

Green Inquiry Letter and Corporate Green Innovation

Xinlei Zhu

School of Dongbei University of Finance and Economics, Liaoning 116000, China
zxinlei0820@163.com

Abstract: As a form of non-punitive regulatory policy, the inquiry letter has garnered significant attention from academic circles. However, its impact on corporate green innovation has not been fully explored. This study aims to address this gap by examining the influence of green inquiry letters (hereinafter referred to as "green inquiry letters") on corporate green innovation activities based on data from listed companies spanning 2015 to 2022. The findings indicate that green inquiry letters issued by the exchange can effectively promote the green innovation of enterprises, and this conclusion holds true even after conducting a series of robustness tests. Furthermore, in regions with higher levels of pollution and increased public concern, the impact of green inquiry letters is particularly pronounced. Mechanism analysis reveals that green inquiry letters lead to a significant increase in both pollution charges and negative news coverage for enterprises, thereby facilitating their transition towards environmentally-friendly practices. Overall, it is evident that green inquiry letters stimulate green innovation by heightening regulatory pressure and non-compliance costs faced by companies. This underscores the crucial role played by these letters in enterprise supervision and provides valuable insights for enhancing securities market regulation mechanisms.

Keywords: Green Inquiry Letter, Non-compliance supervision, Corporate Green Innovation.

1. Introduction

In recent years, China's economic development has shifted from rapid growth to a focus on high-quality development. General Secretary Xi Jinping underscored the steadfast implementation of new development concepts, centered on innovation, coordination, green development, openness, and sharing, during the Fifth Plenary Session of the 19th CPC Central Committee. Green development stands as an intrinsic imperative for achieving sustainable development. The concept that "lucid waters and lush mountains are invaluable assets" underscores the need to strike a balance between economic growth and environmental conservation (Wang Xin and Wang Ying, 2021). Despite China's multifaceted measures to safeguard the ecological environment, structural and trend pressures persist, posing significant challenges to sustainable economic and social development. Issues such as pollution emissions and ecological degradation remain severe, hindering progress toward sustainability. Innovation emerges as the central driving force and essential pillar for green development, particularly within the framework of global green competition, which emphasizes green technological innovation (Liu Jinke and Xiao Yiyang, 2022). Enterprises, as generators of social wealth, play a pivotal role in harmonizing economic development with ecological preservation (Li Weian et al., 2019). To further bolster the market-oriented green innovation system, the National Development and Reform Commission, the Ministry of Science and Technology, and other pertinent departments proposed initiatives in the "Implementation Plan for Further Improving the Market-Oriented Green Technology Innovation System." This plan aims to bolster the involvement of enterprises in green technology innovation, with a focus on nurturing leading green technology enterprises and green low-carbon technology firms. Green innovation increasingly emerges as a primary driver for enhancing corporate competitiveness, expediting energy conservation, emission reduction, and advancing the green transformation of enterprises. With growing national and societal emphasis on green innovation,

it has garnered considerable interest within academic circles.

Corporate green innovation plays a pivotal role in fostering the healthy development of the market. Numerous scholars have extensively investigated this topic, exploring the influence of various factors, such as environmental policies and green financial policies, on corporate green innovation endeavors. Li Qingyuan and Xiao Zehua (2020) revealed that environmental subsidies might trigger a "crowding-out" effect, diminishing companies' intrinsic motivation to pursue green innovation. This phenomenon often manifests as companies prioritizing short-term opportunistic behaviors over long-term, sustainable green innovation initiatives. Conversely, Liu Jinke and Xiao Yiyang (2022) identified that the implementation of environmental protection tax reforms positively impacted corporate green innovation activities. These reforms primarily incentivize companies to enhance the efficient utilization of fossil energy, leading to significant reductions in end-of-pipe pollutant emissions. However, the effectiveness of these reforms in reducing emissions within the new energy sector has yet to meet anticipated levels. Moreover, Wang Xin and Wang Ying (2021) observed that the enactment of "Green Credit Guidelines" resulted in heightened green innovation performance within industries subject to green credit restrictions. Despite this, the quality of green innovation did not exhibit significant improvement. Furthermore, Hu Jie et al. (2023) demonstrated that ESG ratings effectively facilitate corporate green transformation by mitigating financing constraints, addressing agency problems, and stimulating R&D investment. Additionally, government R&D subsidies positively impact companies' strategic green innovation performance, exhibiting a U-shaped relationship between government R&D subsidies and substantive green innovation performance. However, existing research has largely overlooked the role of non-mandatory regulatory measures, such as green inquiry letters. Building upon prior literature, this study aims to investigate the impact of green inquiry letters on corporate green innovation.

Green inquiry letters play a significant role in promoting the green innovation of enterprises. Unlike post-event

punitive supervision, inquiry supervision possesses strong timeliness and frequent oversight, enabling the swift detection of company concerns (Zhao Zhenyang et al., 2022). Such supervision amplifies both regulatory and market pressures faced by the recipient company (Zhu Jinyu et al., 2023), while regulatory penalties concurrently elevate the level of corporate social responsibility (Gu Xiaolong et al., 2021). Additionally, inquiry supervision disseminates information about the recipient company to the market, signaling negative aspects such as poor information disclosure quality and subpar operational management. Consequently, this adversely impacts the company's reputation, diminishing market trust and prompting external stakeholders to question the company's managerial capabilities and integrity (Deng Yilu et al., 2020). For production-oriented enterprises, violations of environmental regulations during the production process necessitate payment of violation fees, heightening both violation costs and regulatory pressure. Consequently, enterprises are spurred to seek methods to mitigate environmental pollution and enhance environmental and social performance. Currently, green innovation has emerged as a crucial driver for enterprises seeking to enhance their competitive edge. Positioned at the intersection of "innovation drive" and "green development," green innovation directly influences pollutant emissions, facilitating not only accelerated energy conservation and emission reduction but also improved environmental and social performance, leading to significant enhancements in financial performance (Wang Xin et al., 2021). Given escalating environmental pollution costs and increasingly stringent regulatory pressures, companies can effectively mitigate environmental risks and reduce pollution costs only by bolstering green technology innovation. Consequently, actively fulfilling corporate social responsibilities and promoting green innovation have become effective strategies for companies to recuperate losses incurred from inquiries. Moreover, green inquiry letter supervision, functioning as an external constraint mechanism, not only imposes necessary regulatory pressure on enterprises but also effectively motivates them to surmount potential organizational inertia. This external pressure fosters a positive and complementary relationship with the company's internal governance mechanism, collectively propelling companies to make strides in green innovation and achieve sustainable development.

However, green inquiry letters may also exert an inhibitory effect on corporate green innovation. The pressure imposed by this regulatory tool often leads companies to overly prioritize short-term environmental performance. Managers may succumb to short-sightedness, concentrating solely on meeting regulatory requirements and addressing short-term regulatory pressures, thereby diminishing their focus on innovation and erecting a barrier to green innovation. The process of green innovation typically entails a prolonged investment cycle and uncertain outcomes, often failing to yield immediate benefits. Research conducted by He and Tain (2013) reveals that because corporate innovation endeavors frequently do not yield immediate revenue, management confronts the dilemma of reducing investment in innovation activities, thereby impeding the innovation process. Similarly, Yang Daoguang et al. (2017) contend that external pressures, such as short-term financial performance demands and media scrutiny, can undermine enterprises' innovation capabilities. In such circumstances, managers frequently prioritize short-

term gains over long-term company growth and shareholder value. Consequently, they may opt to abandon innovative projects with extended payback periods in favor of projects with immediate returns, favoring activities with low investment costs and minimal risks (Colla and Vitale, 2022). For instance, managers might concentrate more on achieving short-term emission reduction targets while neglecting more profound and impactful innovative green initiatives. Thus, in pursuit of maximizing short-term profits, corporate management channels more energy into immediate profit-making activities, thereby stifling the company's innovation capacity.

Given the lack of a clear theoretical direction regarding the impact of green inquiry letters on corporate green innovation, empirical analysis is essential to verify their influence. This article employs data from listed companies spanning from 2015 to 2022 to thoroughly investigate the impact of green inquiry letters on corporate green innovation. Specifically, the study examines whether the inquiry letters' content addresses green topics, such as energy conservation and emission reduction, and tracks the inquiry status when such topics are involved. The research findings reveal that green inquiry letters issued by exchanges play a constructive role in promoting corporate green innovation. This conclusion remains robust across different samples, variable measurement methods, and robustness tests, including the instrumental variable method and propensity score matching method. Furthermore, in regions characterized by higher pollution levels and greater public concern, the promotional effect of green inquiry letters is more pronounced. Mechanism analysis indicates that green inquiry letters significantly elevate companies' pollution fee expenditures and concurrently increase the frequency of negative news about the companies, thus stimulating their green innovation activities. In summary, green inquiry letters have incentivized companies to actively pursue green innovation by intensifying regulatory pressure and elevating violation costs.

Compared with previous literature, this article offers potential contributions in several key areas. Firstly, while existing studies have examined the influence of environmental policies and green finance policies on enterprises' green innovation performance, such as pollutant discharge charges and environmental subsidies stimulating green innovation (Li Qingyuan and Xiao Zehua, 2020), as well as the impacts of environmental protection tax reform (Liu Jinke and Xiao Yiyang, 2022), green credit policies (Wang Xin and Wang Ying, 2021), and ESG ratings (Hu Jie et al., 2023), this article extends the understanding by demonstrating how green inquiry letters affect corporate green innovation through the supervision of corporate violations. This expansion broadens the research scope on factors influencing corporate green innovation. Secondly, from the perspective of green inquiry letters, this article provides empirical evidence supporting the effectiveness of inquiry letters as a regulatory tool in China's capital market. It offers insights into how non-compliance supervision can promote corporate green innovation, offering valuable policy references. Thirdly, despite China's financial market's rapid development in the past decade, ensuring its high-quality development necessitates strengthening the supervision of corporate violations and encouraging green innovation activities. Therefore, this study delves into the corporate governance effects, exploring the "forcing" effect of illegal supervision brought about by green inquiry letters on

corporate green innovation behaviors. This exploration may prompt regulatory authorities to reconsider how inquiry letters influence corporate governance and how to better target violations, thereby providing guidance for regulatory decision-making to promote the sustainable development of enterprises.

The main content of this article is organized as follows: First, a review of the relevant literature is presented. Next, the research hypothesis and empirical design section introduces the research design and provides descriptive statistics of the sample and related variables. The empirical results and analysis section reports the basic empirical results and conducts robustness and endogeneity tests, followed by a qualitative analysis of differences. The article then examines the impact mechanism. Finally, the main conclusions are summarized, and relevant policy recommendations are proposed.

2. Literature Review

2.1. Research Related to Inquiry Letters

Under the current regulatory structure, China's regulatory agencies employ diversified strategies, including "administrative penalty supervision," exemplified by penalty announcements, and "non-administrative penalty supervision," implemented through the issuance of inquiry letters (Chen Yunsen et al., 2018). Unlike the traditional administrative supervision carried out by the China Securities Regulatory Commission, inquiry letters are issued by the stock exchange and are characterized by low cost, strong interactivity, and wide coverage (He Huihua et al., 2021). Additionally, the positive spillover effect of inquiry letters further encourages continuous and in-depth supervision by the media and the public, thereby subjecting the questioned company to higher potential violation costs and a stricter regulatory environment. This positive regulatory effect is significant not only in correcting violations but also in encouraging market participants to consciously abide by the rules and maintain market order (Chen Yunsen et al., 2019). Literature has confirmed that exchange inquiry supervision has governance effects within the Chinese context. Depending on the regulatory entities involved, the regulatory role of inquiry letters on companies can be viewed from both a corporate governance perspective and a market participation performance perspective.

Corporate governance encompasses the impact of inquiry letters on corporate information disclosure, earnings management, performance forecasts, executive changes, and other areas. Research by Bozanic et al. (2017) demonstrates the indispensable role of SEC opinion letters in enhancing the quality of corporate information disclosure and strengthening information transparency. These letters not only promote the clear and accurate presentation of corporate information but also significantly improve market transparency, thus facilitating better information exchange between enterprises and investors. Similarly, Johnston and Petacchi (2017) found that inquiry letters improve the quality of corporate information disclosure. In addition to their role in improving information quality, inquiry letters serve as effective tools for identifying earnings management behaviors. Liu Bai et al. (2019) observed that inquiry letters are particularly effective in targeting non-state-owned enterprises, companies listed on the Shenzhen Stock Exchange, and companies that have received extensive media attention. Li Xiaoxi et al. (2019)

found that the implementation of the inquiry letter system effectively alleviated the information asymmetry in corporate M&A transactions, thereby enhancing M&A performance. Furthermore, Deng Yilu et al. (2020) discovered that financial report inquiry letters significantly increase the likelihood of corporate executive changes. These studies collectively indicate that the supervision and regulation facilitated by inquiry letters can enhance the quality of corporate information disclosure, curb earnings management, improve merger and acquisition performance, and encourage executives to perform their duties more diligently. Consequently, inquiry letters contribute to the overall improvement of corporate governance and bolster investor confidence.

Market performance primarily encompasses the impact of inquiry letters on corporate stock price fluctuations, debt costs, audit fees, and analyst forecasts. Zhang Junsheng et al. (2018) found that inquiry letters effectively curb management's tendency to deliberately conceal adverse information, thereby mitigating the risk of stock price collapse to some extent. Inquiry letters signal to the market that a company's information disclosure does not meet regulatory standards or that the quality of information disclosure is relatively low, which negatively impacts the company's reputation (Mei Beilei et al., 2021). Gietzmann and Pettinicchio (2014) found that after a company receives an inquiry letter, auditors perceive higher risks and consequently devote more time and resources to auditing the company. This increased scrutiny leads auditors to adopt more stringent procedures, resulting in higher audit fees. Hu Ning et al. (2020) found that creditors become skeptical of management's motivations or abilities to disclose information accurately, increasing their risk assessment of the company and subsequently raising debt costs. Additionally, Kubick et al. (2016) observed that companies engaging in significant tax avoidance behaviors are more likely to receive inquiry letters. Upon receiving these letters, such companies often exhibit a marked decrease in tax avoidance levels. Furthermore, Wang (2016) found that opinion letters enhance the accuracy of analysts' forecasts. Overall, the issuance of inquiry letters has a multifaceted impact on market performance, influencing various financial aspects of the companies involved.

2.2. Research Related to Green Innovation

The concept of a green innovation strategy entails enterprises actively mitigating adverse environmental impacts stemming from their business activities while integrating environmental responsibility into their strategic planning (Eiadat et al., 2008). In comparison to conventional innovation endeavors, green technology innovation places greater emphasis on exploratory innovation of novel knowledge and technological pathways. This focus aims to surmount the constraints posed by the excessive consumption of non-renewable resources and achieve the efficient utilization of resources (Yang Dong et al., 2015). However, striking the optimal balance between green innovation and economic benefits often proves challenging (Zhang Gang et al., 2013). Moreover, the dual externalities resulting from environmental management, coupled with the high investment costs and risks involved, dampen companies' motivation to engage in green innovation (Jaffe et al., 2005). Consequently, enterprises pursuing green innovation strategies encounter both opportunities and challenges. Current research on green transformation predominantly

revolves around two primary facets. Firstly, the impact of internal corporate management on its own green transformation, and secondly, the role of environmental regulatory policies in shaping corporate green innovation behavior.

The internal management of enterprises encompasses various facets such as green knowledge sharing, senior executives' environmental awareness, corporate resources, and innovation capabilities. Lin et al. (2017) delved into internal knowledge resources and capabilities, revealing that green knowledge sharing enhances green dynamic capabilities, thereby fostering the implementation of green service innovation and the attainment of green competitive advantages. Research by Sharma (2000) indicates that managers' differing interpretations of environmental issues as either opportunities or threats significantly influence companies' strategic decisions regarding green innovation. Moreover, heightened executive awareness of environmental issues correlates with a greater propensity to recognize the potential benefits and market opportunities associated with green innovation (Peng Xuerong et al., 2015). Resource-based theory posits that heterogeneous resources and organizational capabilities within an enterprise serve as the foundation for enhancing enterprise performance and gaining a competitive edge (Barney et al., 2001). Additionally, Cao Hongjun and Chen Zewen (2017) observed that the external spillover and extended investment return period inherent in green innovation underscore the high risk within this domain. Enterprises endowed with stronger innovation capabilities exhibit greater resilience to this risk. Furthermore, corporate innovation capabilities can mitigate knowledge barriers in green innovation, thereby fostering corporate investment and fostering stable development in this field.

Environmental regulatory policies encompass various measures such as green subsidies, green credit policies, and environmental protection taxes. Wang Xin and Wang Ying (2021) discovered that green credit plays a significant role in promoting corporate green innovation, as it incentivizes industries to engage more actively in green innovation endeavors, thereby contributing to the establishment and enhancement of a market-oriented green technology innovation system. Likewise, Liu Jinke and Xiao Yiyang (2022) revealed that the environmental protection tax reform effectively stimulates corporate green innovation activities, primarily by encouraging companies to enhance the efficiency of fossil energy utilization and reduce end-of-pipe pollutant emissions. Furthermore, research suggests that research and development (R&D) subsidies exert an "incentive effect" on corporate green innovation performance. This is evidenced by the government's provision of financial support for companies to undertake R&D activities related to green innovation, thereby encouraging increased investment in green innovation and ultimately influencing corporate green innovation positively (Yao Hongxin and Wu Yiting, 2018; Bai et al., 2019; Xiang et al., 2022).

In summary, the existing literature on the determinants of green innovation has yielded significant findings. However, with the ongoing enhancement of regulatory standards in the capital market, companies are facing notable shifts in the regulatory landscape. The introduction of supervisory mechanisms such as exchange inquiry letters has elicited substantial reactions within the market. These mechanisms not only oversee companies' information disclosure but also scrutinize their regulatory compliance, increasingly

becoming a pivotal consideration for company management in their decision-making processes. While previous studies have explored the influence of capital market regulations on corporate green innovation, they have predominantly focused on government environmental regulations, internal corporate management, and other regulatory measures. Moreover, inquiry letters encompass various types, including annual report inquiry letters and concern letters. Nevertheless, there is a dearth of literature examining whether non-punitive regulatory measures by exchanges impact corporate green innovation specifically concerning environmental issues. Therefore, research in this area can offer a fresh perspective on the supervision of green inquiry letters and its influence on corporate green innovation. By filling this gap, it can enrich existing literature and contribute incrementally to the field.

3. Research Hypotheses and Empirical Design

3.1. Research Hypothesis

Since the onset of reform and opening up, China has emerged as one of the world's fastest-growing major economies, achieving remarkable economic advancements. However, this progress has been accompanied by significant resource and environmental challenges. Environmental pollution and ecological degradation have emerged as primary impediments to sustainable economic development. In the absence of effective regulation, companies often lack the incentive to address ecological concerns due to the inherent imbalance between the costs and benefits associated with environmental stewardship. Consequently, external oversight has become a crucial mechanism for encouraging enterprises to undertake environmental conservation measures. In recent years, non-punitive regulatory approaches, such as the frequent issuance of inquiry letters to listed companies by securities regulatory agencies, have progressively evolved into key regulatory instruments within the capital market. Research indicates that following the receipt of inquiry letters, companies tend to decrease their degree of earnings management (Chen Yunsen et al., 2019), reduce tax avoidance behaviors (Kubick et al., 2016), and enhance the enthusiasm and accuracy of performance forecasts (Li Xiaoxi et al., 2019). Stakeholders of companies targeted by inquiry letters also exhibit discernible reactions. For instance, auditors tend to levy higher audit fees on the inquired company (Gietzmann and Pettinicchio, 2014), while creditors may seek greater risk compensation (Hu Ning et al., 2020). Furthermore, companies with lower profitability, heightened business complexity, and weaker internal governance structures are more prone to receiving inquiry letters. Moreover, the greater the number of inquiries raised in the opinion letters, the higher the associated rectification costs (Cassell et al., 2013).

The issuance of an inquiry letter signals a perceived inadequacy in the quality of a company's information disclosure, prompting the entity to strive for enhanced information quality to mitigate potential negative market repercussions. Specifically, inquiry letters function as public disclosures, shedding light on underlying concerns such as the company's profitability to investors (Chen Yunsen et al., 2018). Additionally, based on corporate violation announcements disclosed by stock exchanges, violations may encompass failure to promptly disclose significant company matters, provision of inaccurate or belated performance

forecasts, or dissemination of materially misleading information, exacerbating information asymmetry, compromising investor interests, and undermining market equity (Liu Jianyong et al., 2020). Consequently, such transgressions elevate the costs associated with concealing information. Simultaneously, the receipt of an inquiry letter heightens scrutiny from auditors, institutional investors, and regulators regarding the company's information disclosure practices. Mandates outlined in the "Stock Listing Rules of the Shanghai Stock Exchange" and the "Stock Listing Rules of the Shenzhen Stock Exchange" dictate that companies respond to inquiries within specified timeframes. Failure to comply or provide a satisfactory explanation may trigger an investigation by the China Securities Regulatory Commission, underpinning authoritative oversight that exerts a potent deterrent effect on companies (Chen Yunsen et al., 2019). Consequently, such measures augment regulatory pressure on corporate governance practices.

When a company undergoes repeated scrutiny by regulatory authorities or incurs violations, it signifies an escalation in the regulatory pressure and non-compliance costs it faces (Cheng et al., 2013). The oversight exerted by green inquiry letters can effectively compel companies to innovate in green technologies. This "forcing" effect is evident in the heightened regulatory pressure and non-compliance costs borne by companies. In such instances, on one hand, if a company engages in environmental pollution during its production processes, it will incur corresponding violation fees, thereby exacerbating its financial strain and overall burden. This financial strain prompts companies to explore avenues for reducing environmental pollution and enhancing environmental and social performance. On the other hand, sustained attention from the exchange heightens regulatory pressure on company managers and fosters a culture of heightened professional vigilance (Milly et al., 2019), stimulating them to champion green innovation initiatives within their organizations and thereby alleviating regulatory pressures. To mitigate the cost of non-compliance and preempt further regulatory scrutiny, companies are compelled to increase investments in green innovation. By improving production processes and enhancing resource

utilization efficiency, companies transition towards more environmentally sustainable production methods, thereby minimizing adverse environmental impacts. Consequently, a green inquiry letter characterized by clear objectives and robust enforcement mechanisms serves as a catalyst for fostering green innovation activities within companies and facilitating their sustainable development. Based on the foregoing analysis, we posit the following hypotheses:

H1a: Green inquiry letters promote corporate green innovation.

However, the supervision of corporate governance by green inquiry letters may also lead company management to enter a short-sighted trap, thereby inhibiting green innovation. The regulatory pressure brought by green inquiry letters may cause companies to pay too much attention to short-term environmental performance, focusing on meeting regulatory requirements and responding to short-term regulatory pressure, while neglecting long-term sustainable development and innovation. Among them, short-sighted managers tend to pursue short-term performance peaks at the expense of the long-term interests of the company (Antia et al., 2021). In this case, management may be more inclined to take some less difficult and immediate environmental improvement measures, such as the realization of short-term emission reduction targets, while ignoring innovative green activities that have more far-reaching and long-term effects. Liu Jinke et al. (2022) mentioned that green innovation activities in the field of new energy that companies improve the efficiency of fossil energy use and reduce pollutant emissions at the end are not significant, and green innovation path dependence is more prominent. But true environmental sustainability requires continuous improvement of the environment through long-term innovation and investment. These initiatives require longer time and more resource investment, but they can bring more long-term and sustainable benefits to the company. Environmental benefits, thereby achieving true environmental responsibility and competitive advantage. Based on the above analysis, we propose the following hypotheses.

H1b: Green inquiry letters have an inhibitory effect on corporate green innovation.

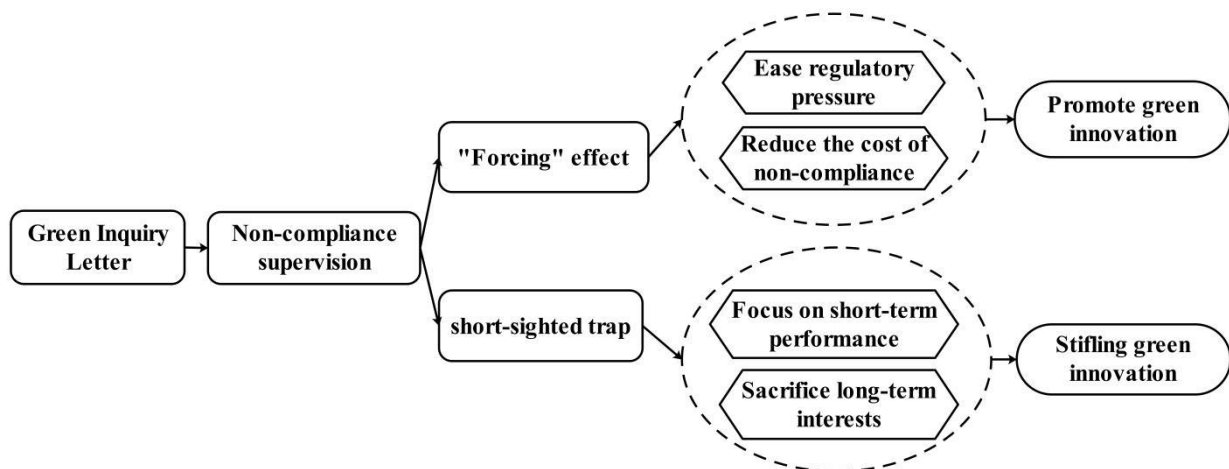


Figure 1. The theoretical framework of this article

3.2. Empirical design

In order to test the impact of green inquiry letters on the

green innovation behavior of listed companies, referring to Li Qingyuan et al. (2020) and Wang Xin et al. (2021), this article sets the following model:

$$IGreen_{i,t+1} = \beta_0 + \beta_1 CL_{i,t} + \beta_2 Control_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (1)$$

Referring to existing research (Wang Xin and Wang Ying, 2021), this study measures company green innovation by the number of green patent applications. Specifically, this study obtained the patent classification number information of invention patents and utility model patents of listed companies from the China Research Data Service Platform (CNRDS), and classified the green patents of listed companies, specifically green invention patents and green utility model patents. In order to comprehensively evaluate the green innovation capabilities of enterprises, this article summarizes the number of green invention patent applications and the number of green utility model patent applications, and then obtains the statistical results of the total amount of green innovation. The number of green patent applications is added by 1 and then the natural logarithm is taken as a measurement indicator of the company's green innovation activity IGreen. The larger the value, the better the company's green innovation performance. Among the

explanatory variables, this study identifies whether the question text of the inquiry letter involves green topics, such as emission reduction. When green topics are involved, the inquiry status is counted, and the dummy variable CL is used to measure the company's receipt of green inquiry letters. If the company receives a green inquiry letter in the t th year, it is 1, otherwise it is 0.

This study mainly focuses on the estimated value of the regression coefficient β_1 . If its estimated value is significantly positive, it means that the green inquiry letter promotes corporate green innovation, and the hypothesis of this study is confirmed. Drawing on existing literature (He Huihua et al., 2021; Li Xiaoxi et al., 2019), this article controls the following corporate financial characteristic variables and corporate governance variables that may affect the company's green innovation behavior in the model. In addition, this article also controls year fixed effects and industry fixed effects. Detailed definitions can be found in Table 1.

Table 1. Variable definition and construction

Symbol	Variable name	Variable construction instructions
IGreen	Company green innovation performance	The natural logarithm of the number of green patent applications is added by 1
CL	Dummy variable for company receiving green inquiry letter	If the company receives a green inquiry letter in the t annual report, it is 1, otherwise it is 0
ROA	Return on total assets	Net profit divided by total assets
Lev	Asset-liability ratio	Total liabilities divided by total assets
Size	Company size	Natural logarithm of total assets at year-end
Ownership	Ownership concentration	Shareholding ratio of the largest shareholder
Soe	Equity attributes	The controlling shareholder of state-owned enterprises is 1, otherwise it is 0
Pay	Executive compensation	The natural logarithm of the total compensation of the top three senior managers (Operating income for the current period-Operating income of last period)/Operating income of last period
Growth	Company growth	
Cfo	Cash flow level	Net cash flow from operating activities/total assets
Board	Board size	The natural logarithm of the number of directors in office at the end of the year

3.3. Data Source

This article takes A-share listed companies from 2015 to 2022 as the research object to study the impact of green inquiry letters on the green innovation of listed companies. Since the Shanghai Stock Exchange and Shenzhen Stock Exchange began to disclose the status of inquiry letters in December 2014, 2015 was chosen as the starting time for the study. The data and text content of the green inquiry letters of listed companies mainly come from the China Research Data Service Platform. The basic characteristics and financial data of the sample companies come from CSMAR. The data on the green innovation of listed companies come from the China Research Data Service Platform (CNRDS). The following sample observations were eliminated: (1) financial companies; (2) samples with non-normal listing status (ST, *ST, etc.) were eliminated; (3) sample observations with missing main research variables. Finally, this study obtained 21,919 company-year sample observations. In order to control the influence of extreme values, all continuous variables are

winsorized by 1% above and below.

3.4. Descriptive Statistics

As can be seen from Table 2, the mean value of IGreen is 0.870, which means that Chinese companies apply for fewer green patents. The mean value of CL is 0.068, indicating that the sample proportion of companies receiving green inquiry letters is about 6.80%, and CL and the standard deviation of IGreen is large, indicating that there are obvious differences between companies. In order to obtain an objective estimate of corporate governance effects, this article refers to Qi Shaozhou et al. (2018) to control variables that may affect corporate green innovation over time. Among them, the average return on total assets is 0.534; the average asset-liability ratio is 0.384; and the average enterprise size is 0.410. The mean value of Soe is 0.296, indicating that the sample of state-owned enterprises is slightly smaller than the sample of non-state-owned enterprises. Descriptive statistics are shown in Table 2.

Table 2. Descriptive statistics of main variables

Variable	N	Mean	Sd	Min	Max
IGreen	21,919	0.870	1.095	0	4.407
CL	21,919	0.068	0.251	0	1
ROA	21,919	0.534	0.943	-1.925	4.885
Lev	21,919	0.384	0.972	-0.790	6.905
Size	21,919	0.410	0.206	0.059	0.950
Ownership	21,919	33.315	14.440	8.477	73.657
Soe	21,919	14.569	0.682	12.948	16.545
Pay	21,919	0.042	0.076	-0.326	0.236
Growth	21,919	0.296	0.457	0	1
Cfo	21,919	22.166	1.269	19.006	26.219
Board	21,919	2.105	0.195	1.609	2.639

4. Empirical Results and Analysis

4.1. Analysis of Benchmark Regression Results

The regression results of the model are shown in Table 3. In the first two columns, this article controls year and industry fixed effects. It can be seen that the regression coefficient of CL is 0.215 and the T-value is 5.779, which is significant at the 1% level. In the last two columns of the table, this article adds a series of control variables that may affect corporate green innovation. The regression coefficient of CL becomes 0.199, and the T-value becomes 6.410, which is still

significant at the 1% level. The above regression results show that green inquiry letters significantly promote the green innovation performance of enterprises, which is in line with the theoretical expectations of the "forcing" effect and supports hypothesis H1a. Among the control variables, the regression coefficients of ROA, Size, Soe, Pay and Growth are all significantly positive, indicating that the higher the return on total assets, the larger the company size, the higher the state-owned enterprise, executive compensation, and the better the company's growth, the better the green innovation of listed companies can be realized.

Table 3. Multivariate regression results

Variable	IGreen			
	Coefficient	T-value	Coefficient	T-value
CL	0.215***	(5.779)	0.199***	(6.410)
ROA			0.466***	(4.066)
Lev			0.132**	(2.171)
Size			0.382***	(29.943)
Ownership			-0.000	(-0.302)
Soe			0.150***	(5.311)
Pay			0.069***	(3.795)
Growth			0.023***	(2.694)
Cfo			0.004	(0.374)
Board			0.094*	(1.655)
Constant	0.269**	(2.027)	-9.307***	(-27.676)
Year and Industry FE	YES			
N	21,919		21,919	
R-squared	0.176		0.370	

Note: ***, **, and * represent the significance levels of 1%, 5%, and 10% respectively, the same as in the table below.

4.2. Robustness Test

This article recognizes that the regression results may be affected by a variety of factors and there is a certain degree of contingency, which injects a certain degree of randomness into the research results of this article. In order to verify the robustness of the regression results, this study adopts a variety of robustness tests. First, this article changes the measurement method of variables to ensure that the regression results are not affected by specific measurement methods. Secondly, this study tried different regression models to verify whether the regression results remain stable under different model frameworks. In addition, this study replaces the regression samples and uses the propensity score matching method to

ensure that the regression results are not affected by sample selection bias.

4.2.1. Change the variable measurement method

This study replaces the measurement method of green innovation performance with the average citation of green patents (IGreenA), and obtains a regression coefficient of CL of 0.097, which is significantly positive at the 5% level. Furthermore, the measurement methodology for the explanatory variable representing green inquiry activity is modified to log-transform the sum of queries plus one (denoted as CL2). Remarkably, this alternative specification produces consistent results with the baseline regression, confirming a positive and statistically significant relationship.

Table 4. Change the variable measurement method

Variable	IGreenA		IGreen	
	Coefficient	T-value	Coefficient	T-value
CL	0.097**	(2.194)		
CL2			0.239***	(5.984)
ROA	0.312**	(2.256)	0.474***	(4.134)
Lev	0.009	(0.142)	0.131**	(2.161)
Size	0.181***	(14.151)	0.382***	(29.971)
Ownership	0.000	(0.250)	-0.000	(-0.300)
Soe	0.037	(1.211)	0.150***	(5.331)
Pay	0.067***	(3.194)	0.068***	(3.789)
Growth	0.029***	(3.050)	0.023***	(2.690)
Cfo	-0.012	(-1.125)	0.004	(0.353)
Board	0.125**	(2.069)	0.095*	(1.666)
Constant	-4.501***	(-14.113)	-9.311***	(-27.684)
Year and Industry FE	YES			
N	21,919		21,919	
R-squared	0.110		0.370	

4.2.2. Other robustness tests

Table 5 lists the results of other robustness tests. Columns (1) to (3) all control industry fixed effects and year fixed effects. The degree of pollution of enterprises is the key to accurately identify the impact of green inquiry letters on corporate green innovation. In this study, enterprises are divided into polluting enterprises and non-polluting enterprises according to their proportion of polluting business. When an enterprise is a polluting enterprise, it is 1, Otherwise it is 0. The results in column (1) show that when the samples from non-polluting industries are deleted and only the samples from polluting industries are retained, the regression coefficient of CL is 0.231 and the T-value is 5.682, which is

significant at the 1% level, that is, the obtained the regression results are still positively significant. The results in column (2) show that when using the Tobit model for regression analysis, the regression coefficient of CL is 0.199 and the T-value is 6.423, which is significant at the 1% level and the main conclusion remains unchanged. The results in column (3) show that in order to deal with the regression bias caused by sample self-selection, after applying propensity score matching (PSM), the regression coefficient of CL is 0.205, the T-value is 5.044, and the regression result is still positive and significant. To sum up, the robustness test results show that the benchmark regression results of this study are robust, proving that green inquiry letters can promote the green innovation performance of enterprises.

Table 5. Other robustness tests

Variable	(1)	(2)	(3)
	IGreen Polluting industry samples	IGreen Tobit model	IGreen PSM
CL	0.231*** (5.682)	0.199*** (6.423)	0.205*** (5.044)
ROA	0.656*** (3.936)	0.466*** (4.074)	0.459** (2.268)
Lev	0.286*** (3.449)	0.132** (2.176)	0.044 (0.406)
Size	0.421*** (24.757)	0.382*** (30.005)	0.389*** (16.815)
Ownership	-0.000 (-0.145)	-0.000 (-0.303)	0.001 (0.805)
Soe	0.127*** (3.435)	0.150*** (5.322)	0.160*** (2.788)
Pay	0.032 (1.363)	0.069*** (3.803)	0.078** (2.153)
Growth	0.016 (1.237)	0.023*** (2.699)	0.021 (1.254)
Cfo	0.002 (0.151)	0.004 (0.375)	0.025 (0.941)
Board	0.057 (0.748)	0.094* (1.658)	0.192* (1.681)
Constant	-9.982*** (-22.945)	-9.307*** (-27.734)	-9.687*** (-15.323)
Year and Industry FE	YES		
N	11,546	21,919	2,870
R-squared	0.371	0.1531	0.387

4.3. Endogeneity Test

4.3.1. Heckman Correction

Since listed companies may be selective when questioned, the conclusion of this article has a sample selection bias. In order to control potential endogeneity problems, referring to the research of Nie Ping et al. (2019), this article uses the

Heckman two-stage self-selection correction model for testing. From the regression results, the IMR regression coefficient is statistically significant, indicating that endogeneity problems exist and have been effectively controlled. After controlling for endogeneity, the coefficient of CL is still significantly positive at the 1% level, indicating that the regression results are robust.

Table 6. Heckman two-stage regression results

Variable	CL		IGreen	
	Coefficient	T-value	Coefficient	T-value
CL			0.208***	(6.690)
IMR			-1.355***	(-2.743)
ROA	-1.879***	(-9.885)	2.576***	(3.355)
Lev	0.831***	(9.753)	-0.829**	(-2.355)
Size	0.053***	(3.393)	0.318***	(11.599)
Ownership	-0.008***	(-7.538)	0.009***	(2.591)
Soe	-0.199***	(-5.338)	0.380***	(4.246)
Pay	-0.051**	(-2.017)	0.130***	(4.420)
Growth	0.075***	(5.448)	-0.063**	(-1.961)
Cfo	-0.055***	(-3.154)	0.070***	(2.657)
Board	-0.296***	(-3.888)	0.437***	(3.188)
Constant	-2.035***	(-4.615)	-6.029***	(-4.804)
Year and Industry FE	YES			
N	21,919		21,919	
R-squared	0.113		0.370	

4.3.2. Instrumental variable method

This study uses the industry average and provincial average of green inquiry letters as instrumental variables. The regression results are shown in Table 7. It can be seen from the results that the regression coefficients of CL-mean are all significantly positive at the 1% level, which is in line with

expectations. In addition, the direction of the regression coefficient of CL is consistent with the baseline regression, and both are significantly positive at the 5% level. Based on the control of endogeneity issues by the instrumental variable method, we can more robustly conclude that the issuance of green inquiry letters promotes green innovation behavior of enterprises.

Table 7. Instrumental variables regression results

Variable	(1)	(2)	(3)	(4)
	CL	IGreen	CL	IGreen
	industry average		provincial average	
CL-mean	0.976***		0.894***	
	(18.334)		(9.540)	
CL		0.300**		0.546**
		(2.146)		(1.978)
ROA	-0.318***	0.499***	-0.315***	0.579***
	(-8.793)	(4.079)	(-8.514)	(4.008)
Lev	0.108***	0.120*	0.110***	0.093
	(7.421)	(1.909)	(7.459)	(1.357)
Size	0.004*	0.381***	0.003	0.380***
	(1.758)	(29.939)	(1.341)	(29.794)
Ownership	-0.001***	-0.000	-0.001***	0.000
	(-5.975)	(-0.187)	(-6.002)	(0.083)
Soe	-0.025***	0.152***	-0.022***	0.158***
	(-4.690)	(5.358)	(-4.292)	(5.422)
Pay	-0.004	0.069***	-0.003	0.070***
	(-1.195)	(3.811)	(-0.843)	(3.850)
Growth	0.009***	0.022**	0.009***	0.019**
	(4.040)	(2.547)	(4.003)	(2.180)
Cfo	-0.004**	0.004	-0.004*	0.005
	(-2.045)	(0.409)	(-1.781)	(0.496)
Board	-0.036***	0.098*	-0.037***	0.107*
	(-3.386)	(1.711)	(-3.468)	(1.844)
Constant	0.028	-9.312***	0.026	-9.322***
	(0.484)	(-27.659)	(0.450)	(-27.692)
Year and Industry FE	YES			
N	21,919		21,919	
R-squared	0.076	0.368	0.065	0.368

5. Further Analysis

5.1. Heterogeneity Analysis

5.1.1. Environmental pollution levels

The exacerbation of environmental pollution not only poses grave threats to public health (Chen Shuo and Chen Ting, 2014) but also imposes substantial economic burdens (Ito and Zhang, 2016), resulting in significant economic losses across society. As highlighted by Li Weibing et al. (2019), air pollution exerts a substantial negative impact on enterprise productivity. Their research reveals that for every 1% increase in PM2.5 levels, enterprise productivity decreases by 0.692%. Air pollution can impede enterprise productivity through various channels, such as diverting R&D funds, causing resource misallocation, and diminishing labor supply. To achieve a harmonious balance between economic advancement and environmental preservation, governmental entities are intensifying efforts to curb air pollution, particularly targeting heavily polluting industries that emit significant pollutants. The resultant environmental governance pressures impel companies to innovate and develop new technologies and products. This, in turn, fosters corporate technological advancement, enabling companies to capitalize on the benefits of newly developed green products (Li Qingyuan et al., 2020). In support of this notion, research conducted by Ma Yongqiang et al. (2021) indicates that air pollution markedly boosts the number of green patent applications by listed companies operating within polluting

industries.

Based on the above analysis, in order to meet the public's urgent demand for environmental protection, green inquiry letters will have a more significant impact on corporate green innovation, and supervision will be stricter. The issuance of green inquiry letters encourages companies to actively adopt green innovation measures and actively assume social responsibilities to improve environmental quality. This increase in regulatory pressure has prompted companies to adjust their governance behaviors and pay more attention to environmental protection investment and innovation, thereby promoting the development of green technologies and green products, and bringing a positive impact to the environmental protection of the entire society. Referring to the measurement method of environmental pollution by Li Weibing et al. (2019), the annual average PM2.5 emission concentration is used as the core air pollution indicator. The larger the average PM2.5 concentration, the more serious the air pollution is. This article examines whether there are differences in the impact of green inquiry letters on corporate green innovation performance under different PM2.5 indices. It can be seen from the regression results that the absolute value of the regression coefficient of CL is greater when the PM2.5 index is higher, which confirms the theoretical speculation of this article and shows that the supervision and incentive effects of green inquiry letters on corporate green innovation performance are in the external environment. It is more significant when the pollution level is higher.

Table 8. Heterogeneity analysis of environmental pollution levels

Variable	IGreen		IGreen	
	PM2.5 index (High)		PM2.5 index (Low)	
	Coefficient	T-value	Coefficient	T-value
CL	0.485***	(11.319)	-0.012	(-0.301)
ROA	0.384**	(2.536)	0.609***	(3.857)
Lev	0.108	(1.452)	0.167*	(1.957)
Size	0.337***	(23.076)	0.424***	(23.570)
Ownership	0.001	(1.362)	-0.002	(-1.539)
Soe	0.136***	(4.252)	0.184***	(4.346)
Pay	0.035	(1.626)	0.086***	(3.383)
Growth	0.028***	(2.819)	0.015	(1.130)
Cfo	0.009	(0.657)	-0.008	(-0.555)
Board	0.122*	(1.856)	0.051	(0.615)
Constant	-7.906***	(-20.807)	-10.378***	(-22.283)
Year and Industry FE	YES			
N	11,604		10,315	
R-squared	0.346		0.412	

5.1.2. Public attention

As the global environmental pollution problem intensifies, the public's attention to pollution problems is increasingly deepening, and public attention is gradually becoming an important force in strengthening environmental protection. As a participant in resource allocation, the public's concern for the environment directly affects the behavioral decisions of polluting enterprises (Liu Xinghua and Yuan Qijing, 2024). On the one hand, public concern about environmental issues can be transformed into preferences for green products (Guo et al., 2020), making green products more competitive in the commodity market. As the public's environmental preference increases, the public prefers to purchase green and environmentally friendly products, leading to a decline in

profits of companies that adopt polluting technologies (Wu Libo et al., 2022). This will guide companies to adjust the positioning of products and services, pay more attention to environmental protection and green innovation, and increase investment in green innovation to meet market demand. On the other hand, public concern about environmental issues can use the power of public opinion to exert environmental pressure on companies and increase their risk of non-compliance. Faced with the pressure of public opinion, companies will have more motivation to promote green innovation. In addition, a company's brand image and reputation are affected by public attention. When public attention is high, if a company can actively respond to environmental protection issues and adopt green innovation

measures, it will enhance its brand image and reputation, and enhance consumers' trust and favor.

This study uses the Baidu Smog Index to measure the public's concern about pollution. The Baidu Smog Index is composed of the frequency with which the word "haze" appears when the public searches for it on Baidu. The higher the index, the more times it is searched, and the public's concern about pollution. The more attention is paid to haze pollution. This study examines whether there are differences

in the impact of green inquiry letters on corporate green innovation performance under different levels of public attention. It can be seen from the regression results that the absolute value of the regression coefficient of CL is greater when the Baidu Fog Index is higher, which confirms the theoretical speculation of this article and shows that the incentive effect of green inquiry letters on corporate green innovation performance is more effective in areas with higher public attention.

Table 9. Heterogeneity analysis of public attention

Variable	IGreen		IGreen	
	Baidu Smog Index (High)		Baidu Smog Index (Low)	
	Coefficient	T-value	Coefficient	T-value
CL	0.316***	(6.614)	0.115***	(3.150)
ROA	0.722***	(4.241)	0.315**	(2.329)
Lev	0.187**	(2.308)	0.120*	(1.747)
Size	0.359***	(22.396)	0.399***	(27.391)
Ownership	-0.001	(-0.782)	0.000	(0.340)
Soe	0.136***	(3.714)	0.164***	(5.140)
Pay	0.072***	(3.065)	0.059***	(2.825)
Growth	0.023**	(1.990)	0.023**	(2.081)
Cfo	0.010	(0.677)	-0.003	(-0.217)
Board	0.118*	(1.648)	0.078	(1.197)
Constant	-8.775***	(-19.983)	-9.684***	(-26.112)
Year and Industry FE	YES			
N	10,721		11,198	
R-squared	0.364		0.388	

5.2. Mechanism Analysis

As a form of external oversight, green inquiry letters serve to compel companies to engage in green technological innovations. This "forcing" effect is evident in the regulatory pressure and non-compliance costs encountered by companies. Firstly, regulatory agencies' stringent environmental compliance requirements, conveyed through inquiry letters and other means, prompt companies to proactively implement measures to mitigate the risk of fines, penalties, or damage to their reputation. Confronted with such regulatory pressure, companies are inclined to enhance their investments in environmental protection and actively pursue avenues for innovating green technologies. Secondly, the ongoing enhancement and enforcement of environmental regulations have escalated the costs associated with non-compliance, exposing companies to the prospect of substantial fines, legal disputes, and investigation expenses. This burden of non-compliance costs further stimulates companies to expedite the development of green technologies, aiming to reduce environmental pollution and enhance environmental and social performance. The aforementioned empirical findings underscore the significant enhancement of listed companies' green innovation performance attributable to green inquiry letters. Consequently, to delve deeper into the specific impact mechanism of green inquiry letters on companies' green innovation performance, this study will undertake further mechanism analysis and testing. Building upon this foundation, the study will delve into the effects of green inquiry letters on the regulatory pressure and violation costs incurred by listed companies.

Under more stringent environmental regulations, companies often take a series of measures, including reducing the scale of economic activities or actively implementing pollution control, to ensure the sustainability and profitability of operations. In addition, the effective supervision hypothesis holds that the media exposes listed companies to the supervision of regulatory authorities, investors, etc. through functions such as information dissemination and information production, thereby effectively inhibiting the opportunistic behavior of managers. Referring to Chen Shiyi et al. (2021) and Yu Zhongbo et al. (2011), this article uses the sewage charge (SC) to measure the company's violation cost and takes the natural logarithm of the number of negative news (NM) to measure the regulatory pressure faced by the company. Drawing on existing literature (Li Xiaoxi et al., 2019), this article controls the following financial characteristic variables and corporate governance variables: return on total assets (ROA); asset-liability ratio (Lev); company size (Size), the natural pair of total assets at the end of the year number; ownership concentration (Ownership), the proportion of shares held by the largest shareholder; equity attributes (SOE); company listing years (Age); company growth (Growth); cash flow level (Cfo); management incentives (Share). In addition, this article controls year fixed effects and industry fixed effects. The regression results are shown in Table 10. It can be seen that the coefficients of CL in columns (1) and (3) are both significantly positive, indicating that green inquiry letters have a positive impact on enterprises' sewage charges and the number of negative news.

Table 10. Mechanism analysis regression results

Variable	SC		NM	
	(1)	(2)	(3)	(4)
	Coefficient	T-value	Coefficient	T-value
CL	0.515***	(3.306)	0.353***	(13.246)
ROA	-0.305	(-0.549)	-1.440**	(-10.767)
Lev	0.224	(0.673)	0.030	(0.433)
Size	0.281***	(4.317)	0.283***	(20.608)
Ownership	0.004	(0.950)	-0.002**	(-2.381)
Soe	0.758***	(4.504)	-0.222***	(-7.616)
Pay	-0.201*	(-1.958)	0.125***	(6.520)
Growth	-0.064*	(-1.735)	0.010	(1.045)
Cfo	0.032	(0.660)	0.069***	(5.803)
Board	0.254	(0.871)	-0.113*	(-1.960)
Constant	-2.245	(-1.203)	-2.908***	(-8.358)
Year and Industry FE	YES			
N	21,918		21,919	
R-squared	0.135		0.312	

6. Conclusion

In the context of regulatory evolution, inquiry letters, serving as non-punitive regulatory instruments, have emerged as pivotal tools for overseeing capital markets. This study utilizes data from listed companies spanning 2015 to 2022 to examine the influence of green inquiry letters on corporate green innovation. The investigation reveals that green inquiry letters issued by exchanges play a facilitative role in stimulating corporate green innovation, a finding upheld even after subjecting the analysis to a battery of robustness and endogeneity tests. Furthermore, through heterogeneity analysis, it becomes apparent that the promotional impact of green inquiry letters is particularly pronounced in regions characterized by elevated levels of PM2.5 and Baidu haze index. Mechanism analysis underscores that green inquiry letters substantially augment enterprises' pollution charges and the incidence of negative publicity. In essence, green inquiry letters serve to galvanize companies towards green innovation by heightening regulatory pressure and the attendant costs of non-compliance.

At the theoretical level, this study embarks on an exploration from the perspective of the impact of green inquiry letters on corporate governance. It delves into a nuanced discussion of the economic ramifications of green inquiry letters, thereby offering a fresh theoretical lens for comprehending the influence of regulatory policies on corporate behavior. Through an analysis of the role of green inquiry letters in fostering corporate green innovation, this study paves the way for a new avenue of research in the realm of corporate governance effects. On a practical level, the findings of this study hold significant implications for regulatory authorities in bolstering the inquiry letter supervision system. By gaining a deeper understanding of the regulatory mechanism of inquiry letters and their economic implications, regulatory bodies can enhance their guidance of regulatory practices and further refine regulatory efficacy. Specifically, authorities can refine the issuance mechanism and processing procedures of green inquiry letters to reinforce the "ex post supervision" of information disclosure by listed companies. This, in turn, can foster market standardization and transparency, thus enhancing overall market operational efficiency. Furthermore, this study underscores the pressing need to continue advancing green inquiry letter supervision

empirically. Given that supervision through green inquiry letters can effectively escalate the costs of corporate violations and amplify the regulatory pressure faced by enterprises, thereby optimizing the market environment and elevating the quality of listed companies, a concerted effort to strengthen green inquiry letter supervision is imperative.

For enterprises, in order to comply with regulatory requirements, they should be committed to strengthening the construction of internal supervision systems and improving corporate governance levels. As profit pursuers, in order to create shareholder wealth, enterprises should strengthen green innovation activities, encourage managers to establish green innovation concepts, formulate green innovation strategies, and cultivate R&D personnel's green innovation awareness. This creates a unique competitive advantage while minimizing negative externality economic activities. Regulatory authorities should formulate long-term regulatory strategies and continuously improve the supervision methods of green inquiry letters to adapt to market changes and the continuous evolution of regulatory needs, so as to achieve the continuous achievement of regulatory objectives. In addition, regulatory authorities should also focus on the pertinence and accuracy of green inquiry letter supervision to ensure that it can effectively respond to market risks and challenges and provide market entities with a stable and reliable regulatory environment.

References

- [1] Antia M, Pantzalis C, Park J C. Does CEO myopia impede growth opportunities? [J]. *Review of Quantitative Finance and Accounting*, 2021, 56(4): 1503-1535.
- [2] Bai, Y., S. Song, J. Jiao, and R. Yang. The Impacts of Government R&D Subsidies on Green Innovation: Evidence from Chinese Energy-intensive Firms [J]. *Journal of Cleaner Production*, 2019, 233: 819-829.
- [3] Barney, J., Wright, M., Ketchen, D. J. The Resource-Based View of the Firm: Ten Years After 1991. *Journal of Management*, 2001, 27(6): 625-641.
- [4] Bens, Daniel A., Cheng, Mei & Neamtiu, Monica. (2016). The Impact of SEC Disclosure Monitoring on the Uncertainty of Fair Value Estimates. *Accounting review*(2), 349-375.
- [5] Bozanic Z, Dietrich J R, Johnson B A. SEC comment letters and firm disclosure [J]. *Journal of Accounting and Public Policy*, 2017, 36(5): 337-357.

- [6] Cao Hongjun & Chen Zewen. (2017). The driving effect of internal and external environment on corporate green innovation strategy—the moderating role of senior executives' environmental awareness. *Nankai Management Review* (06), 95-103.
- [7] Chen Shuo & Chen Ting. (2014). Air quality and public health: taking sulfur dioxide emissions from thermal power plants as an example. *Economic Research* (08), 158-169+183.
- [8] Cheng, Q., T. Luo and H. Yue, 2013, "Managerial Incentives and Management Forecast Precision", *The Accounting Review*, Vol.88, pp.1575~1602.
- [9] Colla P, Vitale P. Short-sightedness, Short-sale Constraints and the Dissemination of Private Information. Available at SSRN 4012043, 2022.
- [10] Chen Yunsen, Deng Yilu & Li Zhe. (2018). Does non-punitive supervision have information content? —Evidence based on inquiry letters. *Financial Research* (04), 155-171.
- [11] Chen Yunsen, Deng Yilu & Li Zhe. (2019). Research on the effectiveness of front-line supervision of stock exchanges: Evidence based on financial report inquiry letters. *Management World* (03), 169-185+208.
- [12] Deng Yilu, Li Zhe & Chen Yunsen. (2020). Front-line supervision of stock exchanges and changes in corporate executives - Evidence based on inquiry letters. *Management Review* (04), 194-205
- [13] Eiadat, Y., Kelly, A., Roche, F. Green and Competitive? An Empirical Test of the Mediating Role of Environmental Innovation Strategy. *Journal of World Business*, 2008, 43(2): 131-145.
- [14] Gietzmann M B, Pettinicchio A K. External auditor reassessment of client business risk following the issuance of a comment letter by the SEC [J]. *European Accounting Review*, 2014, 23(1): 57-85.
- [15] Gu Xiaolong, Wu Yuanting, Huang Yongjian & Liu Jia. (2021). Will regulatory penalties promote corporate social responsibility? —Research based on the perspective of impression management. *Investment Research* (05), 33-65.
- [16] He Huihua & Fang Junxiong. (2021). Will the supervision of exchange inquiry letters affect the performance sensitivity of executive compensation. *Economic Management* (08), 177-192.
- [17] Hu Ning, Cao Yanan, Zhou Nan & Xue Shuang. (2020). Regulatory information disclosure and creditor pricing decisions - Evidence based on the annual report inquiry letter of the Shanghai and Shenzhen Stock Exchanges. *Accounting Research* (03), 54-65.
- [18] Jie (Jack) He & Xuan Tian. (2013). The dark side of analyst coverage: The case of innovation. *Journal of Financial Economics*(3), 856-878.
- [19] Jaffe, A. B., Newell, R. G., Stavins, R. N. A Tale of Two Market Failures: Technology and Environmental Policy. *Ecological Economics*, 2005, 54(2-3): 164-174.
- [20] Johnston R, Petacchi R. Regulatory oversight of financial reporting: Securities and exchange commission comment letters [J]. *Contemporary Accounting Research*, 2017, 34(2): 1128-1155.
- [21] Koichiro Ito & Shuang Zhang. (2020). Willingness to Pay for Clean Air: Evidence from Air Purifier Markets in China. *Journal of Political Economy*(5), 1627-1672.
- [22] Kubick, T. R., D. P. Lynch, M. A. Mayberry, and T. C. Omer. The Effects of Regulatory Scrutiny on Tax Avoidance: An Examination of SEC Comment Letters [J]. *Accounting Review*, 2016, 91, (6): 1751-1780.
- [23] Lin, Y. H., Chen, Y. S. Determinants of Green Competitive Advantage: The Roles of Green Knowledge Sharing, Green Dynamic Capabilities, and Green Service Innovation. *Quality & Quantity*, 2017, 51(4): 1663-1685.
- [24] Liu Bai & Lu Jiarui. (2019). Can front-line supervision of exchanges identify capital market risks? —Evidence based on annual report inquiry letters. *Financial Research* (07), 45-58.
- [25] Liu Jianyong & Zhang Xueqi. (2020). Non-punitive supervision, corporate violations and risk taking. *Accounting Communications* (04), 77-81.
- [26] Liu Jinke & Xiao Yiyang. (2022). China's environmental protection tax and green innovation: Leverage effect or crowding out effect?. *Economic Research* (01), 72-88.
- [27] Li Xiaoxi, Rao Pingui, Yue Heng. Annual report inquiry letter and management performance forecast [J]. *Management World*, 2019, (8): 173-188.
- [28] Li Qingyuan & Xiao Zehua. (2020). Heterogeneous environmental regulatory tools and corporate green innovation incentives—Evidence from green patents of listed companies. *Economic Research* (09), 192-208.
- [29] Ma Yongqiang, Zhao Liangkai, Yang Huayue & Tang Guoqiong. (2021). Air pollution and corporate green innovation - based on empirical evidence from A-share listed companies in my country's heavily polluting industries. *Industrial Economics Research* (06), 116-128.
- [30] Mei Beilei, Guo Xuehan & Ye Jianfang. (2021). The spillover effect of inquiry letters-based on the perspective of earnings management. *Accounting Research* (06), 30-41.
- [31] Mili, Huang Jing & He Lina. (2019). Will non-punitive supervision of stock exchanges affect auditors' pricing decisions? —Empirical evidence based on inquiry letters. *Auditing and Economic Research* (04), 57- 65.
- [32] Nie Ping & Pan Zaizhen. (2019). Inquiry letter supervision and the "hollowing out" of major shareholders—evidence from the Shanghai and Shenzhen Stock Exchanges' annual report inquiries. *Auditing and Economic Research* (03), 91-103.
- [33] Peng Xuerong, Wei Jiang. Stakeholder environmental orientation and corporate ecological innovation—the moderating role of executives' environmental awareness. *Scientific Research*, 2015, 33(7): 1109-1120.
- [34] Qi Shaozhou, Lin Wei & Cui Jingbo. (2018). Can the environmental rights trading market induce green innovation? —Evidence based on green patent data of listed companies in my country. *Economic Research* (12), 129-143.
- [35] Sharma, S. Managerial Interpretations and Organizational Context as Predictors of Corporate Choice of Environmental Strategy. *Academy of Management Journal*, 2000, 43(4): 681-716.
- [36] Wang Q. Determinants of segment disclosure deficiencies and the effect of the SEC comment letter process [J]. *Journal of Accounting and Public Policy*, 2016, 35(2): 109-133.
- [37] Wang Xin & Wang Ying. (2021). Research on green credit policy promoting green innovation. *Management World* (06), 173-188+11. doi:10.19744/j.cnki.11-1235/f.2021.0085.
- [38] Xiang, X., C. Liu, and M. Yang. Who is Financing Corporate Green Innovation [J]. *International Review of Economics & Finance*, 2022, 78: 321-337.
- [39] Xiong Guangqin, Shi Daqian & Li Meina. (2020). The impact of low-carbon city pilots on corporate green technology innovation. *Scientific Research Management* (12), 93-102.
- [40] Yang Dong & Chai Huimin. (2015). A review of research on the driving factors of corporate green technology innovation and its impact on performance. *China Population-Resources and Environment* (S2), 132-136.

- [41] Yang Daoguang, Chen Hanwen & Liu Qiliang. (2017). Media pressure and corporate innovation. *Economic Research* (08), 125-139.
- [42] Yao Hongxin & Wu Yiting. (2018). Green subsidies, technology spillovers and ecological dumping. *Journal of Management Science* (10), 47-60.
- [43] Zhao Zhenyang, Wang Yuting & Chen Jianing. (2022). Non-administrative punitive supervision and corporate investment efficiency - Empirical evidence based on exchange inquiry letters. *Nankai Economic Research* (05), 181-200.
- [44] Zhang Gang, Zhang Xiaojun. Analysis of influencing factors of green innovation strategy based on the theory of planned behavior [J]. *Business Economics and Management*, 2013, (7): 47-56.
- [45] Zhang Junsheng, Tang Xiaojian & Li Guangzhong. (2018). Can preventive supervision inhibit the risk of stock price crash? ——A study based on the exchange's annual report inquiry letter. *Journal of Management Science* (10), 112-126.
- [46] Zhu Jinyu, Huang Jichen, Li Xiangli & Li Yueying. (2023). The impact of non-administrative punitive supervision on corporate social responsibility performance - Empirical evidence from annual report inquiry letters. *Accounting Monthly* (05), 52-59.