

Environmental Protection Investment by Chinese Enterprises: A Literature Review

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Abstract: This article provides a literature review on environmental investment by Chinese enterprises. It summarizes the influencing factors of environmental investment by Chinese enterprises from internal factors such as property rights, equity structure, executive characteristics, and board characteristics, as well as external factors such as environmental regulations, capital markets, market competition, media and public attention. It also summarizes the effects of environmental investment by Chinese enterprises from three aspects: economic benefits, high-quality development, and opening up to the outside world, To provide inspiration for further in-depth research.

Keywords: Chinese Enterprises; Environmental Protection Investment; Influencing Factors; Investment Effects.

1. Introduction

The ecological environment is the cornerstone that supports human survival and development. Since the industrial revolution, a series of environmental problems such as climate warming, haze, and land desertification have become increasingly prominent, posing serious threats to human survival and development. In 1980, the International Union for Conservation of Nature creatively proposed the concept of sustainable development, and the concept of coordinated development of economic construction and environmental protection was gradually accepted by the world.

As one of the most populous countries in the world, China's industrialization and urbanization processes continue to accelerate, leading to excessive consumption of natural resources and intensified environmental pollution. Enterprises are the main source of environmental pollution and the main target of current environmental pollution control. Therefore, corporate environmental protection investment has attracted more and more attention in China's practical circles and academic circles.

Enterprise environmental protection investment refers to all expenditures incurred in the enterprise's production and operation activities, with the goal of sustainable development, by taking a series of measures to protect the environment, reduce environmental pollution and resource waste, including investment and investment in enterprise environmental protection facilities and systems Transformation expenditures, environmental protection technology R&D and transformation expenditures, cleaner production expenditures, pollution control expenditures, environmental taxes and fees, ecological protection expenditures and other environmental protection expenditures [1].

The current literature on the environmental protection investment of Chinese enterprises mainly focuses on the two aspects of influencing factors and investment effects. The following will be discussed from these two aspects in order to provide inspiration for further in-depth research.

2. Factors Influencing Corporate Environmental Investment

2.1. Internal Factors

From an internal enterprise perspective, existing research mainly focuses on the impact of four aspects: the nature of property rights, ownership structure, characteristics of senior executives and characteristics of the board of directors on environmental protection investment by Chinese enterprises.

Nature of property rights. Most studies believe that state-owned enterprises are more willing to invest in environmental protection than non-state-owned enterprises. Zhou Maochun and Bi Ruiqi (2022) [2] believe that state-owned enterprises will be more active in assuming social responsibilities due to more government intervention, and will also pay more in corporate environmental protection investments to play a leading role. Zhou Huinan (2019) [3] found that due to the close relationship between state-owned enterprises and the government, while enjoying more policy preferences and financial support, they should also actively assume more social responsibilities. The same is true in terms of environmental protection. Therefore, compared with Non-state-owned enterprises have invested larger amounts of environmental protection funds. Some scholars hold the opposite view. Li Yue'e et al. (2018) [4] believe that non-state-owned enterprises will increase their investment in environmental protection in order to establish a good social image. Ma Heng et al. (2016) [5] and Song Sen (2016) [6] also reached the same conclusion, believing that non-state-owned enterprises will take more active environmental responsibility in order to obtain more government subsidies and financing.

Equity Structure. Tang Guoping (2013) [1] pointed out that when a company has foreign equity participation and institutional shareholding, it will promote corporate environmental protection investment. Jiang Ximing and Xu Chenxi (2015) [7] believe that due to the obvious short-sighted behavior of shareholders and management, the shareholding ratio of controlling shareholders and management shareholdings will negatively affect the scale of corporate environmental protection investment. The research

results of Yang et al. (2019) [8] show that CEO serving as chairman of the board will intensify the opportunism of controlling shareholders, resulting in enterprises investing less in environmental protection.

Executive characteristics. and Su Chao et al. (2016) [9] studied polluting industries and found that when managers regard environmental issues as opportunities for corporate development rather than obstacles, they are more likely to implement forward-looking environmental strategies, thereby increasing their efforts in environmental protection. investments. Liu Yanxia et al. (2020) [10] pointed out that overconfident managers will overestimate their own capabilities, underestimate the environmental risks of enterprises, and lack enthusiasm for environmental protection investments, resulting in insufficient environmental investment in enterprises. Liu Yuanyuan et al. (2021) [11] found that because companies with high levels of pay stickiness can alleviate to a greater extent the overly conservative investment behavior caused by executives to avoid risks, the scale of environmental investment is larger; compared with low equity incentives For enterprises, corporate executives with high equity incentives will pay more attention to the long-term interests of the enterprise and have a higher level of environmental protection investment. Tang Liang et al. (2023) [12] believe that the political connections of senior executives make companies more likely to attract public attention, especially bear greater pressure on corporate social responsibility, which objectively promotes companies to increase investment in environmental protection. Zhang Zhengyong and Geely (2013) [13] found that entrepreneurs who are older and more experienced are more willing to abide by social order and good customs and take the initiative to assume environmental responsibilities. Li Zhao (2022) [14] found that the greater the power of executives, the easier it is to reduce the scale of corporate environmental investment due to the pursuit of short-term economic benefits and blind self-confidence.

Characteristics of the Board of Directors. Jiang Ximing and Xu Chenxi (2015) [7] found that since good board governance can optimize the fulfillment of corporate environmental responsibilities, the size of the board of directors and the proportion of independent directors will positively affect corporate environmental investment. Xie Dongming and Wang Ping (2021) [15] used the data of heavily polluting listed companies in 120 major cities in China from 2011 to 2019 as the research object and found that independent directors were motivated to promote the increase of environmental protection investment in heavily polluting companies driven by reputation protection. , the larger the number of independent directors, the more capable they are of pushing companies to increase environmental protection investments. Chen Qi and Liu Jianing (2022) [16] found that the higher the board's tolerance for failure, the more inclined it is to engage in environmental investment, a corporate activity with a higher level of risk, thereby increasing the company's investment in environmental protection funds. Wang Xiaohang (2023) [17] analyzed the data of China's A-share listed companies from 2011 to 2020 and found that the heterogeneity of board members in terms of gender, age and educational background can promote corporate environmental investment.

2.2. External Factors

From an external perspective of enterprises, existing

research mainly explores the impact of external factors on Chinese enterprises' environmental investment from four aspects : environmental regulation, media and public attention, capital markets, and market competition .

Environmental regulations. Although both the pollution paradise hypothesis and the factor endowment hypothesis believe that the intensity of environmental regulations exceeds a certain level, the benefits brought by enterprises to comply with environmental regulations cannot make up for the resulting costs, resulting in insufficient motivation for environmental protection investment [18] , but from the existing According to the literature, due to the current general lack of environmental protection investment by Chinese enterprises, the impact of the intensity of Chinese government environmental regulations on the scale of enterprises' environmental protection investment still has an " incremental " effect. Liu Yuanyuan et al. (2021) [11] pointed out that as the regulatory system becomes stricter, the illegal costs incurred by enterprises begin to be higher than the required environmental protection investment. At the same time, strict environmental regulations make enterprises have to increase environmental protection investment and transform production methods. In order to obtain the sustainable development of originally high-pollution and high-profit projects. Xie Zhihui et al. (2018) [19] also found that when companies face increasingly stringent environmental regulations, they will increase environmental protection investments to cope with high environmental fines and protect their own image. Environmental protection taxes have promoted heavy polluting companies to increase environmental protection investments. effect. Tao Lan et al. (2023) [20] used a sample of 79 heavily polluting enterprises among China's A-share listed companies from 2012 to 2020. The study found that strengthening the collection of environmental protection taxes internalized the environmental pollution costs of enterprises, and that preferential tax policies promoted enterprises' Environmental investment. Xie Dongming (2020) [21] found that local governments' increased environmental supervision can effectively improve the level of environmental protection investment of heavily polluting enterprises, and the implementation of vertical supervision can further strengthen the efficiency of local supervision. Lu Minghan et al. (2019) [22] found that loose monetary policy can improve the level of environmental protection investment of heavily polluting enterprises by adjusting management's psychological expectations and increasing external capital supply . Li Qiang and Shi Yingbo (2020) [23] pointed out that the flexible regulatory strategy of market-incentive environmental regulation fully releases the potential of the market and creates favorable conditions for the guidance and optimization of corporate environmental behavior, thereby stimulating corporate enthusiasm to increase environmental investment. .

Media and public attention. Media attention also affects the importance a company places on its reputation. Wang Yun et al. (2017) [30] believe that the higher the media attention, the more companies pay attention to their own environmental investment in order to maintain a good public image. Xu Yufang (2023) [31] based on the data of China's A-share heavy polluting enterprises from 2010 to 2019, concluded that media attention can promote enterprises to carry out environmental protection investment activities based on both the reputation mechanism and the performance mechanism.

Wu Xiuqin (2022) [32] found that the public's attention to corporate environment can not only inhibit corporate environmental violations, but also improve the company's effective use of environmental resources. Wei Meng (2022) [33] analyzed China's listed manufacturing companies from 2017 to 2020 and found that the public's attention to corporate environmental pollution issues far exceeds general accounting information. This concern has a certain impact on corporate environmental protection investments. Behavior plays a normative role, prompting companies to increase investment in environmental protection.

capital market. Tang Guoping (2013) [1] pointed out that the effective operation of the capital market can make external investors pay attention to the environmental protection investment behavior of enterprises. If the enterprise does not pay enough attention to environmental protection investment, shareholders will "vote with their feet", which may give the enterprise causing greater losses. Ding Xiaojuan (2023) [24] took China's A-share listed companies from 2011 to 2020 as a sample and found that institutional investors can improve corporate information transparency and reduce corporate agency costs, thereby promoting corporate environmental investment. Du Jianhua and Zhang Yuying (2023) [25] selected A-share listed companies in China's heavily polluting industries from 2010 to 2020 as a sample, and found that the opening of the capital market improved the level of corporate environmental investment by improving the information environment of companies and easing financing constraints. . Wu Shuchang et al. (2022) [26] pointed out when studying China's heavily polluting industries that the higher the degree of financing constraints, the more difficult it is for companies to obtain financial support for green investment from the outside, thus reducing the level of corporate environmental investment.

market competition. Li Qiang and Tian Shuangshuang (2016) [27] pointed out in their research that in industries with fierce market competition, companies will invest more environmental protection funds to maintain their good reputation and improve their competitive advantages. However, Jia Yu (2013) [28] and Lu Xin (2022) [29] reached the opposite conclusion, believing that in industries with fierce market competition, companies need to concentrate funds to control costs and expand scale, and it is difficult to bear higher risks. environmental investment activities.

3. The Effect of Corporate Environmental Investment

3.1. Impact on Enterprise Economic Benefits

The traditional school of thought believes that corporate environmental protection investment increases operating costs, thereby reducing corporate competitiveness. Some Chinese scholars have proven the traditional school's view. Xue Haitao (2016) [34] found that environmental cost expenditures have a significant negative impact on the total profits and output added value of heavily polluting enterprises. Li Zixuan (2022) [35] found through research that the environmental protection investment of paper industry enterprises is significantly negatively correlated with the current corporate financial performance, but there is a positive lag effect.

With the continued in-depth research on the economic consequences of environmental protection investment, most Chinese scholars have reached conclusions that are contrary

to the traditional school of thought. They believe that environmental protection investment can improve a company's products and processes, enhance its social reputation, and thereby enhance its competitiveness. Tang Guoping (2018) [36] analyzed listed companies in Hubei Province, China, and found that corporate environmental protection investment has a promoting effect on corporate value, and a higher level of regional economic development can strengthen this positive impact. Sun Yuzhong and Guo Hezeng (2022) [37] took 68 Chinese A-share listed metal smelting companies from 2017 to 2020 as samples. The study found that under the background that China's macro policies continue to lead the entire economic environment towards a more low-carbon and environmentally friendly environment, companies continue to Strengthening investment in environmental protection will not only enable it to obtain financial subsidies to improve the company's short-term financial performance because it conforms to the government's economic development philosophy, but can also achieve long-term financial performance by integrating green development concepts into corporate strategies. Jiang Yingbing and Cui Guanghui (2019) [38] found that environmental responsibility can increase corporate value by increasing the company's expected cash flow and reducing borrowing costs. Research by Hu Junnan and Wang Honghui (2019) [39] shows that fulfilling environmental protection obligations can help high-polluting companies obtain higher market value and share. Shan Lingbin et al. (2021) [40] found that enterprises assuming environmental responsibilities can reduce their equity capital. Xu Yangyang (2023) [41] found that for enterprises in the "Yangtze River Economic Belt" and other ecological development demonstration zones, by reducing pollution emissions, they can not only gain a good social reputation, but also promote the relationship between enterprises and the government. The relationship between enterprises can reduce the pressure from environmental regulations, thereby enhancing corporate competitiveness and improving corporate financial performance.

3.2. Impact on High-quality Development of Enterprises

With the popularization of the concept of sustainable development, more scholars have turned to measuring the effects of corporate environmental investment from the perspective of high-quality development. Liu Yaqin and Zhang Yonghong (2022) [42] proposed that the high-quality development of enterprises is a comprehensive development that combines green development, innovative development, coordinated development and other aspects. Taking China's A-share coal listed companies from 2011 to 2020 as a research sample, they found that enterprises Environmental investment activities promote the green development of enterprises through energy conservation and emission reduction, promote innovative development of enterprises by promoting the research and development of environmentally friendly products and cleaner production technologies, and convey a good corporate image through fulfilling social responsibilities to achieve coordinated development with stakeholders. Duan Wenjuan (2023) [43] used total factor productivity as a proxy variable for the high-quality development of enterprises, and based on the data of China's A-share listed companies from 2015 to 2020, analyzed and concluded that environmental protection investment can promote the high-quality development of enterprises.

3.3. Impact on Open Cooperation among Enterprises

With the needs of global economic integration and China's economic transformation and upgrading, Chinese companies have begun to deepen international openness and cooperation, and the international community, especially some developed countries, have stricter environmental protection requirements. Therefore, some scholars have studied the impact of environmental protection investment on Chinese companies' open cooperation. Influence. Tao Ran et al. (2011) [44] have shown through research that multinational companies can increase the international competitiveness of their products by being environmentally responsible, investing in low-carbon technologies and producing cleaner products. Huang Lingyun et al. (2018) [45] found that in the context of the "One Belt and One Road" initiative, for companies that assume more environmental responsibilities, international policies will provide tax support and improve the foreign investment environment, which will be beneficial to the company's foreign investment. Lu Juan (2020) [46] examined the relationship between the fulfillment of environmental responsibilities of listed companies and the export of corporate products. The study found that fulfilling environmental responsibilities can expand the export scale of corporate products. This promoting effect can be seen in highly polluting industries, state-owned enterprises, foreign countries, etc. It is more obvious in enterprises and large enterprises.

4. Summary

This article reviews the literature on environmental protection investment by Chinese enterprises and summarizes the influencing factors and effects of environmental protection investment by Chinese enterprises. Judging from the investment effects presented in the existing literature, Chinese enterprises should appropriately increase environmental protection investment to achieve sustainable development of the enterprise; judging from the influencing factors of environmental protection investment presented in the existing literature, enterprises, governments, investors, consumers, The media and other parties should work together to provide a good comprehensive environment for enterprises to invest in environmental protection and encourage enterprises to invest in environmental protection.

Future research can combine to explore the comprehensive impact of various factors on corporate environmental protection investments, and at the same time explore under what conditions corporate environmental protection investments can achieve better results, providing more reference for corporate green development.

References

- [1] Tang Guoping, Li Longhui. Research on corporate environmental investment structure and distribution characteristics - Empirical evidence from A-share listed companies from 2008 to 2011 [J]. Auditing and Economic Research, 2013, 28(04): 94-103.
- [2] Zhou Maochun, Bi Ruiqi. Research on environmental investment, equity nature and environmental performance [J]. Financial Management Research, 2022, (09): 77-82.
- [3] Zhou Huinan. Internal control, environmental policy and corporate environmental protection investment - Empirical evidence from listed companies in heavily polluting industries [J]. Accounting Communications, 2019, (06): 88-91.
- [4] Li Yue'e, Li Peiwen, Dong Hailun. Nature of property rights, environmental regulation and corporate environmental protection investment [J]. Journal of China University of Geosciences (Social Science Edition), 2018, 18(06): 36-49.
- [5] Ma Heng, Zhang Jun, Ye Ziyi. Environmental regulation, nature of property rights and corporate environmental investment [J]. Arid Area Resources and Environment, 2016, 30(12): 47-52. DOI: 10.13448/j.cnki.jalre.2016.382
- [6] Song Sen. Environmental control, equity nature and corporate environmental investment - Empirical evidence based on Shanghai and Shenzhen A-share listed companies [J]. Accounting Communications, 2016, (21): 85-87.
- [7] Jiang Ximing, Xu Chenxi. Environmental regulation, corporate governance and corporate environmental protection investment [J]. Accounting Monthly, 2015, (27): 9-13.
- [8] Yang D , Wang Z , Lu F .The Influence of Corporate Governance and Operating Characteristics on Corporate Environmental Investment: Evidence from China [J]. Sustainability, 2019, 11.
- [9] He Su Chao, Huang Xu, Chen Qing. Can managers' environmental cognition improve corporate performance - the mediating role of forward-looking environmental strategy and the moderating role of business environment uncertainty [J]. Nankai Management Review, 2016, 19(06):49-57.
- [10] Liu Yanxia, Qi Huaijin, Liu Siqin. Margin financing, managerial confidence and corporate environmental investment [J]. Journal of Zhongnan University of Economics and Law, 2020, (05): 102-112.
- [11] Liu Yuanyuan, Huang Zhengyuan, Liu Xiaoxuan. Environmental regulations, executive compensation incentives and corporate environmental investment—Evidence from the implementation of the 2015 Environmental Protection Law [J]. Accounting Research, 2021, (05): 175-192.
- [12] Tang Liang, Lu Jingnan, Jiang Haifeng, etc. Executive political connections, changes in environmental supervision models and corporate environmental investment [J]. Journal of Dali University, 2023, 8(06): 79-87.
- [13] Zhang Zhengyong, Geely. Entrepreneurs' demographic background characteristics and social responsibility information disclosure - Empirical evidence from social responsibility reports of Chinese listed companies [J]. China Population·Resources and Environment, 2013, 23(04): 131-138.
- [14] Li Zhao. Executive power, media attention and environmental investment[D]. Shandong University of Finance and Economics, 2022.
- [15] Xie Dongming, Wang Ping. Tax reduction incentives, scale of independent directors and environmental protection investment of heavily polluting enterprises [J]. Accounting Research, 2021, (08): 137-152.
- [16] Chen Qi, Liu Jianing. Research on the impact of board failure tolerance on corporate environmental investment - an investigation based on the risk-taking perspective [J]. Journal of Henan University of Technology (Social Science Edition), 2022, 38(05): 43-52
- [17] Wang Xiaohang. Research on the relationship between board heterogeneity and corporate environmental investment [J]. Business Accounting, 2023, (01): 85-89.
- [18] Leiter, Andrea M., A. Parolini, and H. Winner. Environmental Regulation and Investment: Evidence from European Industries[J]. Ecological economics, 2011,(04):70.

- [19] Xie Zhihui, Sun Yangxue, Wang Yanan. The impact of environmental regulations on corporate environmental protection investment - a panel data study based on heavily polluting industries [J]. *Arid Area Resources and Environment*, 2018, 32(03): 12-16.
- [20] Tao Lan, Peng Jing, Li Kun. Research on the impact of environmental protection tax on environmental protection investment of heavily polluting enterprises under the background of environmental regulation [J]. *Land and Resources Science and Technology Management*, 2023, 40(05): 122-132.
- [21] Xie Dongming. Local supervision, vertical supervision and corporate environmental protection investment - an empirical study based on listed A-share heavily polluting enterprises [J]. *Accounting Research*, 2020, (11): 170-186.
- [22] Lu Minghan, Xu Guanghua, Shen Yi. Monetary policy and corporate environmental investment behavior—evidence from listed companies in my country's heavily polluting industries [J]. *Economic Management*, 2019, 41(11):55-71.
- [23] Li Qiang, Shi Yingbo. Market-incentive environmental regulation and corporate environmental protection investment—considering the regulating effect of local government competition [J]. *Friends of Accounting*, 2020, (09): 51-58.
- [24] Ding Xiaojuan. Institutional investors, media attention and corporate environmental protection investment[J]. *Journal of Shanghai Lixin University of Accounting and Finance*, 2023, 35(01):89-107.DOI:10.13230/j.cnki.jrsh.2023.01.002.
- [25] Du Jianhua, Zhang Yuying. Capital market opening and environmental protection investment of heavily polluting enterprises [J]. *Accounting Monthly*, 2023, 44(09): 35-43.
- [26] Wu Shuchang, Wang Xinkai, Qu Di. Internal control quality, financing constraints and green investment - Evidence based on heavily polluting industries [J]. *Journal of Nanjing Audit University*, 2022, 19(06): 21-30.
- [27] Li Qiang, Tian Shuangshuang. Can environmental regulations promote corporate environmental protection investment? - Also on the impact of market competition [J]. *Journal of Beijing Institute of Technology (Social Science Edition)*, 2016, 18(04): 1-8.
- [28] Jia Yu. Product market competition, controller nature and corporate environmental investment [J]. *Times Finance*, 2013, (32): 218+221.
- [29] Lu Xin. Product market competition and corporate environmental protection investment[D]. *Dongbei University of Finance and Economics*, 2022.
- [30] Wang Yun, Li Yanxi, Ma Zhuang, etc. Media attention, environmental regulation and corporate environmental protection investment [J]. *Nankai Management Review*, 2017, 20 (06): 83-94.
- [31] Xu Yufang. Media attention and corporate green investment: reputation management or performance management [J]. *Accounting Communications*, 2023, (05): 48-52.
- [32] Wu Xiuqin. Government regulation, public concern and corporate environmental responsibility[D]. *Southwestern University of Finance and Economics*, 2022.
- [33] Wei Meng. Public environmental attention and corporate environmental protection investment [J]. *Cooperative Economy and Technology*, 2022, (21): 74-76.
- [34] Xue Haitao. Research on the impact of environmental cost expenditures of heavily polluting enterprises on financial performance [D]. *Northeast Agricultural University*, 2016.
- [35] Li Zixuan. Research on the impact of environmental protection investment on financial performance[D]. *Shanghai Normal University*, 2022.
- [36] Tang Guoping, Ni Juan, He Ruzhen. Regional economic development, corporate environmental protection investment and corporate value - taking listed companies in Hubei Province as an example [J]. *Hubei Social Sciences*, 2018, (06): 93-99.
- [37] Sun Yuzhong, Guo Hezeng. Will environmental protection investment affect the financial performance of metal smelting enterprises - using R&D investment as the adjusting variable [J]. *Friends of Accounting*, 2022, (16): 75-82.
- [38] Jiang Yingbing, Cui Guanghui. Can corporate environmental responsibility increase corporate value? --Empirical evidence based on industrial enterprises [J]. *Securities Market Herald*, 2019, (08): 24-34.
- [39] Hu Junnan, Wang Honghui. Comparative analysis of the economic effects of environmental responsibility fulfillment and deficiencies of heavily polluting enterprises [J]. *Journal of Nanjing Audit University*, 2019, 16(06): 91-100.
- [40] Shan Lingbin, Li Fengshan, Ding Yingyong. Can enterprises achieve a win-win situation for environmental and economic benefits by assuming environmental responsibilities? --Based on the perspective of equity capital cost[J]. *Investment Research*, 2021, 40(02):71-91.
- [41] Xu Yangyang. Environmental protection investment, technological innovation and corporate financial performance - an empirical analysis based on listed companies in the Yangtze River Economic Belt [J]. *Chinese Certified Public Accountants*, 2023, (04): 35-40.
- [42] Liu Yaqin, Zhang Yonghong. Research on the relationship between environmental protection investment, corporate governance and high-quality development of coal enterprises [J]. *Coal Economic Research*, 2022, 42(02): 81-87.
- [43] Duan Wenjuan. Research on the impact of environmental protection investment on high-quality development of enterprises [D]. *Qilu University of Technology*, 2023.
- [44] Tao Ran, Jin Rungui, Gao Zhan. Research on the environmental responsibility of multinational corporations under the background of low-carbon economy [J]. *Asia-Pacific Economy*, 2011, (03): 94-100.
- [45] Huang Lingyun, Zheng Shufang, Wang Jue. Research on the win-win cooperation mechanism of foreign-invested enterprises under the background of "One Belt and One Road" - Based on the perspective of social responsibility [J]. *Management Review*, 2018, 30(02): 172-182.
- [46] Lu Juan, Li Bin, Li He. Will environmental information disclosure promote corporate exports [J]. *International Trade Issues*, 2020, (08): 100-114.