Financial Economics Research; Vol.1, No.2; 2025
E-ISSN: 3006-3663 P-ISSN: 3006-3655
DOI: https://doi.org/10.70267/9j4ppr19
Published by: Zeus Press

Optimization of Corporate Financial Management from a Green and Low Carbon Perspective

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Abstract

Nowadays, the global climate is intensifying changes with the development of human production and life, and the balance of the ecosystem itself is broken; taking adequate measures to protect the environment has become the focus of the world's attention. As a major participant in social and economic activities, enterprises' operation mode and management strategy will directly affect the sustainable development of the environment. This paper firstly introduces the value and significance of the research on green and low-carbon optimization of enterprise financial management, then stands on the perspective of green and low-carbon development to elaborate on the shortcomings of enterprise financial management, and finally gives the countermeasures to strengthen the green development of enterprise financial management, aiming to provide new development ideas for the green and low-carbon enterprise financial management.

Keywords

low carbon, financial management, environmental protection

1. Introduction

The concepts of peak carbon and carbon neutrality have frequently appeared in the public eye since their introduction, prompting more people to realize the importance of green and low-carbon development to human production and life. However, some enterprises still need strong green and low-carbon concepts, a unified and coordinated financial management mechanism, and unsound low-carbon financial management indicators, which must be solved. Enterprises must face their shortcomings, actively respond to the state's call, and explore their development path. Enterprises in financial management should enhance the green low-carbon economic concepts, improve the enterprise green development management model, and build green low-carbon enterprise financial management indicators to achieve the economic interests and environmental interests of the coordination of green development. The concepts of peak carbon and carbon neutrality have appeared frequently in the public eye since their introduction, prompting more people to realise the importance of green and low-carbon development to human production and life. However, some enterprises still have weak green and low-carbon concepts, a lack of a unified and coordinated financial management mechanism, and unsound low-carbon financial management indicators, which need to be solved. Enterprises need to face up to their shortcomings, actively respond to the call of the state, and explore their development path. Enterprises in financial management, should enhance the green low-carbon economic concepts, improve the enterprise green development management model, and build green low-carbon enterprise financial management indicators, to achieve the economic interests and environmental interests of the coordination of green development.

2. The Value and Significance of Research on Green and Low-Carbon Optimization of Corporate Financial Management

2.1 Maintaining Ecological Balance

'Green mountains are golden mountains,' and enterprises' pursuit of green and low-carbon financial management is remarkably effective in maintaining ecological balance. By implementing green and low-carbon strategies and introducing low-carbon environmental protection technologies, enterprises can reduce greenhouse gas emissions, narrow the negative impact of production activities on the environment, and mitigate the damage caused by climate change to the earth's ecosystem. Applying clean energy, such as solar, wind, and nuclear, can significantly reduce a company's reliance on traditional fossil fuels, lowering greenhouse gas emissions. Water treatment and waste recycling technologies are also necessary means for enterprises to optimize their resource utilization structure. By utilizing renewable resources, using environmentally friendly materials, and establishing a closed-loop resource utilization system, enterprises can reduce resource consumption and pollutant emissions during the production process, which helps dispose of waste and conserve resources effectively and promotes ecosystem restoration and protection. In addition, enterprises can also promote the environmental upgrading of the entire industrial chain through green supply chain management to achieve the greening of the whole chain from raw material procurement to product production, sales, and recycling, as well as to reuse resources. The green, low-carbon optimized financial management approach can efficiently use environmental resources and maintain ecological balance.

2.2 Reconciling Environmental and Economic Interests

Enterprise financial management green low-carbon optimization has unique advantages in coordinating environmental and economic interests. Traditional enterprise financial management is often centered on cost control and profit maximization. At the same time, implementing green concepts usually requires additional cost investment (Cai, 2024), and enterprises will ignore the adverse impact on the surrounding environment because of the pursuit of high profits. With the increasing global emphasis on sustainable development, enterprises have begun to re-examine their financial management strategies to coordinate environmental interests with their economic interests.

Green financial management mainly comes from the perspective of capital and careful consideration of enterprise, social, and ecological benefits to achieve the enterprise development goals of a financial management mode (Qiao, 2022). After the green optimization of the financial management mode, the enterprise can not only reduce the enterprise operating costs and reduce the waste of resources through energy saving and emission reduction but also rely on the green and low-carbon corporate image to attract more trust and support from investors and consumers, and further promote the long-term development of the enterprise. In addition to this, to protect the environment and maintain the ecology, many countries and regions around the world have enacted various types of environmental protection policies and systems, which cover a wide range of industries, including energy and chemical industry, electronics and electrical appliances, food, cosmetics and so on. Enterprises' compliance with these environmental policies will help them avoid potential legal risks, obtain government policy support and financial subsidies, and realize a win-win situation for both economic and ecological benefits.

2.3 Promoting Green Transformation of Corporate Financial Management

Enterprises that carry out green, low-carbon optimization have an essential role in promoting the green transformation of enterprise financial management. With global environmental protection awareness, more and more enterprises are beginning to realize the necessity and urgency of green transformation. Green transformation can not only help enterprises adapt to the increasingly strict environmental regulations but also enhance their market competitiveness and social responsibility. Green transformation has a variety of manifestations, including green innovation, green management, green mergers and acquisitions, green exports, etc. (Mao & Shi, 2024), green low-carbon optimization can encourage enterprises to start from these different angles, improve their driving force, enhance the internal motivation of enterprise development, play the ‘innovation offset’ effect, and reduce the cost pressure of enterprise green transformation (Wang & Chen, 2024).

Financial management is the core link of enterprise management; its green low-carbon optimization is of great significance in promoting the overall green transformation of enterprises. High-quality green transformation of enterprise financial management requires the entire enterprise to join forces and establish a green financial management system. Enterprises promote the green transformation of enterprises by increasing green investment, using intelligent manufacturing technology, and adopting reasonable financing constraints and corporate governance. Green low-carbon transformation brought about by the technological level can compensate for part of the enterprise production costs. Green transformation, in attracting the attention of all sectors of society at the same time, can also allow the enterprise to cultivate several high-quality personnel with green environmental protection awareness so that enterprises can sustain the development of the road forward.

3. Deficiencies in Enterprise Financial Management from a Green and Low Carbon Perspective

3.1 Weak Concept of Green and Low-carbon Economy

Although green low-carbon is gradually developing, the construction of green financial management concepts of enterprises still needs to improve in the operation process. Many enterprises are faced with the situation of 'high carbon trap lock' ('high carbon trap lock' is a kind of composite super-stable structure formed under the system of high-carbon science and technology, and is a common development problem faced by developing countries represented by China) (Liu, 2018), after a long period of high-carbon science and technology operation, the enterprise production concept is difficult to change in a short time. The production concepts of enterprises are complex and can change in a short time. These enterprises cannot adjust their production mode in time due to the limitations of various factors, which makes them gradually lose their advantages in the market competition.

The weak concept of the green, low-carbon economy affects enterprises' sustainable development and may make them face more significant market risks and policy pressure in the future. Some enterprises blindly pursue economic benefits and increase revenues by continuously expanding their production scale. Although they have repeatedly emphasized the importance of environmental protection in their corporate reports, they still adopt high-pollution and high-energy-consumption production methods in the actual production process and even falsify and alter their carbon emission data reports through carbon counterfeiting.2022 In March 2012 China's Ministry of Ecology and Environment notified four companies, including China Carbon Energy Investment Technology (Beijing) Co Ltd, Beijing In March 2022, China's Ministry of Ecology and Environment notified four enterprises, including China Carbon Energy Investment Technology (Beijing) Co., Ltd. and Beijing Zhongchuang Carbon Investment Technology Co., Ltd. of a series of violations such as tampering with and falsifying inspection reports, going through the motions of verification, and fictitious inspectors, etc. This phenomenon of 'saying one thing but doing another' damages the enterprises' brand image and triggers the public's questioning and dissatisfaction. Enterprise green low-carbon optimization has become an irreversible development trend; if you still adhere to the past 'high input and high production, heavy development and light protection' concept, it will only suffer the consequences; enterprises bigger and stronger will also become empty words.

3.2 Lack of Harmonized and Coordinated Financial Management Mechanisms and Standards

The management of many enterprises needs to gain awareness of the construction of a financial management system, and there needs to be a unified and coordinated financial management mechanism and standards to support the enterprise in carrying out green, low-carbon optimization. A unified and coordinated mechanism will ensure enterprises' financial planning and fund management. In the selection and implementation of green, low-carbon projects, if the lack of a scientific and reasonable management system, the implementation of the financial system is not strict, will lead to the distortion of the enterprise financial statements so that the management can not accurately judge the project's economic and environmental benefits, can not rely on the statement to make the correct decision, thus increasing the risk of enterprise investment, but also may cause the loss of funds, capital misappropriation, and other situations. In addition, a unified and

coordinated mechanism will ensure the reporting and supervision of the enterprise. In many enterprises in the project implementation process, there is a lack of adequate financial monitoring and auditing teams, simply from the staff to draw some people to monitor the enterprise. These employees have yet to undergo professional training and learning; the work can not be targeted to the company's supervision and management, the face of emergencies will be more at a loss, and incompatible positions will not be separated. The risks of financial management responsibilities are not clear. Therefore, enterprises should establish a set of unified and coordinated mechanisms and standards in financial management to ensure the effective implementation of green and low-carbon measures.

3.3 Inadequate Indicators for Low-carbon Financial Management

The need for more low-carbon financial management indicators is a significant problem enterprises face in the current process of green optimization. With the development of a low-carbon economy, the traditional financial management index system needs to improve in low-carbon, which can no longer comprehensively and accurately reflect the development of enterprises. Although some enterprises have begun to pay attention to carbon emissions, energy consumption, and other environmental factors, the financial management indicators of enterprises still have not formed a complete set of low-carbon financial indicator systems; the enterprise itself and the enterprise between the level of low-carbon development is challenging to carry out horizontal comparisons and vertical analysis. Low-carbon transformation of enterprises is a continuous process involving changes in technology, management, and other aspects, and the existing financial indicators are mostly static indicators, which usually can only reflect the past financial information and cannot reflect the changes and future development of enterprises in the process of low-carbon transformation promptly. Due to the complexity of low-carbon greening, non-financial indicators like financial indicators cannot quantify the economic benefits gained by enterprises. Although low-carbon achievements such as sewage treatment, energy saving, and emission reduction can be demonstrated visually, how to turn them into economic benefits and assess the rate of return on low-carbon investments are still issues that require careful consideration.

4. Countermeasures to Strengthen the Green Development of Enterprise Financial Management

4.1 Promoting the Concept of a Green and Low-carbon Economy

Enterprises should enhance their staff's knowledge and understanding of the green, low-carbon economy through various ways to form a favorable atmosphere of full participation. The following are a few specific measures that can help enhance enterprises' green, low-carbon concept.

4.1.1 Establishing a Corporate Green Culture

Enterprises can regularly organize training activities on the green and low-carbon economy, including knowledge of environmental protection regulations, energy saving, and emission reduction; organize staff visits to ecological protection facilities and carry out training on green production techniques so that employees can not only understand the importance of green production, but also master specific practical methods so that they can pay more attention to environmental protection in their daily work; carry out competitions on green and low-carbon knowledge, and through appropriate incentive mechanisms, such as bonuses and certificates, promotion opportunities, etc., to improve employee motivation.

4.1.2 Implementation of the Green Office Scheme

The industry can implement a green office program, starting from the working environment by purchasing energy-saving equipment and advocating paperless offices, installing intelligent temperature control systems to significantly reduce power consumption significantly, encouraging employees to travel green to reduce their carbon footprint, and installing water-saving devices to conserve water resources. For example, the low-carbon brilliant demonstration office building built by China Construction has set up a rainwater collection pool in the basement and adopted an intelligent irrigation system to reduce water consumption by about 1,700 tonnes per year and adopted the optical storage direct-soft technology to save 1.86 million kWh of electricity per year and reduce carbon emissions by about 1,027 tonnes per year (Xu, 2024).

4.1.3 Development of a Green Development Strategy

Enterprises should integrate the concept of green development into their core values and strategic objectives, continuously increase the research development, development, and innovation of green technologies, and at the same time formulate green procurement policies to give priority to environmentally friendly products and services. Take China's beverage brand, Wahaha, as an example; it combines green concepts with product design, explores cleaner design strategies, continuously carries out technological transformation for energy saving and emission reduction, builds a green supply chain, and advocates suppliers to focus on the recovery and recycling of packaging.

4.1.4 Increased Advocacy for Green Policies

Governments are now introducing many green policies to guide enterprises in strengthening the concept of a green and low-carbon economy. For example, China's National Cleaner Production Advanced Technology Catalogue (2022), Carbon Emission Reduction Support Tool, and Special Refinancing to Support Clean and Efficient Utilisation of Coal aim to promote the development of cleaner production and green finance, and the EU has put forward 14 legislative and policy proposals, including revisions to the EU Carbon Emissions Trading System (EUETS), the Renewable Energy Directive, the Energy Efficiency Directive, etc., covering the energy, industry, finance and other fields. Governments and relevant departments should intensify policy propaganda to make society realize that national forces support and guarantee green development so that the public's concept of green and low-carbon will continue to improve.

4.2 Improvement of Enterprise Green Development Management Mode

Enterprises should establish and improve green development management models to effectively implement green and low-carbon measures. This includes establishing a scientific financial evaluation system for environmental protection, strengthening monitoring and auditing mechanisms, and introducing third-party assessments.

4.2.1 Establishment of a Financial Evaluation System for Environmental Protection

A scientific, environmental, and financial evaluation system can effectively help enterprise management make decisions to ensure the project's economic benefits while considering the environmental benefits. In resource management, enterprises need to implement a collaborative governance system, use measurable environmental factor analysis, and pay attention to ecological protection indicators, environmental debt ratio, and other indicators (Lu, 2023). Enterprises should strengthen financial accounting, optimize the financial management process, and pay attention to green accounting information. The enterprise's different stages of development should be adjusted to the financial evaluation system and scientific assessment for the enterprise's financial all-round analysis by the standard of green low-carbon financial management so that the project's funds are effectively used and managed.

4.2.2 Strengthening Internal Control and Oversight and Audit Mechanisms

Enterprises must strengthen internal control and establish adequate accounting supervision and internal audit mechanisms. Many enterprises need a clearer understanding of internal control, supervision, and auditing, which can easily give rise to legal risks. Enterprises should strengthen internal control for key operations, especially in the area of funds; strictly implement the separation of incompatible positions; emphasize to employees the authority of their respective positions and operate their business by the prescribed processes; establish a professional supervision team, recruit auditing talent, and report directly to the board of directors; and adopt cross-auditing, with different departments supervising each other.

4.3 Optimising Corporate Green and Low-carbon Financial Management Indicators

Optimizing enterprise green low-carbon financial management indicators is essential to strengthen the green development of enterprise financial management. The new green low-carbon financial management and economic indicators should also increase low-carbon indicators, social benefit indicators, etc. For example, the energy consumption per unit of output value, the carbon emission per unit of profit, the proportion of carbon assets, the reuse rate of secondary resources (Wu & Yan, 2012), employee welfare, and public welfare

contribution. Enterprises must install energy monitoring equipment to monitor carbon emissions and energy consumption and cooperate with the surrounding community to help achieve corporate social benefits.

Optimizing low-carbon financial management indicators also needs to consider their dynamic nature. Enterprises should regularly update their indicators to reflect the latest progress of their low-carbon transition. In addition to this, enterprises should also strengthen the analysis and interpretation of indicators through the establishment of indicator analysis models, in-depth excavation of the enterprise's operation behind the indicators, and the use of models to predict the future data of the enterprise to provide a scientific basis for decision-making.

Integrating financial and non-financial indicators is also conducive to sound low-carbon financial management indicators. After considering the focus of different indicators, enterprises construct a unified assessment model by the ratio, which can transform qualitative indicators into visual values for comparison.

5. Conclusion

To sum up, this paper takes the optimization research of enterprise financial management under the perspective of green low-carbon as the topic, analyzes the value and significance of green low-carbon optimization of enterprise financial management from three levels of maintaining the ecological balance, coordinating the environmental interests and economic interests, and helping the enterprise's green transformation, and points out that there are mainly weak concepts of green and low-carbon economy in the enterprise's financial management, the lack of a unified and coordinated financial management mechanism and standards, and the insufficiency of the financial management indicators of low-carbon nature. Indicators are not sound in three aspects of the shortcomings and finally came up with the enhancement of green low-carbon economic concepts, improve the enterprise green development management mode, and optimize the enterprise green low-carbon financial management indicators of the three major solutions to help enterprises to achieve the green transition better, and promote the sustainable development of enterprises. It is hoped that more enterprises will take up their environmental and social responsibilities and obtain maximum benefits by protecting the environment and effectively using resources.

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Funding

This research was funded by SONG JIA, grant number GXKS2024YB014 and The APC was funded by "Research on the green development change of enterprise financial management under the carbon peaking and carbon neutrality goals"(project code:GXKS2024YB014) of Guangxi Science and Technology Normal University in 2024.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

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