



The Influence of Managerial Myopia on Corporate Green Innovation: An Empirical Analysis of A-Share Listed Firms (2012-2021)



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Abstract: This study examines the relationship between managerial myopia and green innovation in corporations, utilizing data from non-financial and non-insurance A-share listed companies in the period from 2012 to 2021. It constructs a theoretical framework grounded in the principles of long-term investment and agency costs to analyze this relationship. The findings reveal that managerial myopia adversely affects sustainable capital investment and significantly impedes long-term green innovation activities within firms. Specifically, managerial myopia escalates agency costs, thereby stifling green innovation initiatives. This study elucidates that the agency dilemma in corporations, stemming from the dichotomy between ownership and management, is exacerbated by managerial myopia. Such a condition fosters a conflict between shareholders and managers, with the latter often prioritizing short-term gains over long-term value creation. This misalignment not only hinders the long-term trajectory of corporate development but also diminishes overall corporate value, thereby undermining green innovation efforts. The results underscore the detrimental impact of managerial myopia on the progression of green innovation. Consequently, it is imperative for corporate owners to acknowledge the pivotal role of management behavior in fostering green innovation and to actively mitigate the adverse effects of managerial myopia on corporate development.

Keywords: Managerial myopia; A-share listed companies; Long term development of enterprises; Green innovation

1 Introduction

Amidst the rapid economic expansion facilitated by industrial advancement, China has encountered significant environmental challenges, including air pollution and heightened emissions [1]. The critical need to balance environmental sustainability with economic growth has garnered attention across diverse societal sectors. International experiences suggest that fostering green development and transformation is pivotal. Green innovation emerges as a key driver in energy conservation, ecological improvement, and environmental governance enhancement. Recent trends in China indicate a growing familiarity with green innovation initiatives, evidenced by the predominance of green patent applications among listed companies surpassing other types of patents [2]. Nonetheless, it is crucial to recognize the existing structural imbalances in China's approach to green innovation. Moreover, with China's swift economic progress and technological evolution, innovation activities are increasingly characterized by their complexity and diversity. The sustained health of the economy is contingent on national-level macroeconomic strategies and robust corporate support. Corporations play an instrumental role in environmental stewardship and China's transition towards green practices. It is incumbent upon Chinese enterprises to shoulder the responsibility of green innovation, contribute to environmental governance, and bolster sustainable socio-economic advancement.

The role of executives, as primary stewards of corporate management, is pivotal in shaping the daily operations and future trajectory of companies. This renders the analysis of managerial behaviors in listed companies critical for both investment activities and the long-term development of these entities. In the current market landscape, the prevalence of managerial myopia, often triggered by internal pressures and investor expectations, has become a notable concern. This myopic behavior, primarily driven by the pursuit of personal gain, poses a substantial obstacle to the sustained green innovation activities within corporations. Green innovation initiatives necessitate enduring capital investments, yet managerial myopia shifts the focus of operators towards immediate business performance enhancements. This short-term orientation leads to a reduction in investments in long-term innovation projects and

assets, subsequently curtailing the acquisition of essential equipment for green innovation endeavors. Such a trend not only impairs the capacity for sustained capital investment but also diminishes the effectiveness of green innovation efforts. Additionally, the pursuit of reputation and status by managers can further entrench myopic practices. These practices dilute the influence of corporate owners, diminish shareholder returns, and aggravate agency issues that stem from the separation of ownership and management within enterprises. The resultant short-sighted managerial behavior amplifies agency costs for principals, placing financial strain on companies and impeding their progress towards green innovation.

Extant research has consistently acknowledged the significance of management characteristics in guiding innovation decisions within enterprises. Studies have illuminated that managerial myopia is a prevalent phenomenon in listed companies, exerting detrimental effects on technological innovation [3]. The manifestations of these adverse impacts are multifaceted. Firstly, managerial myopia may prompt companies to engage in high-interest entrusted loans, thereby curtailing the potential for future innovative endeavors [4]. Additionally, managers often allocate disproportionate amounts of time, energy, and capital towards short-term projects that promise quicker and higher returns. This strategy is frequently employed as a defensive measure against potential hostile takeovers by investors, subsequently leading to a shortfall in innovation investment [5]. Furthermore, managerial myopia can exacerbate the negative influence of market manipulation on corporate innovation [6].

The landscape of green innovation, in comparison to more conventional forms of innovation, is inherently marked by greater uncertainty and risk due to its distinctive external characteristics. The body of research on green innovation predominantly explores it through the lenses of both internal and external enterprise factors, as well as environmental regulations.

From an internal standpoint, Xi and Zhao [7] conducted empirical research demonstrating that the environmental consciousness of corporate management fosters green innovation, both technically and managerially. Examining the external dimensions, Xu et al. [8] presented empirical findings indicating that the issuance of green bonds positively influences the stature of green innovation. This impact is facilitated through mechanisms involving long-term R&D investment and agency costs. Furthermore, Wang and Wang [9] developed a theoretical framework centered on the evolution of green finance. According to this framework, green credit policies can reduce agency costs in enterprises, enhance the efficiency of green investments, and, consequently, bolster the advancement of green innovation.

When considering the role of environmental regulation, scholarly analysis presents a nuanced view. Tao et al. [10] posited that environmental regulation policies, while facilitating increased investment in green patent applications, simultaneously exhibit some detrimental effects on green innovation. In a related vein, Li and Xiao [11] delved into the impacts exerted by different environmental regulatory tools. Their analysis highlighted that pollutant discharge fees might impede the development of green innovation, whereas environmental subsidies tend to have a contrary, more positive effect. Further expanding on this theme, Tian and Hao [12] investigated the influence of Foreign Direct Investment (FDI) on green innovation performance, particularly within the context of three distinct environmental regulations.

The specific impact of managerial myopia on green innovation, and the mechanisms through which it operates, remain under-explored in current literature. This study centers on green innovation, posing critical inquiries: Does managerial myopia impede the growth of green innovation? In what ways does managerial myopia influence green innovation? Utilizing data from A-share listed companies in Shanghai and Shenzhen (2012-2021), this research empirically substantiates that managerial myopia can hinder green innovation, primarily by curtailing long-term investments and escalating agency costs.

While the influence of agency costs on green innovation is broadly acknowledged in scholarly circles, there is a notable paucity of research examining this issue from a management perspective. Systematic investigations into the effects of managerial myopia on green innovation, particularly in the context of long-term investment and agency costs, are scarce. Hence, the potential marginal contribution of this study is twofold: content-wise, it not only augments the existing body of literature by elucidating the impact of green innovation on enterprises, but also proposes a methodological approach for green innovation development. Regarding the mechanism of impact, this study delves into how executive myopia affects corporate innovation, focusing on the interplay between long-term investment and agency costs.

2 Theoretical Analysis and Research Hypothesis

According to high-level echelon theory, the cognitive abilities and values of managers significantly influence the formulation of strategic goals [13], which in turn shape enterprise decision-making and future development. Managerial myopia, characterized by a short-term time orientation, reflects a preference for immediate earnings [14], thereby impacting the long-term investment activities of enterprises. Corporate executives, with their abbreviated decision-making horizons, are inclined to opt for capital projects promising substantial short-term profits, consequently curtailing long-term investments to maximize short-term financial performance. Specifically, management is likely to reduce expenditures on research and development, innovation, advertising, and employee training [15], diminish

long-term asset investments like fixed assets, and also lower the depreciation and amortization expenses associated with the acquisition of long-term assets [16]. Innovation in enterprises necessitates continuous capital investment, where judicious and effective capital allocation is crucial for sustaining innovation and long-term development. Green innovation, distinct from traditional technological innovation, embodies the dual characteristics of knowledge spillover and environmental protection. This duality contributes to heightened research and development risks and increased uncertainty [17]. The significant uncertainty inherent in green innovation necessitates sustained long-term capital investment to maintain the requisite level of environmental commitment. Prior studies have indicated that firms prioritizing environmental investment demonstrate a stronger inclination and higher efficiency in green innovation [18]. Consequently, managerial myopia, by precipitating a decline in long-term investment, impairs green innovation investment within enterprises.

Managerial myopia, often driven by short-term benefit pursuit, is sometimes adopted by management as a defensive strategy to preserve their professional standing or salary, a concept referred to as ‘manager defense’. This tendency partially accounts for the prevalence of managerial myopia [19]. The origins of such myopia are twofold: internal performance pressures and external pressures stemming from investor myopia. Studies suggest that even when corporate managers are rational, they may yield to the irrational short-term interest preferences of investors, leading to short-term-oriented decision-making [20]. This focus on self-interest, often at the expense of owners’ and companies’ interests, undermines the rights and expectations of corporate shareholders and distorts the enterprise’s long-term growth strategy [21]. The root cause of this phenomenon lies in the separation of ownership and management within enterprises. Information asymmetry hinders owners from effectively monitoring managerial actions, resulting in investors unwittingly forfeiting their interests. Addressing such issues necessitates certain agency costs by the enterprise’s entrusted agents. However, far from mitigating these agency problems, managerial myopia exacerbates the conflict between investors and managers, heightening interest conflicts and escalating agency costs, thereby constraining the development of green innovation [22]. The inherently technical nature of green innovation, coupled with significant uncertainties in the research and development process, makes outcomes difficult to predict. This unpredictability inclines managers towards risk aversion and a reduction in innovation projects. Conversely, investors generally aim to maximize long-term returns. The existence of informational gaps complicates effective management supervision, leading to an intensification of agency issues that ultimately impairs the efficacy of green innovation implementation [23].

Based on the theoretical analysis, it is posited that managerial myopia acts as a significant impediment to green innovation within enterprises, primarily by elevating agency costs. Consequently, the study proposes the following hypothesis for empirical validation:

H1: Managerial myopia significantly inhibits green innovation in enterprises.

3 Research Design

3.1 Sample Selection and Data Sources

The study’s empirical investigation is based on a sample of A-share listed companies from the period 2012 to 2021. Data for this research were primarily sourced from the Guotai’An and CNRDS databases. The sample was processed and refined through a series of exclusions to ensure relevance and accuracy: financial and insurance company samples were excluded; companies with ST and PT incidents were excluded; relevant indicators were shrunk at a level of 1% both upwards and downwards.

3.2 Variable Selection

(1) Green innovation

To measure green innovation performance, scholars commonly utilize green patents [24]. This study adopts the natural logarithm of the combined total of green invention patents and utility model patents acquired in the same year as a proxy. This approach is based on the premise that the number of patents obtained more accurately reflects genuine green innovation activities compared to the number of patent applications.

(2) Managerial myopia

The Management Discussion and Analysis (MD&A) section of annual reports generally includes evaluations of past performance and discussions of future development uncertainties and trends. Following the methodology of Qiao and Xu [25], this study conducts a statistical analysis of the frequency of short-term oriented words in MD&A. The indicator of managerial myopia is derived by dividing the total frequency of these words by their proportion in the total word count and then multiplying by 100. A higher indicator value suggests greater managerial myopia.

(3) Long term investment

Long-term investment primarily encompasses capital investment in assets with a useful life exceeding one accounting year. To better capture long-run capital investment [26], this study measures long-term investment using the logarithm of the total value of long-term assets such as fixed assets and intangible assets purchased by the enterprise.

(4) Agency costs

The study selects the first type of agency cost (AC) as the variable to measure the agency cost incurred due to agency issues [27]. It is represented as the ratio of management expenses to operating income. The value of this indicator is directly proportional to the agency cost, implying a more intense conflict between owners and managers.

(5) Control variables

In line with methodologies employed by relevant researchers, internal enterprise characteristics influencing green innovation are selected as control variables. These include: asset liability ratio (Lev), enterprise age (Age), enterprise size (Size), board size (Board), audit fee (Audit), nature of property rights (PRA), return on assets (ROA), board of supervisors size (BOS), among others. Additionally, fixed effects for the statistical year (Year) and industry (Ind) are controlled for in the analysis.

The information is listed in Table 1.

Table 1. Specific measures of variables

| Variable Category | Name | Symbol |
|----------------------|---------------------------|----------|
| Dependent Variable | Green innovation | GreeInno |
| Explanatory Variable | Managerial myopia | Myopia |
| Mechanism Variables | Long term cost | LTC |
| | Agency costs | AC |
| | Asset liability ratio | Lev |
| | Enterprise age | Age |
| | Enterprise size | Size |
| Control Variables | Board size | Board |
| | Audit fees | Audit |
| | Property nature | PRA |
| | Return on Assets | ROA |
| | Board of supervisors Size | BOS |

3.3 Model Setting and Estimation Methods

In alignment with hypothesis H1 and the variables delineated previously, the following empirical model (1) has been constructed:

$$GreeInno = \alpha_0 + \alpha_1 Myopia + \alpha Controls + \sum Fixedeffect + \varepsilon \quad (1)$$

In this regression model, the dependent variable is green innovation *GreeInno*, while the independent variable is managerial myopia *Myopia*. The model incorporates fixed effects *Fixedeffect* for industry and statistical year, enhancing its robustness, internal enterprise characteristics influencing green innovation are selected as control variables *Controls*. Additionally, regression analysis is clustered at the enterprise level to account for intra-firm variations and provide more precise estimations.

4 Empirical Results

4.1 Descriptive Statistics

The descriptive statistics related to core and control variables in the empirical model are shown in Table 2.

In the analysis of variables, a notable observation is the high standard deviation between enterprise size and long-term cost (*LTC*). This variation underscores significant disparities in the sizes of listed companies and their respective levels of investment in long-term capital. Regarding the Green Innovation Index (*GreeInno*), the observed range spans from a minimum of 0 to a maximum of 6.512, with the median value being 0. This distribution indicates pronounced structural differences in green innovation efforts among enterprises, highlighting that the majority are yet to initiate substantial green innovation activities. The values for managerial myopia exhibit a maximum of 3.175 and a minimum of 0.582, with an average of 2.071. These figures suggest that management in many firms exhibits a high degree of myopia, influenced by factors such as the market environment, internal performance pressures, and individual managerial cognition and characteristics, leading to a pronounced preference for short-term returns. The standard deviation for agency cost (*AC*) is recorded at 0.397. This relatively moderate variation suggests that agency problems are a common occurrence across the board, yet the degree of agency cost does not significantly fluctuate among the listed companies.

Table 2. Descriptive statistics of variables

| Variable Name | Sample Size | Mean | Median | Standard Deviation | Min | Max |
|---------------|-------------|--------|--------|--------------------|--------|--------|
| GreeInns | 8,326 | 0.122 | 0 | 0.473 | 0 | 6.512 |
| Myopia | 8,326 | 2.071 | 2.283 | 0.628 | 0.582 | 3.175 |
| LTC | 8,326 | 17.539 | 17.574 | 1.702 | 8.934 | 25.082 |
| AC | 8,326 | 0.587 | 0.52 | 0.386 | 0.072 | 2.641 |
| Lev | 8,326 | 0.432 | 0.467 | 0.231 | 0.053 | 0.881 |
| Age | 8,326 | 1.743 | 2.104 | 0.867 | 0 | 3.126 |
| Size | 8,326 | 21.258 | 20.879 | 1.197 | 18.39 | 25.617 |
| Board | 8,326 | 2.205 | 2.093 | 0.184 | 1.569 | 2.647 |
| Audit | 8,326 | 12.769 | 12.466 | 0.78 | 12.104 | 16.258 |
| PRA | 8,326 | 0.409 | 0 | 0.485 | 0 | 1 |
| ROA | 8,326 | 0.046 | 0.041 | 0.052 | -0.239 | 0.269 |
| BOS | 8,326 | 1.238 | 1.074 | 0.265 | 0 | 2.409 |

4.2 Benchmark Model Result Analysis

The analysis of the main regression model (1) presented in this article yields the following benchmark model results, as shown in Table 3.

Table 3. Benchmark model results

| Variables | GreeInno |
|---------------------|---------------------|
| Myopia | -0.0203*** (-2.58) |
| Lev | -0.1456*** (-4.61) |
| Age | -0.0139** (-2.08) |
| Size | 0.1036*** (11.76) |
| Board | -0.0278 (-0.89) |
| Audit | 0.1027*** (6.45) |
| PRA | 0.0628*** (4.78) |
| ROA | -0.1388*** (-2.59) |
| BOS | 0.0525* (1.69) |
| Ind/Year | Yes |
| _cons | -3.5278*** (-13.46) |
| N | 25,387 |
| R ² | 0.2302 |
| Adj. R ² | 0.23 |

Note: *T* value is in the brackets; *, **, *** respectively indicate that the variable is significant at the level of 10%, 5% and 1% (The following tables are the same).

The regression coefficient for managerial myopia on enterprise green innovation is -0.0203, significant at the 1% level. This finding substantiates that managerial myopia significantly impedes the development of green innovation, thereby confirming hypothesis H1.

The study reveals that, within the current market context, business managers generally display a tendency towards shortsightedness. This inclination is evident in their decision-making and investment approaches, where there is a pronounced focus on the short-term performance of enterprises at the expense of future long-term development. Managers demonstrate myopic motivations, often overlooking green technology innovation activities that could be more beneficial in the long run. Additionally, they exhibit myopic spatial behavior, leveraging their informational advantages to make decisions that serve their personal interests, consequently impacting the progression of green technology innovation in their respective enterprises.

4.3 Robustness Test

The robustness test results are listed in Table 4.

(1) Replacing the explained variable

To ascertain the robustness of the benchmark regression model's results, we varied the explained variables for green innovation. Green innovation (GreeInno) is recalculated using the natural logarithm for Listed Companies. As indicated in Column 2 *Inno*, the regression coefficient is -0.015, with the results maintaining a significance level of 1%. This consistency confirms the reliability of the original regression model.

Table 4. Robustness test

| Variables | <i>Inno</i> | <i>GreeInno-1</i> | <i>GreeInno-2</i> | <i>GreeInno-3</i> |
|---------------------|----------------------|---------------------|----------------------|--------------------|
| Myopia | -0.0150**** (-2.58) | -0.0112** (-2.18) | -0.0913**** (-3.11) | -0.0093* (-1.81) |
| Lev | -0.1021*** (-4.11) | 0.0014(0.05) | -0.1237*** (-7.14) | 0.0031(0.12) |
| Age | -0.0153*** (-2.87) | -0.0229** (-2.27) | -0.0176**** (-5.06) | -0.0269*** (-2.79) |
| Size | 0.0813**** (11.29) | 0.0756**** (7.21) | 0.1082**** (23.65) | 0.0739**** (6.78) |
| Board | -0.0429* (-1.75) | -0.0309 (-1.28) | -0.0249* (-1.67) | -0.0285 (-1.21) |
| Aduit | 0.0826**** (6.21) | -0.0448**** (-2.89) | 0.1113**** (14.37) | -0.0156 (-1.13) |
| PRA | 0.0495*** (4.52) | 0.0141(0.71) | 0.0610**** (9.96) | 0.0179(0.91) |
| ROA | -0.0981** (-2.25) | -0.0272 (-0.63) | -0.1945**** (-4.68) | -0.0725* (-1.41) |
| BOS | 0.0353(1.46) | 0.0569* (1.81) | 0.0587**** (4.61) | 0.0522(0.71) |
| Ind / Year | Yes | Yes | Yes | Yes |
| _cons | -2.7648**** (-12.65) | -1.1337*** (-4.01) | -3.6583*** (-31.75) | -1.4277*** (-5.43) |
| N | 25,387 | 25,387 | 25,387 | 20,862 |
| R ² | 0.2056 | 0.0749 | 0.2251 | 0.0617 |
| Adj. R ² | 0.20 | 0.07 | 0.22 | 0.06 |

(2) Individual fixed effect

To address potential issues of omitted variables in the model, we employed fixed effect regression. The results, shown in Column 3 *GreeInno-1*, reveal a regression coefficient for myopia of -0.0112, significant at the 5% level. This finding suggests that the original regression model is not plagued by endogeneity problems related to omitted variables and errors.

(3) Tool variables

Given the possibility of mutual causality within the model, green innovation (GreeInno) was recalculated by grouping industry and statistical year as indicators. These recalculations were then used as instrumental variables, tested using the two-stage least squares method. The results, presented in Column 4 *GreeInno-2*, indicate that the instrumental variables passed both over-identification and under-identification tests.

(4) Propensity score matching

To mitigate potential selection bias in sample selection, propensity score matching was employed to further test the benchmark model's regression results. Based on the 50th quantile of the managerial myopia index, listed companies were divided into higher and lower myopia groups. A control group akin to the low myopia group was identified among the listed companies. The T-value of the ATT matching propensity score was -2.76, significant at the 1% level, indicating a pronounced difference between the experimental and control groups. Subsequent regression testing on the matched control group is detailed in Column 5 *GreeInno-3*. Here, the regression coefficient for managerial myopia is -0.0093, with a significance level of 10%. These results corroborate that managerial myopia exerts a discernible inhibitory impact on green innovation in enterprises. Thus, it is concluded that the original regression results are valid, even when more comparable samples are employed through propensity score matching.

5 Mechanism Test

The results of mechanism test are displayed below as Table 5.

5.1 Mechanism Effect of Long-Term Investment

In accordance with high echelon team theory, managerial short-term orientation significantly influences operational and investment decisions in enterprises. Managerial myopia, a result of this orientation, predisposes managers towards investing in short-cycle, high-return capital projects. This preference invariably leads to a reduction in long-term capital projects, such as intangible and fixed assets, as well as R&D investments, which are characterized by larger risks over an extended period. This trend distinctly counters the nature of green innovation, which is typically associated with positive externalities, high risk, and uncertainty.

To explore the transmission mechanism of “managerial myopia → reduction in long-term investment → inhibition of green innovation,” a new Model (2) was developed based on the main regression model:

$$LTC = \beta_0 + \beta_1 Myopia + \beta Controls + \sum Fixedeffect + \varepsilon \tag{2}$$

In this model, the dependent variable is *LTC*, and the independent variable is managerial myopia. Fixed effects for industry and statistical year are included, and regression is clustered at the enterprise level.

Table 5. Results of mechanism test

| Variables | LTC | AC |
|---------------------|--------------------|--------------------|
| Myopia | -0.0869***(-3.52) | 0.0034*** (3.58) |
| Lev | -0.0679(-0.56) | -0.0789***(-13.37) |
| Age | -0.2546***(-10.72) | 0.0071*** (8.02) |
| Size | 1.0347*** (36.51) | -0.0189***(-15.12) |
| Board | -0.0409(-0.43) | 0.0031(0.79) |
| Audit | -0.0452(-1.14) | 0.0103*** (6.31) |
| PRA | -0.1936***(-4.25) | -0.0063***(-3.21) |
| ROA | 1.0812*** (3.18) | -0.2973***(-22.81) |
| BOS | -0.0275(-0.39) | 0.0013(0.45) |
| Ind/Year | Yes | Yes |
| _cons | -3.2436***(-7.04) | 0.3812*** (17.58) |
| N | 8590 | 25170 |
| R ² | 0.4915 | 0.3418 |
| Adj. R ² | 0.49 | 0.34 |

The findings of Model (2), as shown in Column 2, reveal that the impact coefficient of managerial myopia on long-term investment is -0.0869, significant at the 1% level. These results corroborate that short-term management orientation markedly inhibits long-term investment.

5.2 Mechanism Effect of Agency Cost

The theoretical analysis posits that managers' pursuit of short-term interests, often unbeknownst to the owners, detrimentally affects shareholder interests, epitomizing managerial myopia. Influenced by investors' irrational preferences, managers frequently prioritize maintaining high share prices and maximizing current interests, which inadvertently diminishes the owners' rights and exacerbates agency problems resulting from the separation of ownership and management in enterprises. This dynamic escalates the agency costs borne by enterprise owners (principals), adversely affecting the development of green innovation and indirectly reducing capital investment in such initiatives.

To examine this mechanism, a Model (3) was developed based on Model (1):

$$AC = \delta_0 + \delta_1 Myopia + \delta Controls + \sum Fixedeffect + \varepsilon \quad (3)$$

In this model, agency cost (AC) is the dependent variable, and managerial *myopia* is the independent variable. The model incorporates fixed effects for industry and statistical year and conducts regression analysis clustered at the enterprise level.

The results, presented in Column 3, show a regression coefficient of 0.0034, significant at the 1% level. This finding indicates that managerial myopia substantially increases the agency costs of enterprises.

6 Research Conclusion and Enlightenment

The current research findings acknowledge the significance of agency costs in the realm of green innovation within enterprises. However, investigations from a managerial perspective remain notably sparse. To date, few scholars have systematically explored the influence of managerial myopia on enterprise green innovation. This study addresses this gap by analyzing the impact of green innovation on enterprises from a management standpoint, offering an innovative theoretical basis for fostering green innovation in the corporate sector. This approach not only enriches the existing literature but also provides a novel lens through which to view the development of green innovation strategies in enterprises.

6.1 Research Conclusion

In line with the Chinese government's commitment to fostering green development and expediting the transition to a more sustainable growth model, green innovation has emerged as a crucial catalyst in this transformation. This study, centering on the interplay between managerial myopia and corporate green innovation, develops a novel theoretical framework. Utilizing data from non-financial and non-insurance A-share listed companies from 2012 to 2021, the study examines the influence of managerial myopia within the context of long-term investment and enterprise agency costs.

The empirical analysis leads to the following conclusions:

(1) Managerial myopia is detrimental to long-term capital investment and adversely affects the long-term green innovation endeavors of enterprises. Managerial myopia results in a preference for short-cycle capital projects, leading to a reduction in long-term investments. This trend significantly hampers green innovation projects, which typically require sustained capital investment and face high levels of uncertainty.

(2) Managerial myopia escalates agency costs, further inhibiting green innovation. This issue is rooted in the separation of ownership and management, with managerial myopia exacerbating the agency problem. The ensuing conflict between owners and managers prompts a shift towards short-term gains, undermining the long-term growth and overall value of enterprises, and consequently, impeding green innovation initiatives.

6.2 Research Enlightenment

This study leads us to the conclusion that managerial myopia is a significant impediment to the advancement of green innovation. It is imperative for enterprise owners to focus more intently on the role of management behavior in fostering green innovation and to actively mitigate its negative impact on business development.

Firstly, it is crucial for enterprises to circumvent managerial myopia and self-interested actions. This involves encouraging firms to bolster their R&D expenditures. Managers should be motivated to invest more enthusiastically in long-term projects that support green innovation. The mechanism analysis from this study shows that long-term investment is a key conduit through which short-term management orientation impacts green innovation. Thus, avoiding managerial myopia, fostering a long-term oriented mindset among managers, and amplifying long-term investments are essential steps to enhance an enterprise's resilience against prolonged operational pressures.

Secondly, reducing informational asymmetry between owners and managers is paramount. Enterprises should enhance their information gathering capabilities and establish more open channels for information flow. These measures can help alleviate the conflicts between managers and owners, consequently reducing agency costs and fostering green innovation.

Thirdly, the governance structure within enterprises needs strengthening. This involves establishing robust supervisory and incentive mechanisms for managers to improve governance efficacy. Integrating equity and stock option incentives can align the interests of the enterprise more closely with those of its managers, thereby effectively addressing principal-agent problems. Managers ought to prioritize long-term development in their strategic planning to facilitate a smoother progression of green innovation initiatives.

Additionally, a synergistic approach combining government regulation and market mechanisms is necessary to bolster healthy development. In essence, to truly mitigate the impact of managerial myopia on green innovation, enterprises must not only address managerial issues but also reform their entire system. This holistic approach is essential for promoting sustainable corporate development.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

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Conflicts of Interest

The authors declare no conflict of interest.

References

- [1] Y. X. Xu, S. Y. Mao, and J. L. Li, "Enterprise green innovation with dual incentives—Synergies effect and mechanism of green loans and fiscal subsidies," *Stud. Int. Finance*, vol. 2023, no. 4, pp. 86–96, 2023. <https://doi.org/10.16475/j.cnki.1006-1029.2023.04.007>
- [2] C. C. Tan, Z. Wang, and P. Zhou, "Financial technology 'empowerment' and enterprise green innovation: From the perspective of credit allocation and supervision," *J. Finance Econ.*, vol. 49, no. 1, pp. 34–48, 2023. <https://doi.org/10.16538/j.cnki.jfe.20220519.101>
- [3] Y. L. Wang and Y. H. Zhou, "Green finance development and enterprise innovation," *J. Finance Econ.*, vol. 49, no. 1, pp. 49–62, 2023. <https://doi.org/10.16538/j.cnki.jfe.20220615.101>
- [4] J. Wang, "The impact and consequences of entrusted loans on corporate technological innovation," Ph.D. dissertation, Northeastern University of Finance and Economics, 2023. <https://doi.org/10.27006/d.cnki.gdbcu.2022.001229>
- [5] Q. F. Cai, S. Q. Lin, G. C. Wu, Y. Z. Chen, and H. H. Lin, "Anti-takeover strength, corporate R&D decision and long-term value creation," *Nankai Bus. Rev.*, vol. 25, no. 3, pp. 15–24, 2022.
- [6] C. L. Wu, J. Liu, and X. M. Huang, "Market manipulation and enterprise innovation: A model for identifying closing price manipulation based on high frequency data," *Rev. Invest. Stud.*, vol. 40, no. 9, pp. 46–66, 2021.

- [7] L. S. Xi and H. Zhao, "Senior executive dual environmental cognition, green innovation and enterprise sustainable development performance," *Bus. Manage. J.*, no. 3, pp. 139–158, 2022.
- [8] S. Xu, P. Y. Chen, and Z. Y. Wang, "How can green financial products promote firm green innovation?—A quasi-natural experiment based on green bond issuance," *Finance Res.*, vol. 2023, no. 2, pp. 80–91, 2023. <https://doi.org/10.14115/j.cnki.10-1242/f.2023.02.003>
- [9] X. Wang and Y. Wang, "Research on promoting green innovation through green credit policies," *Manage. World*, vol. 37, no. 6, pp. 173–188, 2021. <https://doi.org/10.19744/j.cnki.11-1235/f.2021.0085>
- [10] F. Tao, J. Zhao, and H. Zhou, "Does environmental regulation improve the quantity and quality of green innovation: Evidence from the target responsibility system of environmental protection," *China Ind. Econ.*, vol. 2021, no. 2, pp. 136–154, 2021.
- [11] Q. Y. Li and Z. Xiao, "Heterogeneous environmental regulation tools and green innovation incentives: Evidence from green patents of listed companies," *Econ. Res. J.*, vol. 55, no. 9, pp. 192–208, 2020.
- [12] H. B. Tian and W. W. Hao, "FDI, environmental regulation and green innovation efficiency," *China Soft Sci.*, no. 8, pp. 174–183, 2020.
- [13] Q. R. Li and H. Y. Zhai, "Does managerial myopia affect the digital transformation of enterprises?" *Finance Res.*, vol. 2022, no. 4, pp. 92–104, 2022. <https://doi.org/10.14115/j.cnki.10-1242/f.2022.04.005>
- [14] X. L. Cui, G. Gao, and L. B. Xu, "The impact of investor short-horizon on the long-term investment of companies: Based on manager catering mechanism," *J. Finance Econ.*, vol. 48, no. 8, pp. 154–168, 2022. <https://doi.org/10.16538/j.cnki.jfe.20220516.101>
- [15] B. H. Chung, D. W. Collins, and J. Z. Song, "Managerial myopia and the unintended real consequences of conditional conservatism," *J. Bus. Finance Account.*, vol. 50, no. 5-6, pp. 1060–1097, 2023. <https://doi.org/10.1111/jbfa.12675>
- [16] X. G. Wang, "How managerial myopia distorted enterprise asset allocation—Based on text analysis and machine learning," *Contemp. Econ. Manage.*, vol. 44, no. 10, pp. 40–48, 2022. <https://doi.org/10.13253/j.cnki.ddjjgl.2022.10.006>
- [17] Z. T. Zhang, Z. J. Yao, Q. Lu *et al.*, "Can overseas experience of executives promote green innovation in enterprises?" *Commun. Finance Account.*, no. 9, pp. 46–51, 2023.
- [18] K. Wang, S. L. Wu, H. Gao, and C. Y. Wang, "Research on the influence of air pollution on green technology innovation of listed companies in heavy pollution industries," *Chin. J. Manage.*, vol. 20, no. 3, pp. 400–410, 2023.
- [19] Z. C. Wu and S. Y. Li, "A research into managerial self-concern and myopia behavior—From the perspective of security investment of listed companies," *Econ. Surv.*, vol. 29, no. 1, pp. 137–141, 2012.
- [20] Y. Wang, "Research on investor heterogeneous belief and enterprise investment efficiency," *Bus. Econ.*, vol. 2018, no. 3, pp. 104–106, 2018.
- [21] J. S. Li and M. L. Zhu, "How does the cross-border behavior of high-tech enterprise R&D personnel stimulate exploratory innovation? A moderated mediating effect model," *Sci. Technol. Manage. Res.*, vol. 43, no. 3, pp. 111–121, 2023.
- [22] M. J. Chen, J. Zou, and B. Gao, "Function mechanism of foreign shareholding on innovation of Chinese listed enterprises," *Enterp. Econ.*, vol. 41, no. 11, pp. 71–81, 2022. <https://doi.org/10.13529/j.cnki.enterprise.economy.2022.11.007>
- [23] D. Zhu, Z. H. Xin, and Y. Q. Li, "The impact of stock liquidity on corporate R&D investment: The mediating effect and moderating effect of financing constraint and agency cost," *Collected Essays Fin. Econ.*, vol. 8, no. 262, pp. 73–82, 2020. <https://doi.org/10.13762/j.cnki.cjlc.2020.08.008>
- [24] Y. G. Wang and X. Li, "Promoting or inhibiting: The impact of government R&D subsidies on the green innovation performance," *China Ind. Econ.*, vol. 2023, no. 419, pp. 131–149, 2023. <https://doi.org/10.19581/j.cnki.ciejjournal.2023.02.008>
- [25] P. C. Qiao and X. B. Xu, "Overseas experience, short-termism and corporate innovation: Moderated mediation effect," *Sci. Technol. Prog. Policy*, vol. 39, no. 19, pp. 78–87, 2022.
- [26] Y. J. Li, X. W. Li, and S. H. Wang, "The impact of stock liquidity on R&D investment of internet companies from the perspective of enterprise life cycle," *J. Fin. Dev. Res.*, vol. 2022, no. 2, pp. 51–58, 2022. <https://doi.org/10.19647/j.cnki.37-1462/f.2022.02.007>
- [27] H. Zhang, "Enterprise ESG information disclosure quality and stock market performance: Based on the perspective of double agency cost," *J. Cap. Univ. Econ. Bus.*, vol. 25, no. 3, pp. 73–88, 2023. <https://doi.org/10.13504/j.cnki.issn1008-2700.2023.03.006>