Accounting and Corporate Management (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/acccm.2025.070308
ISSN 2523-5788 Vol. 7 Num. 3

A Study of the Impact of Environmental Credit Evaluation on Corporate ESG Performance

Shanquan Hu*

School of Foreign Studies, Central University of Finance and Economics, Beijing, China
**Corresponding author*

Keywords: Environmental Credit Rating; ESG Performance; Policy Guidance; Institutional Safeguards; Market-Driven; Technical Support

Abstract: This study explores in detail how environmental credit evaluation affects corporate ESG performance and its path to enhancement, firstly, clearly defining the connotation and characteristics of environmental credit evaluation and its theoretical connection with ESG, studying and analysing the principles, design dimensions and indicator system based on which the environmental credit evaluation system is constructed, and then proposing the paths to enhance corporate ESG performance from four perspectives, namely, policy guidance, institutional safeguard, market-driven and technical support. The study then proposes a path to improve corporate ESG performance from four perspectives: policy guidance through improving the environmental credit evaluation system and strengthening environmental information disclosure; institutional guarantee through improving the environmental regulatory system and optimising the incentive and constraint mechanism; market drive through playing the role of green credits and cultivating ESG investment concepts; and technological support through promoting the digital transformation of environmental monitoring and upgrading the corporate environmental management technology, which provides an excellent opportunity for the government to improve environmental governance and enhance corporate ESG performance. It provides practical options for governments to improve environmental governance and enhance corporate ESG performance.

1. Introduction

Environmental credit ratings play a key role as a tool for measuring corporate environmental behaviour, and their strong correlation with corporate ESG (environmental, social and governance) performance has attracted attention in both academia and practice. As the concept of sustainable development accelerates globally, governments are using this assessment to strengthen their regulation of corporate environmental behaviour, and they are using it as a tool to curb polluting behaviour. Investors and consumers rely on this evaluation to judge the strength of corporate sustainable development. In the context of the socialist market economy system with Chinese characteristics, it is particularly necessary to build a scientific and reasonable environmental credit evaluation system, and researchers have explored the intrinsic connection between this evaluation and the ESG performance of corporations and the path of realisation, which promotes the

acceleration of green transformation of corporations, improves the effectiveness of environmental governance, and promotes the achievement of high-quality development of the economy, and has shown important theoretical value and practical significance. This is an important theoretical value and practical significance.

2. Theoretical Foundations of Environmental Credit Evaluation and ESG

2.1 Definition of environmental credit evaluation

Environmental credit evaluation builds a scientific indicator system to guide the objective assessment and quantitative measurement of the environmental behaviour and results of enterprises, and to show the performance of enterprises in law-abiding environmental protection, pollution control and resource saving, which is reflected in objectivity, comprehensiveness and dynamism. Objectivity relies on scientific data and facts to complete the assessment, while comprehensiveness pays attention to outcome indicators such as pollution emissions and process indicators such as environmental management system and environmental protection investment. Dynamism is updated in accordance with the changes in the environmental behaviour of enterprises [1]. Drawing on international experience and taking into account national conditions, China has emphasized the cooperation between government guidance and market mechanisms, and has focused on the linkage between evaluation results and reward and punishment mechanisms, while at the same time integrating environmental credit into the overall framework of the social credit system, and has constructed a model of environmental protection integrity evaluation with Chinese characteristics, which provides substantial support for the construction of an ecological civilization [2].

2.2 ESG theoretical support

The ESG (Environmental, Social and Governance) system has transformed from an initial measurement of whether enterprises fulfil their basic social responsibilities to a framework for comprehensively evaluating the long-term sustainability of enterprises, and the relationship between environmental credit and ESG can be interpreted from three perspectives. The first condition is that environmental credit constitutes a key part of the environmental dimension in ESG, and the evaluation results directly reflect the environmental performance of enterprises [3]. The first condition is that environmental credit constitutes a key part of the environmental dimension in ESG, and its evaluation results directly reflect the environmental performance of enterprises; secondly, good environmental credit is usually positively correlated with the level of corporate social responsibility and corporate governance; and lastly, environmental credit evaluation can provide more localised and detailed environmental performance data for ESG assessment to make up for the deficiencies of the international ESG system in terms of meeting China's national conditions [4]; therefore, there is a complementary and co-promoting relationship between environmental credit evaluation and ESG evaluation, with the former focusing on environmental compliance and pollution control, and the latter on environmental compliance and pollution control. The former focuses on environmental compliance and pollution control, while the latter provides an all-round perspective of corporate sustainable development.

3. Influence mechanism of environmental credit evaluation on corporate ESG performance

3.1 Principles for the construction of the evaluation system

The construction of an environmental credit evaluation system must follow the principles of

science and systematicity to ensure that the evaluation results are objective, fair and of practical value, and that systematicity requires that the measurement cover all aspects of an enterprise's environmental behaviour, including the effectiveness of end-of-pipe management and preventive measures at the source [5]. Taking into account both short-term environmental impact and long-term sustainable development, the evaluation indicators must be logically consistent with each other to form an organic whole and prevent double counting or omission of key factors [6].

The principle of combining Chinese characteristics with international standards constitutes an important basis for the environmental credit evaluation system, which must take into account China's special national conditions and stage of development in environmental governance, reflect the national environmental policy orientation and regulatory priorities, and also draw on international advanced experience and refer to international ESG disclosure frameworks, such as the GRI Standards and the SASB Code of Safety, to ensure that the evaluation results are internationally comparable. This will ensure that the evaluation results are internationally comparable and promote the integration of Chinese enterprises into the global sustainable development system [7].

3.2 Dimensional design of the evaluation system

Environmental management dimension constitutes an important part of the environmental credit evaluation system, which is used to assess the completeness and implementation effect of the enterprise's environmental management system, including the construction of environmental management system, environmental protection investment, environmental risk prevention and control capacity, clean production implementation, etc [8]. The evaluation pays attention to the form of the system construction, but also emphasises on the actual effect of the management results, which reflects the endogenous motivation and long-term mechanism of environmental governance through the comprehensive test of the enterprise's environmental management capacity [9].The enterprise’s environmental management capabilities, when comprehensively assessed, serve as indicators of its endogenous governance momentum and long-term sustainability mechanisms.

The social responsibility dimension measures how companies fulfil their responsibilities to the public and related stakeholders in environmental protection [10]. This dimension covers environmental information disclosure and transparency, public participation, investment in environmental public welfare, and complaint handling, etc. The assessment of the social responsibility dimension encourages companies to regard environmental protection as an important social responsibility, and facilitates the interaction between companies and various sectors to build a community of environmental governance, and the corporate governance dimension focuses on the formulation of environmental decisions and the improvement of internal control, and assesses the extent to which environmental factors are embedded in corporate governance. The Corporate Governance dimension focuses on corporate environmental decision-making and internal control, and assesses the extent to which environmental factors are embedded in corporate governance. The dimension covers the organisational structure of environmental responsibility, environmental objectives and strategic planning, environmental risk management mechanisms, and environmental performance appraisal.

The information disclosure dimension focuses on the quality and standard of public environmental information, including mandatory disclosure and self-disclosure, to judge the timeliness, accuracy, completeness and comparability of information updates, as well as to examine whether the channels of information dissemination are diversified and convenient, while the sustainability dimension focuses on the long-term environmental performance and innovation capacity of enterprises, and examines their performance on emerging issues such as climate change

response, resource recycling, and biodiversity protection. The Sustainability Dimension focuses on long-term environmental achievements and innovation capabilities, and examines companies' performance on emerging issues such as climate change response, resource recycling and biodiversity conservation.

3.3 Construction of the evaluation indicator system

The design and screening of core indicators constitute a key link in the construction of the environmental credit evaluation system, which should follow the principles of science, operability and representativeness. Firstly, a pool of indicators should be constructed based on the theoretical and practical needs of environmental credit evaluation, which covers five dimensions, namely, environmental management, social responsibility, corporate governance, disclosure and sustainable development, and then the weights of the indicators and their calculation methods should be determined, so as to form a complete indicator system to ensure that the evaluation results can comprehensively and objectively reflect the environmental credit status of enterprises. The weights and calculation methods of the indicators are then determined to form a complete indicator system, so as to ensure that the evaluation results can comprehensively and objectively reflect the environmental credit status of enterprises.

Table 1: Design and Evaluation Content of the Five Dimensions of the Environmental Credit Evaluation System

Dimension name	Evaluation focus	What's covered
Environmental management dimension	Completeness and implementation effect of enterprise environmental management system	Environmental system construction, environmental protection investment, environmental risk prevention and control capacity, cleaner production, etc.
Social Responsibility Dimension	Fulfilment of corporate environmental responsibility to the public and relevant stakeholders	Environmental information disclosure, public participation, public welfare input, complaint handling, etc.
Corporate governance dimensions	Depth of environmental governance embedded in the corporate governance system	Environmental organisational structure, environmental strategic objectives, risk management mechanisms, performance assessment, etc.
Information Disclosure Dimension	Quality, timeliness and diversity of environmental information disclosure	Comprehensiveness, accuracy, standardisation of format, diversity of distribution channels of disclosures
Sustainable development dimension	Long-term environmental performance and innovation capacity of enterprises	Climate change response, resource recycling, biodiversity conservation, etc.

The construction and verification of an environmental credit evaluation model are core points to ensure the scientificity and standardization of evaluation work. As shown in Table 1, the evaluation system carries out assessments from five major dimensions through four key links: data collection, indicator calculation, comprehensive scoring, and result grading. In the comprehensive scoring stage, methods such as weighted summation and fuzzy comprehensive evaluation are used to calculate the total environmental credit score of enterprises. In the result grading stage, enterprises are divided into different credit levels such as excellent, good, general, and poor according to the scoring results. After the construction of the evaluation model is completed, empirical research is conducted for verification to test the scientificity and effectiveness of the model.

4. Exploring the Path of Environmental Credit Assessment to Enhance Corporate ESG Performance

4.1 Policy-led pathways

Improving the environmental credit evaluation system has become an important policy direction to enhance the ESG performance of enterprises. On the one hand, the top-level design needs to be strengthened, and the ecological and environmental departments should take the lead in working with the departments of development and reform, industry and information technology, and finance to formulate a unified national environmental credit evaluation standard and implementation rules, so as to ensure that the evaluation results are authoritative and comparable. On the other hand, the indicator system must be optimised, and emerging environmental issues such as carbon emission management and biodiversity protection should be included in the scope of the evaluation. At the same time, a dynamic adjustment mechanism should be constructed in accordance with changes in environmental policies and the actual situation of enterprises, and the evaluation indicators and weights should be updated regularly to maintain the system's advancement and applicability.

Strengthening environmental information disclosure requirements is another important way of policy guidance. Government departments use legislative and administrative means to clearly define the content of environmental information to be disclosed by enterprises, the frequency of disclosure, the format of disclosure, and the channels of disclosure, and at the same time, set stricter requirements for key emission units and high-influence enterprises, such as listed companies, to gradually build a mandatory disclosure system for environmental information with Chinese characteristics, and to promote the shift from selective to comprehensive and transparent disclosure of environmental information by enterprises. The government encourages enterprises to include environmental credit evaluation results in their ESG reports to provide investors, consumers and other stakeholders with more valuable decision-making references.

4.2 Institutional safeguard path

To improve the environmental regulatory system and establish an institutional foundation for the effective functioning of environmental credit evaluation, it is recommended to adopt a dual regulatory model combining routine supervision with credit-based regulation. Differentiated regulatory strategies should be implemented based on corporate environmental credit ratings. Enterprises with strong environmental credit records should benefit from reduced on-site inspection frequency and streamlined administrative approval procedures, thereby embodying the principle of incentivizing compliance. At the same time, a sound environmental monitoring system is in place to strengthen real-time monitoring of pollutant emissions to ensure that environmental data is true and complete. Strict environmental supervision encourages enterprises to regard environmental compliance as their basic responsibility and take the initiative to improve their environmental management and ESG performance.

Optimizing the incentive-disincentive mechanism for corporate environmental credit serves as the cornerstone of institutional safeguards. This entails establishing a cross-departmental and interdisciplinary joint incentive-penalty system that directly links environmental credit evaluation results to administrative licensing, government procurement, fiscal subsidies, and eligibility for awards and commendations. Such an integrated approach constructs a comprehensive credit restraint system where "one act of non-compliance triggers restrictions across multiple domains." At the same time, the environmental credit information of enterprises will be incorporated into the national credit information sharing platform and the national enterprise credit information disclosure system, so as to realise the sharing of information and mutual recognition of results with

those in the fields of financial credit, market credit and tax credit, etc., amplify the incentive and constraint effects of environmental credit evaluation, and guide enterprises to actively incorporate their environmental responsibilities into their corporate strategies and daily operations, so as to comprehensively improve their ESG performance.

4.3 Market-driven pathways

The use of green credit by financial institutions to promote enterprises to improve their ESG performance has become a market enabler, with financial institutions making credit decisions based on the results of enterprises' environmental credit evaluations, financial institutions providing differentiated services such as preferential interest rates, simplified approval processes, and increased credit limits for enterprises with good environmental credit, and regulatory authorities improving the green credit policy framework, including financial institutions' green credit business in the regulatory evaluation system, and guiding the flow of financial resources to environmentally friendly enterprises. Supervisory authorities improve the green credit policy framework, incorporate the green credit business of financial institutions into the supervision and evaluation system, and guide the flow of financial resources to environmentally friendly enterprises, forming a virtuous circle of "environmental credit - green finance - ESG enhancement".

Market-driven promotion of fostering ESG investment concepts has become another key way, and the relevant authorities need to step up the promotion of ESG investment concepts, a step that has helped raise investors' awareness of the importance of environmental credits and ESG performance. Regulators have encouraged institutional investors, especially long-term funds such as pension funds and insurance funds, to take the results of environmental credit evaluations as an important basis for investment decision-making. The policy also supports the development of ESG indexes and green index products to provide investors with more green investment tools, and the relevant parties promote the construction of an interface mechanism between the results of environmental credit evaluations and ESG ratings, so as to improve the recognition and influence of domestic environmental credit evaluations in international ESG ratings, and the capital market, with the help of price discovery and resource allocation functions, guides the flow of capital to environmentally friendly companies. The capital market, with its price discovery and resource allocation functions, will guide capital flows to environmentally friendly enterprises, creating a market atmosphere in which enterprises compete to improve their environmental credit and ESG performance. In addition, the relevant departments need to cultivate the concept of responsible consumption, prompt consumers to give priority to choosing products and services from enterprises with good environmental credit performance, and transmit market pressure through consumer behaviour to push enterprises to pay attention to environmental credit construction and ESG performance improvement.

4.4 Technical support pathways

Advancing the digital transformation of environmental monitoring establishes a technical foundation for enhancing the scientific rigor and effectiveness of environmental credit evaluation. To achieve this, it is imperative to accelerate the nationwide deployment of an IoT-based environmental monitoring network, while actively promoting advanced surveillance tools such as automated sensors, drone patrols, and satellite remote sensing. These technologies enable real-time, precise tracking of corporate pollutant emissions.Concurrently, a big data-driven environmental credit information platform must be developed to integrate multi-sectoral environmental data (e.g., from environmental protection, industry and commerce, taxation, and financial agencies), thereby constructing a holistic profile of corporate environmental conduct. Artificial intelligence and

machine learning algorithms should be employed to conduct in-depth mining and analysis of environmental datasets, identifying latent risks and predicting trends in environmental performance.To ensure data integrity, blockchain technology ought to be implemented to render environmental records tamper-proof and verifiable, thereby bolstering the credibility of credit assessments. By leveraging digital solutions to empower environmental oversight, information asymmetry can be mitigated, while the accuracy and legitimacy of credit evaluations are enhanced. Ultimately, this framework provides an objective, equitable benchmark for assessing corporate ESG performance.

Enhancing corporate environmental management technologies constitutes another critical component within the technical support framework. This involves encouraging enterprises to adopt advanced systems including Environmental Management Information Systems (EMIS), carbon emission management systems, and Life Cycle Assessment (LCA) tools to achieve digitalized, refined, and intelligent environmental management. Enterprises should be supported in implementing green technologies such as cleaner production techniques, resource recycling technologies, and pollution prevention solutions to reduce pollutant generation at source and improve resource utilization efficiency.

Furthermore, enterprises should be guided to establish IoT- and big data-based environmental risk early-warning systems to strengthen risk identification and response capabilities. Concurrently, efforts should be made to enhance environmental technology innovation platforms, foster industry-academia-research collaboration, and accelerate the translation and application of environmental technologies. Government agencies could establish special funding programs, provide technical services, and facilitate experience-sharing initiatives to help small and medium-sized enterprises (SMEs) overcome technological and financial barriers, thereby improving their environmental management standards.

Table 2: List of Paths and Specific Measures to Improve Corporate ESG Performance

Path type	Specific measures	target effect
policy guidance	Establishment of uniform evaluation standards, strengthening of information disclosure regulations and dynamic updating of evaluation indicators	Enhancing the authority of environmental credit evaluation and promoting ESG information transparency
institutional safeguards	Implementing differentiated supervision, improving incentive and constraint mechanisms, and strengthening data-sharing platforms	Establishing a fair regulatory environment, strengthening the linkage of credit rewards and punishments, and promoting the integration of environmental responsibility into corporate governance
market-driven	Implementing green credit policies, promoting ESG investment concepts and developing green index tools	Guiding the flow of financial resources to environmental protection enterprises and enhancing market recognition of enterprises with outstanding environmental performance
Technical Support	Promoting digital monitoring equipment, building environmental information platforms, introducing AI and blockchain to guarantee data authenticity, and upgrading the technical level of corporate environmental management	Improve monitoring accuracy, enhance data credibility, and help enterprises to refine environmental management.

Through technological empowerment, enterprises can achieve environmental compliance more efficiently, identify improvement opportunities with greater precision, and systematically enhance

their ESG performance—ultimately leading to stronger results in environmental credit evaluations. This creates a virtuous cycle where technological advancement and environmental credit improvement mutually reinforce each other. The pathways and specific measures for improving corporate ESG performance are summarized in Table 2.

5. Conclusions

This study systematically examines how environmental credit evaluation affects corporate ESG performance and explores the path of improvement. The study finds that environmental credit evaluation mobilises corporate ESG performance through four measures, namely, policy guidance, institutional safeguard, market drive and technical support, and that environmental credit evaluation displays the characteristics of an environmental governance tool with Chinese characteristics, and is intrinsically linked to and complementary to the internationally accepted ESG evaluation system. This study has theoretically enriched the theoretical research content of environmental credit and ESG, and provided a new perspective for the integration of the two, and the results of the study have provided decision-making references for the government to improve the environmental credit evaluation system and for enterprises to enhance their ESG performance in practice, and the future study will be in the process of exploring the correlation between the results of the environmental credit evaluation and the enterprises' financial performance, and in-depth analysis and analysis of different industries and various types of enterprises. Future research will continue to explore the link between environmental credit evaluation results and corporate financial performance, compare the differences between environmental credit and ESG performance of enterprises in different industries and ownership, and assess the prospects for the application of emerging technologies such as digital technology and artificial intelligence in environmental credit evaluation.

References

[1] Jie Sun, Di Zhang. Informal system and corporate ESG performance - based on the perspective of merchant gang culture[J]. Economic Issues,2025,(05):98-112.

[2] Han Y. Mechanism and empirical study of ESG information disclosure affecting the high quality development of enterprises--an empirical test based on electric power enterprises[J]. Foreign Economic and Trade,2025,(04):105-109.

[3] Chunmei Zheng, Yujie Ren. Can waste-free city construction enhance corporate ESG performance? --A quasi-natural experiment based on A-share non-financial listed companies[J]. Journal of Henan University (Social Science Edition),2025, 65(03):22-28+152-153.

[4] REN Junlin, DUAN Zihan, CAO Huan. Corporate ESG performance and green transformation - Evidence based on listed companies in China's textile industry[J]. Foreign Economic and Trade Practice,2025,43(02):119-128.

[5] LI Wei-Qiang, LI Xuechun, WANG Zhen. Research on the problems and countermeasures of ESG disclosure in China[J]. Mall Modernisation,2025,(10):140-142.

[6] LIU Lan, CHEN Taiping, HAN Miao. Research on the impact and role mechanism of ESG performance on corporate green technology innovation[J]. Finance Theory and Teaching,2025,43(02):1-10.

[7] Yulan Tang, et al. Corporate ESG performance and financial flexibility - based on information transparency and internal control perspectives[J]. Finance Theory and Teaching,2025,43(02):69-79.

[8] Wang Jiajia, Lv Liyao. The impact of ESG performance on corporate performance - based on moderated mediation effect[J]. Finance Theory and Teaching,2025,43(02):80-93.

[9] Wang jiangfei, Zhou Zuotao. Research on ESG disclosure of Azera Motor[J]. Mall Modernisation, 2025,(10):24-26.

[10] ZHOU Jing, WANG Kui, HU Yang. Responsibility-first trade competitive advantage: ESG performance of listed companies and corporate exports[J]. International Trade Issues, 2025,(04):141-157.