnings forecast. This level of oversight and scrutiny is not typically afforded to board members, auditors, or other gatekeepers. Evidence suggests that analysts are the most effective external reporters of corporate fraud, detecting financial fraud in listed firms at a much higher rate than regulators and auditors [13]. Finally, analysts are expected to provide information that serves the interests of not only existing shareholders but also potential shareholders and other participants in the market, making it less susceptible to manipulation by a single interest group.

In contrast to the monitoring view, the pressure hypothesis asserts that analysts also have certain drawbacks that can exert pressure on managers, potentially hindering their ability to prevent or even worsening opportunistic behavior within firms [27,33–35]. It is common practice for analysts to issue a short-term earnings forecast for a company, serving as a crucial reference for investors in making investment decisions. However, if a company subsequently announces actual earnings below expectations, a significant crash in the stock price will occur. To mitigate the adverse effects of the plunge on the firm, managers may attempt to align earnings with the levels anticipated by analysts. Cotter (2006) [19] even argues that one of the goals of surplus management is to bring the firm's earnings level in line with analysts' earnings forecasts. Furthermore, analysts themselves face pressure from various sources that may influence their incentives and diminish their monitoring function. Analysts often face pressure to attract more investment banking business for their employers, and they also feel compelled to maintain favorable relationships with managers to gain access to private information. Additionally, they encounter pressure from clients associated with their brokerage houses. In some cases, analysts may even issue reports reluctantly to shield the major clients of brokerage houses from losses linked to stock price crashes [36–38]. These pressures have the potential to compromise analysts' independence and impact their monitoring role in corporate governance.

2.2. ESG Greenwashing

ESG greenwashing is defined as the deceptive practice of companies presenting a misleading or exaggerated picture of their environmental, social, and governance (ESG) initiatives and performance [39]. This behavior undermines the reliability of disclosed ESG information and poses a barrier to the integration of genuine ESG considerations into investment decisions [39]. Firms engage in greenwashing to inflate their ESG credentials, which can be detrimental to the integration of authentic ESG considerations into investment decisions [40]. Recognizing the adverse effects of ESG greenwashing, research has increasingly focused on strategies to mitigate its occurrence. It has been observed that scrutinizing governance factors at both the firm level and country level can effectively deter companies from making misleading disclosures concerning ESG dimensions [41].

Delmas and Burbano's seminal work articulated that ESG greenwashing is often driven by external market forces, organization drivers, and individual psychological divers. From the perspective of the external market, Zhang (2022) [42] investigated the determinants leading to companies engaging in ESG greenwashing, emphasizing the influence of financial constraints on motivating firms to greenwash. At the organization level, Yu et al. (2020) [39] provided evidence indicating that ESG greenwashing can be discouraged through the scrutiny of independent directors, institutional investors, influential public interests within less corrupt national systems, and by being cross-listed in multiple countries. Regarding individual psychological drivers, cognitive biases such as optimistic bias, narrow decision framing, and hyperbolic intertemporal discounting significantly influence managers' decision-making in ESG greenwashing. These effects are amplified under conditions of uncertain regulatory enforcement related to firm greenwashing and the absence of standardized norms [22].

Among the determinants, market external drivers play a crucial role in explaining why some brown firms opt to greenwash. These firms are pressured by both consumers and investors to present an environmentally friendly image, thereby incentivizing them to portray their environmental performance positively. This is particularly appealing given the minimal legal or regulatory consequences associated with such actions. In addition to pressures from consumers and investors, these firms also face significant expectations from financial analysts. However, the role of analysts in ESG greenwashing practices has largely been overlooked. This gap in the literature suggests a need for further research into how analyst expectations specifically contribute to the prevalence of ESG greenwashing.

2.3. Firm Reputation

Reputation is often defined by scholars as an intangible asset that captures stakeholders' opinions about a company. Previous research consistently shows that a positive reputation confers multiple advantages on a firm. According to Walsh et al. (2009) [43], a company that is reputed for delivering high-quality products or services not only secures customer trust but also encourages positive word of mouth, strengthens customer loyalty, and enhances profits. Complementing these findings, Boyd, Bergh, and Ketchen (2010) [28] discovered that a good reputation positively influences firm performance. Within the workplace, a strong corporate reputation helps attract and retain more productive and motivated employees, which in turn boosts firm performance. In general, a firm's reputation increases the satisfaction and loyalty of various stakeholders, including investors [44], employees, and customers [45].

Although having a good reputation offers many advantages for a company, it also raises stakeholder expectations, which can amplify the effects of any unfavorable occurrences within the company, making them more burdensome [32]. Managers with high reputations must continually meet these high standards [46]; failing to do so can result in serious consequences [44]. Furthermore, a firm with a strong reputation may face more

severe penalties for expectancy violations compared to a company with a lesser reputation, as the high reputation makes them more prominent [28,47]. Rhee and Haunschild (2006) [48], for example, investigated the relationship between reputation and the effects of product recalls and discovered that companies with a high outcome-based reputation—that is, a good reputation for product quality—were punished more severely by the market during recalls. This phenomenon, termed the "liability of a good reputation", implies that companies that are recognized for a particular caliber of performance have to work tirelessly to uphold that quality, or else they may be subject to harsher penalties than their less well-known competitors. Rhee (2009) [49] found that companies with a strong reputation for quality feel more pressure to improve quality in order to prevent product recalls. According to this corpus of studies, a company's attention turns to protecting its positive outcome-based reputation from eroding once it has established it. This often results in management decisions being channeled towards achieving and maintaining the associated outcome. Consequently, this pressure to uphold a reputation might lead management to engage in opportunistic behavior to meet stakeholder expectations.

3. Hypotheses Development

3.1. Analyst Coverage and ESG Greenwashing

Over two decades ago, sustainability information was not deemed relevant for financial analysts' assessments [50]. However, by the turn of the century, a positive shift had been observed. An increasing number of firms began including ESG disclosures to demonstrate their commitment to sustainable issues, while also using them as a tool to assess environmental risks from a financial perspective. This shift has elevated the importance of ESG information as a crucial criterion for many analysts. Despite this trend, some enterprises have resorted to deceptive practices known as 'greenwashing' to create a positive sustainable performance image while concealing poor ESG performance.

Monitoring and overseeing ESG greenwashing by managers presents significant challenges, particularly in China, where the development of ESG is still relatively nascent compared to other developed economies. Historically, China has utilized administrative governance to guide ESG development instead of market forces, primarily to protect investors [51]. This approach limits the role of analysts as market monitors, as the government retains a dominant influence over ESG matters. Moreover, analysts often face pressures from their employers and managers that may compromise their motivation to monitor ESG greenwashing effectively [36–38]. In some instances, analysts may feel compelled to publish positive ESG assessments to protect the major clients of brokerage houses, potentially at the expense of sustainable investors.

Additionally, while analysts are typically experts in finance and investment, their proficiency in ESG-specific knowledge may be lacking. An inadequate understanding of ESG-related techniques or policies can lead to difficulties in accurately assessing the truthfulness of ESG disclosures and in monitoring managerial greenwashing practices. This challenge is exacerbated by the absence of standardized ESG disclosure protocols and mandatory assurance requirements in China. Without such standardization, analysts encounter obstacles in comparing ESG practices and performances across different companies and sectors, complicating their ability to evaluate true ESG performance. Companies that are not obligated to report ESG activities lack accountability, which diminishes the credibility of their ESG information and complicates assessments of genuine performance by analysts. Furthermore, the sophisticated methods employed in ESG greenwashing add to these challenges. Techniques such as manipulating the readability and emotional tone of statements, as well as the design and color of charts and graphs, are used to create a more biased interpretation of the data [52]. These subtle yet complex tactics make ESG greenwashing more covert and challenging to detect. Overall, these factors combine to make it particularly difficult for analysts to effectively monitor and focus on ESG greenwashing by managers in China.

Analyst coverage can evolve into pressure when monitoring fails to be effective, further exacerbating ESG greenwashing. First, the pressure from analyst followings often compels managers to engage in ESG greenwashing as a means to meet earnings forecasts. Research indicates that one significant motive for management to disclose ESG information is to align it with surplus management strategies [19,20]. Furthermore, ESG greenwashing has been shown to enhance the information content of firm performance and influence stakeholders' market evaluation of the firm [5,53,54]. Hence, there is a strong incentive for management to engage in ESG greenwashing to cater to analysts' earnings forecasts and improve investors' evaluation of the firm.

Second, the pressure exerted by analysts on managers can foster myopic behavior, undermining long-term sustainability initiatives. Analysts often evaluate companies based on short-term performance metrics, a practice known as short-termism. This focus can compel managers to prioritize immediate financial results over substantive, long-term environmental and social goals [55,56]. However, to maintain a superficial reputation for environmental responsibility and secure competitive advantages, managers may manipulate ESG information.

Third, when analysts' forecasts are perceived as unattainable, ESG disclosures could serve as a self-protective tool for managers. Research has demonstrated that ESG disclosure often serves to obscure management failures, acts as a compensatory mechanism following negative publicity, and helps minimize reputational damage [57–59]. Thus, in situations where meeting analysts' expectations is unlikely, managers may engage in impression management using ESG disclosures. This tactic diverts public attention and conceals managerial shortcomings, leveraging the generally positive perception of corporate responsibility to shield the company from criticism.

Based on the above analysis, we propose the following hypothesis:

H1: *Analyst coverage may exacerbate ESG greenwashing of managers.*

3.2. Analyst Coverage, Firm Reputation, and ESG Greenwashing

Firm reputation is often viewed as a public expectation that the company has developed based on its past behavior. A positive reputation raises stakeholder expectations, but high-reputation firms also face stronger penalties than their lower-reputation peers when expectations are difficult to realize [29,47]. Extensive research has identified a pervasive negativity bias among stakeholders, where the negative reactions to a firm's failure to meet expectations are significantly stronger than if those expectations had not been established at all [32,47,49,60,61]. As a result, managers, especially those in firms with strong stakeholder coalitions focused on specific aspects of the firm, are often compelled to prioritize these expectations in their decision-making processes to avoid negative repercussions [62].

While stakeholder concerns are diverse, ESG performance has become a key factor in measuring the attractiveness of firms as environmental, social, and corporate governance (ESG) issues gain traction. Expectation reports published by analysts can have an influence on the stakeholders' perceptions and expectations of a company, which may strengthen or weaken their trust and support. Consequently, in order to avoid inflicting penalties for failing to meet expectations, high-reputation firms are more likely to engage in ESG greenwashing to maintain their favorable ESG image with a high level of analyst coverage. For example, high-reputation firms are likely to conceal unfavorable ESG information in order to create a deceptive image of being environmentally friendly to meet stakeholder expectations. In this way, positive reputations may become a burden for their respective companies and further exacerbate the pressure effect of analysts following ESG greenwashing [32].

In addition, protecting reputation is one of the reasons why highly reputable companies are more likely to engage in ESG greenwashing in the face of analyst coverage. A

favorable reputation has the potential to attract high-caliber employees and loyal customers, facilitate the acquisition of essential resources, enhance resilience during crises, and enable firms to command premium prices for their products and services [28–30]. Once a company has built a positive image, the focus switches to preventing that reputation from being damaged or undermined. Positive evaluations from analysts can further enhance a company's reputation and boost investor confidence. Therefore, when subjected to analyst coverage, high-reputation firms may enhance their reputation by exaggerating their efforts and achievements in ESG as a way to obtain positive analyst evaluations.

Based on the above analysis, we propose the following hypothesis:

H2: *Firm reputation will further intensify the relationship between analysts and ESG greenwashing.*

4. Data and Empirical Design

4.1. Data Resource

To test our hypotheses, we analyze a sample of Chinese A-share listed firms, excluding ST companies and those in the financial industries. Chinese A-share listed firms are companies that are publicly traded on stock exchanges in mainland China, such as the Shanghai Stock Exchange and the Shenzhen Stock Exchange. The bulk of data used in studies of the Chinese capital market typically comes from A-shares. Given that the A-share market is the largest stock market in China, its substantial trading volume not only provides a rich dataset for research but also enhances the reliability and representativeness of the research findings. The sample includes 8498 observations from 1282 listed companies, spanning from 2012 to 2022. We chose this time range for several reasons. First, for data availability, the scores used to calculate the degree of greenwashing are provided by rating agencies, so we started collecting data from the year these agencies began publishing their scores. Second, short-term data are often subject to various fluctuations, whereas data over a longer period offer a more comprehensive view and enhance the stability and precision of statistical analysis.

We collected firm-level variables from the CSMAR database. The CSMAR Database (China Stock Market & Accounting Research Database) is an accurate, research-oriented database focused on economics and finance. Developed by Shenzhen Xishima Data Technology Co., Ltd.(Shenzhen, China), it is tailored to meet the needs of academic research. The database draws on the professional standards of authoritative databases such as CRSP, COMPUSTAT, TAQ, and THOMSON, while also accommodating the specific context of China. CSMAR is notable for being the first data provider from Greater China to join the WRDS (Wharton Research Data Services) research data platform of the Wharton School. The database comprehensively covers aspects such as listed companies' financial statements, trading quotes, and unstructured news and information. Therefore, it is widely used by researchers studying the Chinese capital market to obtain detailed company-level data. Additionally, it includes research reports and company announcement data, which significantly enhances the accuracy and reliability of the data provided.

Apart from fundamental corporate attributes, our primary interest lies in identifying signs of ESG greenwashing. We employ the ESG disclosure scores from the Bloomberg ESG Database. The Bloomberg ESG Database offers a comprehensive set of over 120 environmental, social, and governance indicators that accurately represent firms' ESG disclosure practices and serve as a metric for evaluating sustainable performance. This database covers over 20,000 firms across more than 50 countries. Additionally, we use the Huazheng database to assess the actual sustainable performance of companies based on their ESG practices. The Huazheng database, a leading rating agency extensively used for ESG-related research in China, provides a valuable resource for our analysis.

In addition, we undertook the following data processing steps: (1) Samples missing key explanatory variables related to analyst coverage data were excluded. (2) Observations from companies categorized under finance and insurance, as well as those labeled

as 'ST' or 'ST*', were removed. (3) Samples lacking dependent and control variable data were excluded. (4) A trimming procedure was applied to the continuous variables, capping them at the 1% upper and lower percentiles. Following these criteria, the study ultimately encompassed 1282 listed companies, yielding 8498 annual observational data points.

4.2. Variable Design

4.2.1. ESG Greenwashing

Greenwashing refers to a deceptive practice where a company's assertions regarding sustainable development do not align with its actual business activities [1]. It involves presenting positive communication about environmental efforts despite poor environmental performance [2]. Consistent with Yu et al. (2020) [39], we define greenwashing as firms attempting to portray a facade of sustainable performance by selectively disclosing ESG data while exhibiting inadequate performance in actual ESG terms.

In accordance with Zhang (2022a) [63], we use our criteria to determine a company's sustainable efficiency and then compute its peer-relative greenwashing score. The difference between a normalized measure of a firm's position in the distribution of its ESG real performance score relative to its peers and a normalized measure of the firm's position in the ESG disclosure score distribution relative to its peers is the firm's peer-relative greenwashing score, according to Equation (1). A larger disparity denotes a higher degree of greenwashing, which is an indication of the company's ineffective sustainable performance.

$$Greenwash_{i,t} = \left(\frac{ER_{i,t} - E\bar{R}_{dis}}{\sigma_{dis}}\right) - \left(\frac{ER_{i,t} - E\bar{R}_{per}}{\sigma_{per}}\right) \tag{1}$$

The first term denotes the standardized representation of a company's position in the distribution of the disclosure score for environmental rating (ER) relative to its peers. The second term serves as an indicator of the company's standing in relation to its peers in terms of the distribution of its real environmental rating performance score. Specifically, $E\bar{R}_{dis}$ and $E\bar{R}_{per}$ represent the average values of ESG disclosure and performance scores, respectively. The standard deviations of the performance scores and environmental disclosure are denoted by the σ_{dis} and σ_{per}, respectively. In fact, the Bloomberg ESG rating is considered the ESG disclosure score, while the Huazheng ESG rating is regarded as the ESG true performance score.

4.2.2. Coverage

Securities analysts can be broadly divided into two categories: buy-side and sell-side analysts. Buy-side analysts typically work for institutional investors such as asset management firms, pension funds, and hedge funds. Their primary role is to generate investment recommendations to help these institutions make informed investment decisions. On the other hand, sell-side analysts are employed by securities firms, investment banks, or independent research institutions. These institutions assign analysts to analyze publicly listed companies. Sell-side analysts evaluate these companies and produce research reports, which are then distributed to external clients, including institutional and individual investors, to aid in their investment decision-making processes. Our research specifically focus on the role and impact of sell-side analysts.

Generally, it is uncommon for an institution to assign more than one analyst to follow the same listed company. Consequently, following Yu (2008) [15], we define analyst coverage as the total number of analysts who provided forecasts for a firm during a given year. Specifically, we employ the natural logarithm of this number as a quantitative metric to assess the extent of analyst coverage for the firm throughout the year. This approach offers a more direct method for assessing the extent of analyst coverage and is therefore frequently used in related research.

In robustness testing, we also employ the number of analysts publishing research reports as a proxy variable. We use this figure since the majority of analysts release at least one earnings projection for a company each year, and most of them release at most one forecast per month [27].

4.2.3. Control Variable

Consistent with the previous literature, we include a vector of control variables in our analysis. These variables comprise Enterprise Size, Gearing Ratio (Lev), Return on Assets (ROA), Enterprise Cash Holding Level (Cash), Enterprise Revenue Growth Rate (Growth), Equity Concentration (Top1), Board Size (Board), Percentage of Independent Directors (Dep), and Institutional Shareholding (Inst). Additionally, we control for the industry (IND) and year (YEAR) to which the firm belongs. Table 1 provides a summary of all variables.

Table 1. Main Concepts and Terminologies.

Variable	Definition
Greenwash	The variance between the standardized measure of a firm's position in the distribution of ESG disclosure scores and its standardized position in the distribution of ESG performance scores compared to its peers.
Coverage	The natural logarithm of the number of analysts tracking firms
Reputation	We performed a factor analysis on 12 indicators to calculate the corporate reputation score. Following this, the corporate reputation scores were divided into ten categories, spanning from the lowest to the highest. Each category was then assigned a REP value, incrementally ranging from 1 to 10.
Size	The natural logarithm of a firm's total assets.
Lev	The leverage ratio, equal to total liabilities divided by total assets.
ROA	Return on assets.
Cash	The ratio of monetary funds to total assets.
Growth	The difference between the sales figures of the current year and the previous year, divided by the sales figure of the previous year, represents the year-over-year sales growth rate.
Top1	The ratio of the number of shares held by the largest shareholder to the total number of shares is known as the concentration of ownership.
Board	The natural logarithm of board size.
Dep	The ratio of independent directors on the board refers to the proportion of board members who are independent of the management and daily operations of the company.
Inst	The ratio of the total number of shares held by institutional investors to the total share capital outstanding.

4.3. Model Design

To test our hypothesis, we calculate the likelihood of a firm being categorized in the greenwashing group by employing the following model:

$$Greenwash_{i,t} = \beta_0 + \beta_1 Coverage_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 ROA_{i,t} +$$
$$\beta_5 Cash_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Top1_{i,t} + \beta_8 Board_{i,t} + \beta_9 Dep_{i,t} + \beta_{10} INST_{i,t} + \quad (2)$$
$$Industry\ Effect + Year\ Effect + \varepsilon_{i,t}$$

where $Greenwash_{i,t}$ represents the level of greenwashing of listed company i in year t, $Coverage_{i,t}$ denotes the analysts coverage of listed company i in year t, and $Controls_{i,t}$ stands for a series of control variables. Ind_j indicates the industry-fixed effects that do not change over time for industry i, $Year_t$ controls for time-fixed effects, and $\varepsilon_{i,t}$ is the random error term.

If hypothesis H1 is confirmed, the coefficient of $Covergae_{i,t}$ would be significantly positive, suggesting that more analyst coverage would increase the ESG greenwashing of firms.

5. Empirical Results and Discussion

5.1. Descriptive Results

The results of the descriptive statistics are presented in Table 2. The findings indicate that the mean value of Greenwash is −0.464, with corresponding maximum and minimum values of 2.811 and −3.257, respectively. Additionally, the mean value of Coverage is 1.927, with maximum and minimum values of 3.970 and 0, respectively. These results highlight a significant disparity in the number of analysts tracking various sample companies.

Table 2. Summary Statistics.

VarName	Obs	Mean	SD	Min	Median	Max
Greenwash	8498	−0.464	1.228	−3.257	−0.514	2.811
Coverage	8498	1.927	1.212	0.000	2.079	3.970
Size	8498	23.400	1.321	20.621	23.301	27.148
Lev	8498	0.482	0.191	0.078	0.496	0.866
Cash	8498	0.063	0.067	−0.125	0.059	0.261
ROA	8498	0.069	0.067	−0.135	0.058	0.303
Growth	8498	0.148	0.325	−0.481	0.100	1.856
Top1	8498	3.567	0.455	2.311	3.625	4.362
Board	8498	1.154	0.064	0.959	1.162	1.311
Dep	8498	3.645	0.134	3.536	3.621	4.111
Inst	8498	3.936	0.572	1.483	4.107	4.564

5.2. Correlation Analysis

Table 3 presents the Pearson correlation coefficient matrix for all variables. The data reveals a significant and positive correlation between analyst coverage and ESG greenwashing. The analysis results revealed a positive correlation between the analyst coverage of listed companies and the level of ESG greenwashing at a 1% significance level. This preliminary evidence suggests that companies attracting greater analyst coverage are more likely to engage in ESG greenwashing. Additionally, the correlation coefficients between the control variables and the explanatory variables are all below 0.600, indicating the absence of significant multicollinearity among the variables.

Table 3. Pearson Correlation Matrix of Main Variables.

	Greenwash	Coverage	Size	Lev	Cash	ROA	Growth	Top1	Board	Dep	INST
Greenwash	1										
Coverage	0.08 ***	1									
Size	0.09 ***	0.28 ***	1								
Lev	−0.03 ***	−0.10 ***	0.49 ***	1							
Cash	0.05 ***	0.26 ***	−0.01	−0.25 ***	1						
ROA	0.06 ***	0.44 ***	−0.06 ***	−0.39 ***	0.55 ***	1					
Growth	0.07 ***	0.16 ***	0.03 **	−0.00	0.10 ***	0.31 ***	1				
Top1	0.02 **	0.05 ***	0.22 ***	0.08 ***	0.06 ***	0.05 ***	−0.04 ***	1			
Board	−0.01	0.04 ***	0.16 ***	0.09 ***	−0.00	−0.05 ***	−0.05 ***	0.03 **	1		
Dep	0.02 **	0.04 ***	0.11 ***	0.04 ***	0.00	0.00	−0.00	0.08 ***	−0.46 ***	1	
INST	0.04 ***	0.17 ***	0.40 ***	0.17 ***	0.07 ***	0.06 ***	−0.00	0.50 ***	0.18 ***	0.00	1

** $p < 0.05$, *** $p < 0.01$.

5.3. Hypothesis Testing

Table 4 presents the results of tests investigating the influence of analyst coverage on the extent of ESG greenwashing. The first column displays the univariate regression results, while the second column incorporates the regression results with the inclusion of control variables.

The findings reveal that the coefficients of Coverage consistently exhibit positive values at the 1% significance level, suggesting that firms attracting significant analyst coverage are more likely to engage in ESG greenwashing. These results lend support to the analyst pressure hypothesis, indicating that analyst coverage places pressure on management, thereby increasing their participation in ESG greenwashing.

Table 4. Baseline Regression Results.

	Greenwash	Greenwash
	(1)	(2)
Coverage	0.0925 ***	0.0454 ***
	(8.48)	(3.39)
Size		0.1009 ***
		(6.62)
Lev		−0.5378 ***
		(−6.08)
Cash		0.3143
		(1.35)
ROA		−0.3398
		(−1.25)
Growth		0.2453 ***
		(5.57)
Top1		0.0118
		(0.35)
Board		−0.3275
		(−1.30)
Dep		0.0411
		(0.35)
Inst		−0.0107
		(−0.39)
Constant	−0.8977 ***	−2.5894 ***
	(−11.22)	(−4.07)

Ind	Yes	Yes
Year	Yes	Yes
N	8498	8498
adj. R^2	0.015	0.025
F	8.8462	9.4356

t statistics in parentheses. *** $p < 0.01$.

5.4. Analyst Coverage, Firm Reputation, and ESG Greenwashing

We also examined the moderating role of firm reputation in the relationship between analyst coverage and ESG greenwashing. Reputation is commonly regarded as an intangible asset that encapsulates stakeholders' perceptions of a firm. In terms of measurement, academic research frequently uses reputation evaluation systems to gauge a firm's reputation. Building on the work of Philippe and Durand (2011) [64], we have selected twelve indicators to assess corporate reputation. These comprise the following: the gearing ratio, current ratio, and long-term debt ratio from the perspective of creditors; the earnings per share, dividends per share, and audits by the Big Four accounting firms from the perspective of shareholders; the sustainable growth rate and the percentage of independent directors from the enterprise perspective; and the ranking of the company's assets, revenue, net profit, and industry value from the perspectives of society and consumers. To determine corporate reputation scores, we factored in these indicators. These scores were then divided into ten groups, from low to high, and assigned a matching REP number between 1 and 10.

To examine the moderating effect of corporate reputation on analyst coverage and corporate ESG greenwashing, we introduce the cross-multiplier term interact (Coverage × Reputation) between the number of analyst coverages and corporate reputations in the baseline regression model. The regression results in Table 5 indicate that the coefficients of both Coverage and the cross-multiplier term interact (Coverage × Reputation) are positive at the 1% significance level. This suggests that corporate reputation further exacerbates the impact of analyst coverage on ESG greenwashing. These findings confirm Hypothesis 2, which posits that a favorable reputation increases future expectations from stakeholders and amplifies the consequences of negative corporate events. Consequently, it may also pose a burden to the firm, thereby intensifying the pressure-facilitating effect of analyst coverage on ESG greenwashing.

Table 5. Moderating Effect of Firm Reputation.

	Greenwash
Coverage	0.0350 **
	(2.41)
Reputation	0.0073
	(0.73)
Coverage × Reputation	0.0136 ***
	(2.84)
Size	0.1102 ***
	(5.92)
Lev	−0.5386 ***
	(−5.53)
Cash	0.2645
	(1.09)
ROA	−0.4979
	(−1.38)
Growth	0.2615 ***
	(5.55)

Top1	−0.0011
	(−0.03)
Board	−0.3534
	(−1.28)
Dep	0.0351
	(0.28)
Inst	−0.0085
	(−0.28)
Constant	−2.7682 ***
	(−3.74)
Ind	Yes
Year	Yes
N	7761
adj. R^2	0.026
F	8.4562

t statistics in parentheses. ** $p < 0.05$, *** $p < 0.01$.

6. Robustness Tests

6.1. Elimination of Disruptive Factors

Research indicates that analyst coverage is affected by corporate characteristics like size, profitability, and the proportion of institutional shareholdings. To isolate the impact of these corporate characteristics on analyst coverage, we have developed the following model, based on the methodology outlined by Yu (2008) [15]:

$$
\begin{aligned}
Coverage_{i,t} = Size_{i,t} + Cash_{i,t} + ROA_{i,t} + Growth_{i,t} + TobinQ_{i,t} \\
+ INST_{i,t} + Industry\ Effect + Year\ Effect + \varepsilon_{i.t}
\end{aligned}
\tag{3}
$$

The $\varepsilon_{i,t}$ derived from the regression of the model captures the level of analyst coverage, excluding firm characteristics, denoted as Net Coverage (Net Analyst Coverage). To address endogeneity concerns, we incorporate Net Coverage as an explanatory variable in model (2) while keeping the other variables consistent with those in model (2).

$$
\begin{aligned}
Greenwash_{i,t} = \beta_0 + \beta_1 NetCoverage_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 ROA_{i,t} \\
+ \beta_5 Cash_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Top1_{i,t} + \beta_8 Board_{i,t} + \beta_9 Dep_{i,t} \\
+ \beta_{10} INST_{i,t} + Industry\ Effect + Year\ Effect + \varepsilon_{i,t}
\end{aligned}
\tag{4}
$$

Table 6 presents the outcomes of testing the impact of Net Coverage on the level of ESG greenwashing. The results show that the coefficients for Net Coverage are consistently positive and significant at the 1% level, suggesting that firms with extensive analyst coverage are more likely to engage in ESG greenwashing.

Table 6. Net Analyst Coverage and Greenwashing.

	Greenwash
Net Coverage	0.0454 ***
	(3.39)
Size	0.1183 ***
	(8.43)
Lev	−0.5742 ***
	(−6.57)
Cash	0.3319
	(1.43)
ROA	−0.0140

	(−0.05)
Growth	0.2453 ***
	(5.57)
Top1	0.0118
	(0.35)
Board	−0.3275
	(−1.30)
Dep	0.0411
	(0.35)
Inst	−0.0091
	(−0.33)
Constant	−2.8934 ***
	(−4.63)
Ind	Yes
Year	Yes
N	8498
adj. R^2	0.025
F	9.4356

t statistics in parentheses. *** $p < 0.01$.

6.2. Hs300 Index Dummy as an Instrument

To address concerns about endogeneity and enhance the robustness of our findings, we have adopted an instrumental variable approach, inspired by Yu (2008) [15]. Specifically, we use whether the listed companies are part of the annual list of CSI 300 constituent stocks (HS300) as the instrumental variable. The construction of this instrumental variable is as follows: based on the last published list of HS300 constituent stocks each year, if the listed company is included, then Hs = 1; otherwise, Hs = 0. The reason for selecting this variable as an instrumental variable is that inclusion in the CSI 300 constituent stocks list is independent of whether a company is greenwashing. However, being on the CSI 300 list attracts more attention from analysts, making it an ideal instrumental variable for analyst coverage.

Table 7 provides the regression outcomes using instrumental variables. The first column shows the first-stage regression results, which highlight a significant and positive relationship between Analyst Coverage and HS300 at the 1% significance level, confirming the appropriateness of the instrumental variables. The second column outlines the second-stage regression results, revealing a significant and positive association between Coverage and Greenwash at the 5% significance level.

Table 7. Endogeneity Problem Solved by an Instrumental Variable Test.

	Coverage	Greenwash
	(1)	(2)
Size	0.2640 ***	0.0682 **
	(21.14)	(2.36)
Lev	−0.5717 ***	−0.4666 ***
	(−7.89)	(−4.41)
Cash	0.4890 **	0.2743
	(2.55)	(1.12)
ROA	6.4065 ***	−0.9165 *
	(29.84)	(−1.74)
Growth	0.1329 ***	0.2352 ***
	(3.80)	(5.23)
Top1	−0.1959 ***	0.0307

	(−7.28)	(0.83)
Board	−0.1916	−0.3113
	(−0.99)	(−1.27)
Dep	−0.0633	0.0398
	(−0.70)	(0.35)
Inst	0.1177 ***	−0.0212
	(5.19)	(−0.71)
HS300	0.5870 ***	
	(19.34)	
Coverage		0.1285 **
		(1.97)
Constant	−3.9996 ***	−1.8162 **
	(−8.03)	(−2.41)
Ind	Yes	Yes
Year	Yes	Yes
N	8498	8498
adj. R^2	0.372	0.020
F	202.6350	
Kleibergen–Paap rk LM		334.529
Cragg–Donald Wald F		373.918
Kleibergen–Paap rk Wald F		412.163

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Furthermore, the validity of the instrumental variable was tested: the Kleibergen–Paap rk LM statistic passed the significance test at the 1% level, and both the Cragg–Donald Wald F value and the Kleibergen–Paap rk Wald F value exceeded 10, indicating no issues with weak instrumental variables. Therefore, we can conclude that the selected instrumental variable is appropriate, and the research conclusions are robust. This supports the assertion that firms with a higher level of analyst coverage are more likely to conduct ESG greenwashing, supporting the pressure hypothesis of analysts.

6.3. Propensity Score Matching

To mitigate potential endogeneity issues arising from sample selection bias and model setting bias, we employ the propensity score matching (PSM) method. Initially, the sample is divided into an experimental group (firms with analyst coverage) and a control group (firms without analyst coverage) based on the presence or absence of analyst coverage. Subsequently, we selected a range of covariates for matching, including firm size (Size), cash holdings (Cash), revenue growth rate (Growth), and institutional ownership (Inst). A 1:1 nearest neighbor matching method was employed for the matching process. Finally, we conducted regression tests on the matched samples to verify the robustness of our conclusions.

The first column in Table 8 presents the Average Treatment Effect (ATT) between the experimental and control groups, while the second column provides the regression results for analyst coverage and ESG greenwashing after matching. The results indicate that some control variables differ significantly between the two samples before matching (with absolute ATT values greater than 2.58). Additionally, the coefficient of Coverage is significantly positive at the 1% level in the matched sample. This suggests that the conclusions of this paper remain robust after controlling for differences in firm characteristics.

Table 8. Robustness Test using the PSM model.

	Greenwash	Greenwash
	(1)	**(2)**
Coverage_cond	0.1911 ***	
	(5.36)	
Size	−0.0190	
	(−1.50)	
Lev	−0.0403	
	(−0.55)	
Cash	0.1640	
	(1.47)	
ROA	0.2686 **	
	(2.01)	
Growth	0.0279 ***	
	(4.55)	
Top1	−0.0011	
	(−1.12)	
Board	1.9318 ***	
	(7.70)	
Dep	0.0062 **	
	(2.36)	
Inst	0.0008	
	(0.95)	
_treated		0.1785 ***
		(5.01)
Constant	−2.2839 ***	−0.6085 ***
	(−5.88)	(−18.81)
Ind	Yes	No
Year	Yes	No
N	8686	8695
adj. *R*²	0.091	0.003
F	35.5962	25.0945

t statistics in parentheses. ** $p < 0.05$, *** $p < 0.01$.

6.4. The Heckman Two-Stage Correction

Analysts might choose to focus on certain companies based on factors that are not easily observable or quantifiable, such as management quality and corporate culture, which can also influence company performance. If these variables are omitted from the model, it could result in biased estimates. To address this concern, we employ the Heckman two-stage method to mitigate potential biases and enhance the accuracy of our estimations.

In the first stage of the Heckman model, a probit model is utilized to estimate the determinants of the degree of analyst coverage, based on which the Inverse Mills Ratio (IMR) is calculated. The dependent variable in the first stage is a dummy variable representing the level of analyst coverage; it is assigned a value of 1 if the analyst coverage exceeds the median for the industry in the given sample year and 0 otherwise. The explanatory variables in the first stage are primarily derived from existing research on the determinants of analyst coverage [15,27], and include company size (Size), growth potential (Growth), enterprise cash holding level (Cash), return on assets (ROA), Tobin's Q value (TobinQ) and fixed effects for industry and year. Additional, we employ the CSI 300 constituent stocks (HS300) as the instrumental variable.

After estimating the Inverse Mills Ratio (IMR), we incorporate it into the main regression model for re-estimation. Columns (2) of Table 9 report the regression outcomes. The

results from the second stage of our analysis show that the coefficient for Analyst Coverage is significantly positive at the 1% level, indicating a robust positive relationship between analyst coverage and ESG greenwashing. Additionally, the coefficient for the Inverse Mills Ratio (IMR) is not significant, suggesting that sample selection bias does not substantially affect our results, highlighting the robustness and reliability of our findings.

Table 9. The Heckman Two-Stage Correction.

	Coverage	Greenwash
	(1)	**(2)**
Coverage		0.0590 ***
		(3.02)
Size	0.3677 ***	0.0978 ***
	(15.88)	(6.10)
Cash	0.4264	0.2911
	(1.45)	(1.24)
ROA	8.4207 ***	−0.4082
	(19.61)	(−1.38)
Growth	0.0672	0.2417 ***
	(1.15)	(5.42)
TobinQ	0.1859 ***	
	(5.42)	
INST	−0.0037	−0.0087
	(−0.12)	(−0.31)
HS300	0.5739 ***	
	(11.31)	
Lev		−0.5342 ***
		(−5.98)
Top1		0.0176
		(0.52)
Board		−0.3305
		(−1.30)
Dep		0.0334
		(0.28)
imr		−0.0224
		(−0.82)
Constant	−9.3144 ***	−2.5416 ***
	(−16.67)	(−3.95)
Ind	Yes	Yes
Year	Yes	Yes
N	8389	8389
adj. R2		0.025
F		9.1828

t statistics in parentheses. *** $p < 0.01$.

6.5. Regression with One Period Lag

Considering there is a time gap between analyst coverage and ESG greenwashing, we introduce a lag of one period to both the explanatory and control variables before conducting the regression analysis. In the results presented in Table 10, the first column shows the results of the univariate regression and the second column shows the results of the regression with the addition of the control variables, indicating that the regression coefficient of Coverage remains significantly positive even after lagging the explanatory and

control variables by one period. This further supports our conclusion that firms with high analyst coverage are more likely to conduct ESG greenwashing, despite the inherent delays in the ESG greenwashing process.

Table 10. Regression Analysis by Lag of One Period.

	Greenwash	Greenwash
	(1)	**(2)**
Coverage	0.0808 ***	0.0300 **
	(7.62)	(2.30)
Size		0.0934 ***
		(6.28)
Lev		−0.4686 ***
		(−5.54)
Cash		0.3457 *
		(1.77)
ROA		0.0157
		(0.07)
Growth		0.0199 ***
		(3.72)
Top1		0.0009
		(0.95)
Board		−0.3784
		(−1.53)
Dep		0.0003
		(0.13)
INST		−0.0215
		(−0.86)
Constant	−0.8461 ***	−2.1824 ***
	(−10.93)	(−5.45)
Ind	Yes	Yes
Year	Yes	Yes
N	9299	8770
adj. R^2	0.011	0.022
F	6.9986	8.5427

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

6.6. Altering the Independent Variable

To assess the robustness of our findings across various independent variable designs, we use the number of research reports published by analysts as the independent variable and test the hypothesis. In the regression analysis, we applied the natural logarithm to the value of the research reports, adding 1 to avoid issues with zero values. Table 11 presents the results of the regression with the replacement measure, indicating that the coefficient of analyst coverage remains significantly positive. This finding once again supports our conclusion, reinforcing the notion that higher analyst coverage drives companies towards greater ESG greenwashing.

Table 11. Alternative Indicators of Analysts.

	Greenwash	Greenwash
	(1)	**(2)**
Coverage	0.0818 ***	0.0434 ***
	(6.48)	(2.97)
Size		0.1137 ***
		(6.63)
Lev		−0.5842 ***
		(−5.67)
Cashflow		0.4195
		(1.56)
ROA		−0.6039 *
		(−1.90)
Growth		0.2884 ***
		(5.70)
Top1		0.0424
		(1.10)
Board		−0.5838 **
		(−2.12)
Dep		0.0302
		(0.23)
Inst		−0.0100
		(−0.31)
Constant	−0.8748 ***	−2.6099 ***
	(−9.53)	(−3.75)
Ind	Yes	Yes
Year	Yes	Yes
N	7071	7071
adj. R^2	0.016	0.028
F	8.1063	9.1498

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

7. Further Research

7.1. A Study of Heterogeneity in Firm Performance

According to the pressure hypothesis of analyst coverage, the impact of this coverage on managerial stress is posited to vary contingent upon the firm's performance levels. For firms exhibiting superior performance, the ability to meet or exceed analyst expectations could mitigate the perceived pressure on managers. This reduced pressure may decrease the likelihood of managers resorting to ESG greenwashing as a strategy to artificially enhance the firm's environmental, social, and governance (ESG) image. In contrast, firms with poorer performance may experience heightened sensitivity to the pressures exerted by analyst coverage. This increased pressure can act as a catalyst for managers to engage more heavily in ESG greenwashing. To investigate the differential impact of analyst coverage based on firm performance, we divided our sample into two groups based on their Return on Assets (ROA). We then conducted separate regression analyses for each group to assess how firm performance influences the propensity to engage in ESG greenwashing when under the scrutiny of analyst coverage.

Our regression analysis differentiated the effects of analyst coverage on the two groups. Accoring to the Table 12, for firms with superior performance, the coefficient of analyst coverage influencing managerial behaviors related to ESG greenwashing was not

statistically significant. This result suggests that when firms are performing well, the pressure from analysts does not significantly affect managerial decisions to engage in greenwashing practices. Conversely, for the poor performance group, the coefficient of analyst coverage is significantly positive at the 1% percent level. This finding indicates that poorer-performing firms feel heightened pressure from analysts, leading to a greater propensity for managers to engage in ESG greenwashing. This behavior likely serves as a compensatory mechanism to improve perceived corporate sustainability and business situation, despite underlying performance issues.

Table 12. Heterogeneity Analysis of Firm Performance.

	Superior Performance Greenwash	Poor Performers Greenwash
	(1)	(2)
Coverage	0.0287	0.0616 ***
	(1.46)	(3.10)
Size	0.0747 ***	0.1241 ***
	(3.53)	(6.15)
Lev	−0.1340	−0.6862 ***
	(−0.96)	(−5.73)
Cash	−0.2914	0.7298 **
	(−0.87)	(2.24)
ROA	0.6471 *	−0.8279 **
	(1.78)	(−2.01)
Growth	0.0154 ***	0.0761
	(2.93)	(1.64)
Top1	0.1016 **	−0.0928 *
	(2.11)	(−1.91)
Board	−0.5371	−0.2318
	(−1.50)	(−0.66)
Dep	0.1146	−0.0716
	(0.68)	(−0.47)
INST	−0.0558	0.0391
	(−1.46)	(0.97)
Constant	−2.1310 **	−2.7406 ***
	(−2.37)	(−3.31)
Ind	Yes	Yes
Year	Yes	Yes
N	4249	4249
adj. R^2	0.014	0.039
F	3.3426	7.8852

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

7.2. The Relationship between Star Analysts and ESG Greenwashing

Star analysts are esteemed in the financial market for their exceptional information-gathering and analytical skills. Clarke et al. (2007) [65] emphasized that such analysts, with their substantial experience and deep industry knowledge, demonstrate superior forecasting capabilities concerning corporate performance. Nevertheless, it is not entirely clear how their expertise influences management behavior, particularly in terms of pressure and greenwashing activities. On one hand, the high competence of star analysts could potentially intensify management pressure to meet or exceed forecasts, possibly leading

to increased greenwashing. On the other hand, their expert oversight might act as a deterrent, reducing the likelihood of greenwashing by enforcing higher standards of transparency and accountability in management practices.

We distinguished between star and non-star analysts according to their presence in the yearly "New Fortune Best Analysts" list in order to better analyze the influence of star analysts on ESG greenwashing. The regression analysis in Table 13 shows that the analyst coverage coefficient was not statistically significant in the star analyst group. This shows that there may not be a clear correlation between the rise in greenwashing operations and the existence of star analysts. Conversely, for non-star analysts, the coefficient is significantly positive at the 1% level, indicating a higher likelihood of greenwashing in the absence of high-level analyst oversight. These results indicate that the superior professional competence and information processing abilities of star analysts play a critical role in monitoring management behaviors, effectively reducing the extent of greenwashing.

Table 13. Heterogeneity Analysis of Start Analysts.

	Star Analysts Greenwash	**Non-Star Analysts** Greenwash
	(1)	(2)
Coverage	−0.0135	0.0497 **
	(−0.50)	(2.15)
Size	0.1317 ***	0.0514 **
	(6.80)	(2.38)
Lev	−0.5174 ***	−0.5537 ***
	(−3.90)	(−4.57)
Cash	0.4307	0.1435
	(1.28)	(0.42)
ROA	−0.4657	−0.0505
	(−1.15)	(−0.13)
Growth	0.2788 ***	0.1899 ***
	(4.58)	(2.97)
Top1	0.0971 **	−0.0994 **
	(2.07)	(−2.01)
Board	−0.7723 **	0.4250
	(−2.38)	(1.13)
Dep	−0.0839	0.2251
	(−0.55)	(1.35)
INST	−0.0664	0.0559
	(−1.62)	(1.41)
Constant	−2.1754 ***	−2.9179 ***
	(−2.69)	(−3.19)
Ind	Yes	Yes
Year	Yes	Yes
N	4865	3633
adj. R^2	0.027	0.027
F	6.5568	5.1047

t statistics in parentheses. ** $p < 0.05$, *** $p < 0.01$.

8. Conclusions, Implications, and Limitations

8.1. Theoretical Implications

First, our research contributes to the literature on the drivers of ESG greenwashing [21–23]. Building upon the framework established by Delmas and Burbano (2011) [22],

which highlighted consumer, investor, and competitor-induced incentives, we propose that analysts also play a critical role. Our research superficially examined how analyst coverage shapes managerial greenwashing and reflects broader investor expectations. When analysts exert pressure, they indirectly compel companies to engage in greenwashing as a reaction to the diminishing attractiveness of investments and falling share prices that result from missed earnings forecasts. Therefore, the pressure to participate in ESG greenwashing is not merely a direct response to analysts' expectations but also an effort to maintain investment appeal and meet investor demand.

Second, our research uncovers a significant relationship between analyst coverage and ESG greenwashing in China, adding to the extensive literature on the effects of financial analysts. While previous studies [15,25] demonstrated the value of analysts in reducing information asymmetry and acting as outside observers, our findings reveal a contrasting role in ESG reporting within the Chinese context. Specifically, we find that analysts often act as pressure-givers, contributing to ESG greenwashing to meet short-term earnings expectations. This finding diverges from Hinze (2019) [26], who observed that analyst monitoring boosts sustainable engagement in Germany. In China, the divergence in ESG practices can be partly attributed to the government-led nature of ESG development and the absence of a standardized ESG disclosure framework. This lack of uniformity makes it challenging for market forces, including analysts, to effectively oversee corporate ESG practices. However, when such monitoring proves ineffective, analyst coverage may transform into pressure, potentially intensifying instances of ESG greenwashing. This insight contributes to the analyst pressure hypothesis and the broader literature on the adverse effects of analysts [18,27].

Third, we are pioneers in examining the moderating effect of firm reputation on the relationship between analyst coverage and ESG greenwashing. Much of the firm reputation literature describes its positive effects, such as drawing top-tier talent and devoted clientele, assisting in the procurement of vital resources, strengthening stability in turbulent times, and permitting companies to demand higher prices for their goods and services [28–30]. However, in this study, our findings reveal firm reputation's limitations in disciplining companies against ESG greenwashing, because protecting reputation against more severe penalties is one of the motivations for many management to conduct ESG greenwashing with a high level of analyst coverage. We contributed to the literature on the dark side of firm reputation [31,32] by examining the positive moderating effect of firm reputation on the relationship between analyst coverage and ESG greenwashing. Actually, the statement emphasizes that corporate reputation serves as a double-edged sword. On the one hand, a strong reputation can yield significant benefits for a company. However, there are instances where management may engage in practices that, while aimed at maintaining this reputation, could ultimately harm the long-term value of the business.

8.2. Practical Implications

Our findings provide important practical insights for stakeholders such as policymakers, standard-setting organizations, regulators, investors, and corporate managers. First, the findings are favorable for policymakers to promote ESG development in China by formulating relevant policies. Our research indicates that in China, the progression of Environmental, Social, and Governance (ESG) initiatives is primarily government-driven. As such, policymakers play a critical role in reducing information uncertainty and enhancing firms' awareness of the punitive consequences associated with greenwashing. Given this context, it is advisable for policymakers to enact more supportive measures to foster sustainability. An outstanding instance of such an effective policy is the carbon peaking and carbon neutrality goals in China. Analyst power can only be maximized when sustainable and ESG development shifts from government-led to market- and investor-led.

Second, our study illuminates the critical role of standard-setting bodies in developing frameworks that serve as benchmarks. We found that in China, extensive analyst coverage may inadvertently contribute to ESG greenwashing. This underscores the necessity for standard-setting bodies to recognize the risks posed by the lack of uniform and rigorous ESG reporting standards. In the absence of such standards, companies might exploit these ambiguities to engage in greenwashing, particularly under stringent market scrutiny. This practice not only compromises investor interests but also obstructs market transparency and efficiency. To address these issues, it is imperative for standard-setting bodies to swiftly formulate ESG disclosure guidelines that align with the International Sustainability Standards Board (ISSB). These guidelines should enhance the transparency and comparability of ESG disclosures and provide a regulatory framework. Importantly, these guidelines should be tailored to fit the national context of China and reflect its unique characteristics. Additionally, the guidelines must be precise and explicit to prevent management from using various fragmented tactics for greenwashing. Companies should be encouraged to obtain independent assurance on their ESG disclosures and to develop robust assurance guidelines to further bolster the credibility of ESG information.

Third, our study offers valuable insights for regulatory bodies. It is crucial for regulators to enhance the monitoring and enforcement of ESG reporting to ensure compliance with disclosure rules. In detail, clearly communicating the specific types of greenwashing actions could reduce regulatory uncertainty and aid in more targeted enforcement. Furthermore, our findings highlight that firms with high reputations are more likely to engage in ESG greenwashing, especially under the pressure of analyst scrutiny. This suggests that such firms should be primary targets for regulators, as they may engage in greenwashing practices to maintain their reputations. Additionally, the study reveals that the pressure from analysts to meet ESG benchmarks has a more pronounced effect on firms with poorer performance. These firms are more likely to resort to ESG greenwashing as a means to enhance their perceived performance and satisfy analyst expectations. Regulators should, therefore, also focus on these lower-performing firms to prevent deceptive practices. To strengthen these regulatory efforts, Chinese authorities could consider establishing a specialized enforcement team, similar to the SEC's Task Force in the United States. This team would focus specifically on identifying and addressing ESG greenwashing, thereby enhancing market transparency and setting a foundation for analysts to effectively monitor such practices.

Fourth, research findings can provide investors with investment advice. Our findings make investors realize that a target stock being tracked by many analysts is not an entirely positive sign, as it is more likely to engage in ESG greenwashing. Therefore, it is important for sustainable investors to be more cautious about ESG reporting and learn to recognize possible signs of greenwashing. Additionally, our study indicates that star analysts, due to their superior professional competence and information processing capabilities, tend to reduce the incidence of greenwashing. This insight suggests that investors might place greater trust in reports from these top analysts while maintaining a critical perspective toward analyses from other sources. Simultaneously, long-term investors should be encouraged to build more stable relationships with companies and push them to implement real ESG improvements rather than just for short-term performance.

Fifth, the findings serve as a wake-up call for corporate management. Our findings reveal the fact that management uses ESG greenwash to cater to analysts' forecasts and project a positive, environmentally friendly image. While this may yield short-term improvements in perceived ESG performance, it ultimately undermines the long-term value and genuine sustainability of the firm, risking competitive disadvantage and loss of investor trust. Therefore, to enhance the ethical climate within their organizations, managers could integrate targeted ethics training designed to educate employees about the dangers of greenwashing. Moreover, the creation of a sustainable information management system could integrate ESG-related data effectively, making it more challenging for such infor-

mation to be manipulated. This system would support more transparent and reliable reporting of ESG activities, aligning them closely with the actual environmental and social impacts of the company.

Sixth, our study highlights the opportunity for the China Analyst Industry Association to enhance the capabilities of Chinese analysts in ESG development. As regulatory oversight of companies' environmental performance and communication remains limited, industry associations are increasingly adopting the roles of monitors and information providers. Therefore, it is crucial for analyst associations to develop and implement education and training programs that focus on sustainability. By doing so, they can enhance analysts' understanding of ESG-related issues, thereby promoting more accurate and responsible reporting in the field of environmental, social, and governance factors. Additionally, to encourage rigorous ESG scrutiny, analyst associations could establish incentives such as awards and certification programs. These programs would recognize and motivate analysts who excel in sustainable practices and are vigilant in monitoring for greenwashing.

8.3. Research Limitations

Our study does face certain limitations. Primarily, the accuracy of our ESG greenwashing measure heavily depends on ESG scores. Although we rely on scores from authoritative rating agencies to quantify ESG greenwashing, discrepancies in ESG ratings could affect the measure's precision.To enhance the robustness of future research, qualitative methodologies such as empirical field research and interviews could be employed. During the process, focusing on determining whether a company engages in false disclosures, unfulfilled promises, and violations of ESG fund regulations is an effective way to identify genuine ESG greenwashing. By scrutinizing these specific aspects, scholars can effectively discern between companies that truly adhere to sustainable practices and those that merely present an image of sustainability to meet market expectations or regulatory requirements. Overall, this shift towards qualitative analysis could provide deeper insights into ESG practices and their reporting.

Second, the applicability of our findings may be limited geographically. The research is specifically tailored to the institutional context of China, where ESG development is predominantly driven by government initiatives. These governmental efforts shape the ways in which firms implement ESG practices, and in turn, this affects the capacity of analysts to monitor ESG greenwashing effectively. This dynamic in China may differ significantly from regions where ESG development is primarily market-led. Future studies could benefit from adopting an international perspective to examine the interplay between analysts and ESG greenwashing across different countries. Such research would allow for a comparative analysis that could illuminate the varying roles analysts play in monitoring ESG practices globally. Additionally, it would provide deeper insight into the factors that contribute to ESG greenwashing and the mechanisms through which analysts can either mitigate or exacerbate these practices in different regulatory and market environments.

Author Contributions: Conceptualization, Y.G.; methodology, Y.G.; validation, Y.C.; formal analysis, Y.G.; investigation, Y.G.; resources, Y.C.; writing—original draft, Y.G.; writing—review & editing, Y.G. and Y.C.; supervision, Y.C.; project administration, Y.C.; funding acquisition, Y.C. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors on request.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Walker, K.; Wan, F. The harm of symbolic actions and green-washing: Corporate actions and communications on environmental performance and their financial implications. *J. Bus. Ethics* **2012**, *109*, 227–242. https://doi.org/10.1007/s10551-011-1122-4.
2. Guo, R.; Tao, L.; Li, C.B.; Wang, T. A path analysis of greenwashing in a trust crisis among Chinese energy companies: The role of brand legitimacy and brand loyalty. *J. Bus. Ethics* **2017**, *140*, 523–536. https://doi.org/10.1007/s10551-015-2672-7.
3. Hsu, T. Skepticism Grows over Products Touted as Eco-Friendly. Los Angeles Times. Available online: http://articles.latimes.com/2011/may/21/business/la-figreenwash-20110521 (accessed on 5 May 2024).
4. TerraChoice. The Sins of Greenwashing, Home and Family Edition. Available online: https://sinsofgreenwashing.com/ (accessed on 21 April 2024).
5. Lyon, T.P.; Montgomery, A.W. The means and end of greenwash. *Organ. Environ.* **2015**, *28*, 223–249. https://doi.org/10.1177/1086026615575332.
6. Testa, F.; Boiral, O.; Iraldo, F. Internalization of environmental practices and institutional complexity: Can stakeholders pressures encourage greenwashing? *J. Bus. Ethics* **2018**, *147*, 287–307. https://doi.org/10.1007/s10551-015-2960-2.
7. Aji, H.M.; Sutikno, B. The extended consequence of greenwashing: Perceived consumer skepticism. *Int. J. Bus. Inf.* **2015**, *10*, 433.
8. Chen, Y.-S.; Chang, C.-H. Greenwash and green trust: The mediation effects of green consumer confusion and green perceived risk. *J. Bus. Ethics* **2013**, *114*, 489–500. https://doi.org/10.1007/s10551-012-1360-0.
9. Lane, E.L. Consumer protection in the eco-mark era: A preliminary survey and assessment of anti-greenwashing activity and eco-mark enforcement. *J. Marshall Rev. Intell. Prop. L.* **2009**, *9*, 742–773.
10. Wiersema, M.F.; Zhang, Y. CEO Dismissal: The role of investment analysts. *Strateg. Manag. J.* **2011**, *32*, 1161–1182. https://doi.org/10.1002/smj.932.
11. Luo, X.; Wang, H.; Raithel, S.; Zheng, Q. Corporate Social Performance, Analyst Stock Recommendations, and Firm Future Returns. *Strateg. Manag. J.* **2015**, *36*, 123–136. https://doi.org/10.1002/smj.2219.
12. Jensen, M.C.; Meckling, W.H. Theory of the firm: Managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* **1976**, *3*, 305–360. https://doi.org/10.1016/0304-405x(76)90026-x.
13. Dyck, A.; Zingales, L. Private benefits of control: An international comparison. *J. Financ.* **2004**, *59*, 537–600. https://doi.org/10.1111/j.1540-6261.2004.00642.x.
14. Healy, P.M.; Palepu, K.G. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *J. Account. Econ.* **2001**, *31*, 405–440. https://doi.org/10.1016/s0165-4101(01)00018-0.
15. Yu, F. Analyst coverage and earnings management. *J. Financ. Econ.* **2008**, *88*, 245–271. https://doi.org/10.1016/j.jfineco.2007.05.008.
16. Brennan, M.J.; Jegadeesh, N.; Swaminathan, B. Investment analysis and the adjustment of stock prices to common information. *Rev. Financ. Stud.* **1993**, *6*, 799–824. https://doi.org/10.1093/rfs/6.4.799.
17. Hong, H.; Lim, T.; Stein, J.C. Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies. *J. Financ.* **2000**, *55*, 265–295. https://doi.org/10.1111/0022-1082.00206.
18. Graham, J.R.; Harvey, C.R.; Rajgopal, S. The economic implications of corporate financial reporting. *J. Account. Econ.* **2005**, *40*, 3–73. https://doi.org/10.1016/j.jacceco.2005.01.002.
19. Cotter, J.; Tuna, I.; Wysocki, P.D. Expectations management and beatable targets: How do analysts react to explicit earnings guidance? *Contemp. Acc. Res.* **2006**, *23*, 593–624. https://doi.org/10.1506/fj4d-04un-68t7-r8ca.
20. Levitt Jr, A. The numbers game. *CPA J.* **1998**, *68*, 14–19.
21. Alves, I. Green spin everywhere: How greenwashing reveals the limits of the CSR paradigm. *J. Glob. Chang. Gov.* 2009, I/1,1–12.
22. Delmas, M.A.; Burbano, V.C. The drivers of greenwashing. *Calif. Manag. Rev.* **2011**, *54*, 64–87. https://doi.org/10.1525/cmr.2011.54.1.64.
23. Kim, E.-H.; Lyon, T.P. Greenwash vs. Brownwash: Exaggeration and undue modesty in corporate sustainability disclosure. *Organ. Sci.* **2015**, *26*, 705–723. https://doi.org/10.1287/orsc.2014.0949.
24. Brennan, M.J.; Subrahmanyam, A. Investment analysis and price formation in securities markets. *J. Financ. Econ.* **1995**, *38*, 361–381. https://doi.org/10.1016/0304-405x(94)00811-e.
25. Das, S.; Guo, R.-J.; Zhang, H. Analysts' selective coverage and subsequent performance of newly public firms. *J. Financ.* **2006**, *61*, 1159–1185. https://doi.org/10.1111/j.1540-6261.2006.00869.x.
26. Hinze, A.-K.; Sump, F. Corporate social responsibility and financial analysts: A review of the literature. *Sustain. Acc. Manag. Pol. J.* **2019**, *10*, 183–207. https://doi.org/10.1108/sampj-05-2017-0043.
27. He, J.; Tian, X. The dark side of analyst coverage: The case of innovation. *J. Financ. Econ.* **2013**, *109*, 856–878. https://doi.org/10.1016/j.jfineco.2013.04.001.
28. Boyd, B.K.; Bergh, D.D.; Ketchen, D.J., Jr. Reconsidering the reputation—Performance relationship: A resource-based view. *J. Manag.* **2010**, *36*, 588–609. https://doi.org/10.1177/0149206308328507.
29. Bundy, J.; Pfarrer, M.D. A burden of responsibility: The role of social approval at the onset of a crisis. *Acad. Manag. Rev.* **2015**, *40*, 345–369. https://doi.org/10.5465/amr.2013.0027.

30. Roberts, P.W.; Dowling, G.R. Corporate reputation and sustained superior financial performance: Reputation and Persistent Profitability. *Strateg. Manag. J.* **2002**, *23*, 1077–1093. https://doi.org/10.1002/s mj.274.

31. Parker, O.; Krause, R.; Devers, C.E. How firm reputation shapes managerial discretion. *Acad. Manag. Rev.* **2019**, *44*, 254–278. https://doi.org/10.5465/amr.2016.0542.

32. Zavyalova, A.; Pfarrer, M.D.; Reger, R.K.; Hubbard, T.D. Reputation as a benefitanda burden? How stakeholders' organizational identification affects the role of reputation following a negative event. *Acad. Manag. J.* **2016**, *59*, 253–276. https://doi.org/10.5465/amj.2013.0611.

33. Bartov, E.; Givoly, D.; Hayn, C. The rewards to meeting or beating earnings expectations. *J. Account. Econ.* **2002**, *33*, 173–204. https://doi.org/10.1016/s0165-4101(02)00045-9.

34. Matsunaga, S.R.; Park, C.W. The effect of missing a quarterly earnings benchmark on the CEO's annual bonus. *Account. Rev.* **2001**, *76*, 313–332. https://doi.org/10.2308/accr.2001.76.3.313.

35. Hazarika, S.; Karpoff, J.M.; Nahata, R. Internal corporate governance, CEO turnover, and earnings management. *J. Financ. Econ.* **2012**, *104*, 44–69. https://doi.org/10.1016/j.jfineco.2011.10.011.

36. Dechow, P.M.; Hutton, A.P.; Sloan, R.G. The relation between analysts' forecasts of long-term earnings growth and stock price performance following equity offerings. *Contemp. Acc. Res.* **2000**, *17*, 1–32. https://doi.org/10.1111/j.1911-3846.2000.tb00908.x.

37. Lin, H.-W.; McNichols, M.F. Underwriting relationships, analysts' earnings forecasts and investment recommendations. *J. Account. Econ.* **1998**, *25*, 101–127. https://doi.org/10.1016/s0165-4101(98)00016-0.

38. Michaely, R.; Womack, K.L. Conflict of interest and the credibility of underwriter analyst recommendations. *Rev. Financ. Stud.* **1999**, *12*, 653–686. https://doi.org/10.1093/rfs/12.4.653.

39. Yu, E.P.-Y.; Van Luu, B.; Chen, C.H. Greenwashing in environmental, social and governance disclosures. *Res. Int. Bus. Fin.* **2020**, *52*, 101192. https://doi.org/10.1016/j.ribaf.2020.101192.

40. Michelon, G.; Trojanowski, G.; Sealy, R. Narrative reporting: State of the art and future challenges. *Acc. Eur.* **2022**, *19*, 7–47. https://doi.org/10.1080/17449480.2021.1900582.

41. La Rosa, F.; Bernini, F. ESG Controversies and the Cost of Equity Capital of European Listed Companies: The Moderating Effects of ESG Performance and Market Securities Regulation. *Int. J. Account. Inf. Manag.* **2022**, *30*, 641–663. https://doi.org/10.1108/ijaim-03-2022-0047.

42. Zhang, D. Are firms motivated to greenwash by financial constraints? Evidence from global firms' data. *J. Int. Financ. Manag. Account.* **2022**, *33*, 459–479. https://doi.org/10.1111/jifm.12153.

43. Walsh, G.; Mitchell, V.-W.; Jackson, P.R.; Beatty, S.E. Examining the Antecedents and Consequences of Corporate Reputation: A Customer Perspective. *Br. J. Manag.* **2009**, *20*, 187–203. https://doi.org/10.1111/j.1467-8551.2007.00557.x.

44. Pfarrer, M.D.; Pollock, T.G.; Rindova, V.P. A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors' reactions. *Acad. Manag. J.* **2010**, *53*, 1131–1152. https://doi.org/10.5465/amj.2010.54533222.

45. Highhouse, S.; Brooks, M.E.; Gregarus, G. An Organizational Impression Management Perspective on the Formation of Corporate Reputations. *J. Manag.* **2009**, *35*, 1481–1493. https://doi.org/10.1177/0149206309348788.

46. Lange, D.; Lee, P.M.; Dai, Y. Organizational reputation: A review. *J. Manag.* **2011**, *37*, 153–184. https://doi.org/10.1177/0149206310390963.

47. Wade, J.B.; Porac, J.F.; Pollock, T.G.; Graffin, S.D. The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. *Acad. Manag. J.* **2006**, *49*, 643–660. https://doi.org/10.5465/amj.2006.22083021.

48. Rhee, M.; Haunschild, P.R. The liability of good reputation: A study of product recalls in the U.S. automobile industry. *Organ. Sci.* **2006**, *17*, 101–117. https://doi.org/10.1287/orsc.1050.0175.

49. Rhee, S.H.; Pothoulakis, C.; Mayer, E.A. Principles and clinical implications of the brain-gut-enteric microbiota axis. *Nat. Rev. Gastroenterol. Hepatol.* **2009**, *6*, 306–314. https://doi.org/10.1038/nrgas tro.2009.35.

50. Deegan, C.; Rankin, M. The materiality of environmental information to users of annual reports. *Account. Audit. Account.* **1997**, *10*, 562–583. https://doi.org/10.1108/09513579710367485.

51. Pistor, K. Governing stock markets in transition economies: Lessons from China. *Am. Law Econ. Rev.* **2005**, *7*, 184–210. https://doi.org/10.1093/aler/ahi008.

52. Brennan, N.M.; Merkl-Davies, D.M. Rhetoric and argument in social and environmental reporting: The Dirty Laundry case. *Account. Audit. Account.* **2014**, *27*, 602–633. https://doi.org/10.1108/aaaj-04-2013-1333.

53. Marquis, C.; Toffel, M.W.; Zhou, Y. Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organ. Sci.* **2016**, *27*, 483–504. https://doi.org/10.1287/orsc.2015.1039.

54. Yu, E.P.-Y.; Guo, C.Q.; Van Luu, B. Environmental, social and governance transparency and firm value. *Bus. Strat. Environ.* **2018**, *27*, 987–1004. https://doi.org/10.1002/bse.2047.

55. Benner, M.J. Securities analysts and incumbent response to radical technological change: Evidence from digital photography and internet telephony. *Organ. Sci.* **2010**, *21*, 42–62. https://doi.org/10.1287/orsc.1080.0395.

56. Benner, M.J.; Ranganathan, R. Offsetting illegitimacy? How pressures from securities analysts influence incumbents in the face of new technologies. *Acad. Manag. J.* **2012**, *55*, 213–233. https://doi.org/10.5465/amj.2009.0530.

57. Hemingway, C.A.; Maclagan, P.W. Managers' personal values as drivers of corporate social responsibility. *J. Bus. Ethics* **2004**, *50*, 33–44. https://doi.org/10.1023/b:busi.0000020964.80208.c9.

58. Petrovits, C.M. Corporate-sponsored foundations and earnings management. *J. Account. Econ.* **2006**, *41*, 335–362. https://doi.org/10.1016/j.jacceco.2005.12.001.

59. Prior, D.; Surroca, J.; Tribó, J.A. Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corp. Gov. Int. Rev.* **2008**, *16*, 160–177. https://doi.org/10.1111/j.1467-8683.2008.00678.x.

60. Rozin, P.; Royzman, E.B. Negativity bias, negativity dominance, and contagion. *Pers. Soc. Psychol. Rev.* **2001**, *5*, 296–320. https://doi.org/10.1207/s15327957pspr0504_2.

61. Schnietz, K.E.; Epstein, M.J. Exploring the financial value of a reputation for corporate social responsibility during a crisis. *Corp. Reput. Rev.* **2005**, *7*, 327–345. https://doi.org/10.1057/palgrave.crr.1540230.

62. Hosmer, L.T.; Kiewitz, C. Organizational justice: A behavioral science concept with critical implications for business ethics and stakeholder theory. *Bus. Ethics Q.* **2005**, *15*, 67–91. https://doi.org/10.5840/beq20051513.

63. Zhang, D. Green financial system regulation shock and greenwashing behaviors: Evidence from Chinese firms. *Energy Econ.* **2022**, *111*, 106064. https://doi.org/10.1016/j.eneco.2022.106064.

64. Philippe, D.; Durand, R. The impact of norm-conforming behaviors on firm reputation. *Strateg. Manag. J.* **2011**, *32*, 969–993. https://doi.org/10.1002/smj.919.

65. Clarke, J.; Khorana, A.; Patel, A.; Rau, P. The impact of all-star analyst job changes on their coverage choices and investment banking deal flow. *J. Financ. Econ.* **2007**, *84*, 713–737. https://doi.org/10.1016/j.jfineco.2005.12.010.