

# The Impact of ESG Practice Indicators on Enterprise Development and Value

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**Abstract.** In recent years, the concept of ESG has aroused the attention of all walks of life. Coupled with the tendency of policy in the field of carbon peak and carbon neutrality, ESG disclosure of enterprises has a significant impact on enterprise development. In this paper, the Wind ESG rating index is used, and five automobile companies, BYD, Geely Automobile, Dongfeng Automobile, Changan Automobile and SAIC Motor, are selected as representatives. The impact of ESG performance on enterprise value is tested by case analysis and Wind ESG disclosure rating. It is found that good corporate ESG performance can improve corporate strength and value from environmental protection, corporate social governance and other aspects. The analysis shows that better ESG performance can affect the market value by adjusting accounting profit to reduce carbon emissions and so on, thereby improving the enterprise value. Further analysis shows that the index disclosed in the evaluation of ESG indicators of enterprises can also have a reverse effect on enterprises, and thus significantly improve the long-term ESG performance of enterprises. The results of this study are helpful for investors to better understand the development prospects of enterprises. At the same time, they are helpful for enterprises to promote ESG practice and disclosure, further promote the development of enterprises, improve performance and market competitiveness, and promote enterprises to embark on the path of sustainable development.

**Keywords:** ESG indicators; Enterprise value; new energy vehicles; Carbon emissions.

## 1. Introduction

In recent years, with the rapid economic development, environmental pollution has become more and more serious, and the economic development model at the cost of the natural environment is no longer compatible with the current concept of sustainable development in China. The state attaches more and more importance to the construction of ecological civilization, emphasizes the sustainable development of the economy, and promotes industrial transformation in a planned way. With China's commitment to achieving carbon peak before 2030 and carbon neutrality before 2060 made to the world at the 75th United Nations General Assembly, new energy vehicles have become an important direction for the development of China's automotive field, and China has singled out new energy vehicles as one of the seven strategic industries. In the context of the era in which the concept of green development is gradually replacing the traditional development concept, the development of ESG evaluation system, which focuses on the performance of enterprises in the three dimensions of environment, society and governance, is also becoming more and more perfect. This paper mainly studies whether there is a relationship between the ESG performance of new energy vehicle enterprises and their enterprise development and enterprise value from the perspective of ESG rating system.

ESG, an abbreviation of Environmental, Social and Governance, is a set of investment concepts and enterprise evaluation criteria different from traditional financial performance, mainly used to evaluate enterprises' actions in environmental issues, social issues and corporate internal governance issues [1]. The automotive industry needs to improve its ESG strategic planning and goal setting to better demonstrate its sustainability achievements and value.

In recent years, the impact of the automobile industry on the environment and social responsibility has been widely concerned, the automobile as an indispensable means of transportation, in the production process, stamping process, welding process, painting process will bring noise pollution,

air pollution, chemical hazards, etc., in the process of car use, the exhaust gas emitted by the car, the noise issued by the car, the car is used. And as a power fuel will cause varying degrees of harm to the environment.

There have been some practical developments in the field of ESG in automotive companies. For example, since 2020, the world's major car companies have started ESG development plans, they use recycled raw materials, practice low carbon emission reduction standards in production, and implement paperless measures in the retail sector.

Within the automotive sector, the government actively fosters the growth of the new energy automotive sector and enacts favorable regulations, including tax breaks and financial aid, for new energy automotive businesses. When compared to conventional fuel vehicles, new energy vehicles offer more benefits for the environment and can significantly cut down on pollution while in operation. The production, assembly, sales, and other links of new energy vehicles and parts are not necessarily environmentally friendly, despite the fact that new energy vehicles are more environmentally friendly than traditional fuel vehicles during their use. This is because the new energy vehicle industry encompasses many different fields, and businesses must oversee the environmental protection of the product throughout its entire life cycle. Furthermore, since the new energy vehicle sector has gained public attention, businesses in the new energy automobile industry chain still need to improve the ESG information disclosure framework and pay more attention to their own ESG performance in order to avoid creating bad ESG news and lowering enterprise value.

The existing literature on the impact of ESG indicators on enterprise development has been the focus of research by relevant scholars. For example, through the empirical test of the panel data model, Qiu and Yin believe that ESG governance has a distinct impact on the financing cost of firms, and that the aforementioned relationship is not negligible when it comes to the quality of information disclosure [2]. Using Shanghai-Shenzhen A-share listed companies as samples, the authors Zhao et al. empirically tested the dynamic impact of corporate social responsibility on the capital allocation efficiency of enterprises. They concluded that long-term disclosure could increase the capital allocation efficiency of enterprises [3]. Lin, the author, who is a research method combining theoretical analysis and empirical testing, believes that corporate social responsibility has a significant positive impact on information disclosure, and information disclosure has a masking effect on corporate social responsibility and corporate sustainable development performance [4]. Using the two-way fixed effect model, authors Zhang and Zhao examined how ESG performance affected business value and came to the conclusion that it did so significantly positively. ESG performance has a more evident role in increasing enterprise value for non-state-owned businesses, smaller businesses, and businesses in non-polluting industries [5]. The authors Li et al. empirically tested the effect of customers included in the carbon-emitting trading pilot program on the ESG performance of businesses, concluding that customers included in the program can significantly enhance the ESG performance of enterprises based on the binary supply chain relationship between enterprises and customers [6]. The association between ESG performance and firm value of renewable energy vehicle firms was examined empirically by author Qu, who also explored the mechanism of action. The findings demonstrated a beneficial connection between the midstream and downstream enterprises' enterprise value and their ESG performance in the new energy vehicle industry chain. Improving an enterprise's ESG performance primarily allowed it to strengthen its R&D capabilities, which in turn increased its enterprise value [7]. The impact of governance and environmental performance on the efficiency of investment of businesses has been empirically investigated by four writers, Gao et al. The findings indicate that while ESG performance has varying effects on over- and under-investment, it can enhance an organization's investment performance [8]. After building an assessment model based on the ESG business value evaluations system, Feng et al. discovered that the enterprise value could not be fully assessed using conventional enterprise value evaluation techniques. ESG elements have been advocated for inclusion in evaluations by numerous local and international assessment institutions, offering a fresh perspective on modern business value evaluation [9]. There are also different voices about ESG indicators in the industry. For example, Tang and Li analyzed Musk's

attack on ESG ratings and concluded that some enterprises should be prevented from exaggerating the positive impact of their products or services on the environment to reduce the risk of "greenwashing" [10]. In order to effectively supplement the actual impact of ESG practice indicators on enterprises, this article further explores the connection between ESG practice indicators, enterprise development, and enterprise value based on the disclosure of ESG indicators of typical domestic automobile enterprises. The research is based on the previously mentioned body of literature.

## 2. ESG Practice Status of Automotive Industry

### 2.1. ESG Concepts of Major Automotive Industries

With the aim to conduct a more in-depth study of the automobile industry, the analysis of the automobile industry will choose BYD, Geely Automobile, Dongfeng Automobile, Changan Automobile and SAIC Motor as representatives.

BYD consistently abides by the developmental ideology that "technology reigns supreme and innovation takes precedence", constantly breaks through the technical barriers of electric transformation of automobile enterprises, and balances the relationship between production capacity and quality, enterprise ESG and high-quality development while the sales are growing rapidly, thus improving the sustainable development ability of enterprises and becoming a leader in the field of domestic new energy vehicles [11].

Geely Auto initially revealed its worldwide ESG strategy in 2023, adopting "making the world full of Geely" as its vision for the company and setting its strategic objective as "establishing ESG preeminence in the smart electric mobility and energy service technology sector". This promotes the development of a sustainable value chain and endeavors to accomplish carbon neutrality throughout the entire chain by the year 2045.

As a benchmark enterprise in China's automobile industry, Dongfeng Motor has consistently focused on environmental conservation and fulfilling its corporate social responsibility, while progressively refining its ESG governance framework. It mainly focuses on the three technical routes of pure electric, hydrogen fuel and hybrid power, accurately develops the new energy commercial vehicle market, and creates a new energy ecosystem.

Changan Automobile will cover the entry, medium and high-end markets of new energy products, achieve multi-directional coverage of the mainstream new energy market, strive to achieve autonomy and control in key areas and key links of core technologies, adhere to user-driven, innovation-driven, and adopt the layout strategy of "pre-research generation, development generation, application generation" to accelerate the transformation to a smart low-carbon technology company.

Saic has formulated the new four modernization strategy of "electrification, intelligent networking, sharing and internationalization", actively involved in the research and development of new energy vehicles, and having completed the establishment of energy systems ranging from pure electricity and hybrid power to hydrogen fuel cells, SAIC Volkswagen unveiled the "Star Plan." This plan encompasses two primary aspects: fulfilling basic responsibility and undertaking public welfare projects, aiming to amplify the company's influence.

### 2.2. ESG Scores of Major Automobile Companies

In terms of the domestic evaluation system, in order to ensure the quality and integrity of the data, the author selected the ESG rating data published by Wind for analysis.

From the perspective of Wind, Wind ESG rating covers 5,138 enterprises in A shares, of which the number of AAA rated enterprises is the least, only 3; The number of BB rated enterprises is the largest, accounting for 49.88% (table 1).

**Table 1.** The Latest Proportion of A-share Enterprises Wind ESG Rating.

Rate	AAA	AA	A	BBB	BB	B	CCC
Quantity	3	86	512	1519	2563	435	20
Scale%	0.058%	1.674%	9.965%	29.564%	49.883%	8.466%	0.389%

From the perspective of Wind ESG rating in the past five years, domestic automobile companies still have greater room for progress; In the five enterprises' ESG rating changes in the past five years, BYD scored the highest, maintaining the rating level of A and above; Geely Auto has been rated A or above for nearly two years in the past five years (because Geely Auto is A Hong Kong stock, its Wind ESG data before 2022 is missing); Dongfeng Motor's rating fluctuated in the past five years and officially reached grade A in 2023; Changan Automobile's rating has been maintained at BBB level in the past five years, while SAIC's rating has declined slightly in five years (table 2).

In conclusion, the overall practice level of ESG in the automotive industry has been stable in the past five years, but the rating has dropped slightly. The reason may be the guidance of national policies and the emphasis of auto companies on sustainable development, but at the same time, they are faced with the increase in costs caused by the pursuit of high ESG, forcing enterprises to reduce ESG investment.

**Table 2.** The Latest Comparison of Wind ESG Score and Comprehensive Score of Representative Enterprises in the Domestic Automobile Industry.

Time Enterprise	2019	2020	2021	2022	2023	Latest composite score
BYD	AA	AA	AA	A	A	8.33
Geely Auto	/	/	/	AA	A	8.04
Dongfeng Motor	BB	BB	BBB	BB	A	6.96
Changan Automobile	BBB	BBB	BBB	BBB	BBB	6.55
Saic Motor	A	A	BBB	BBB	BBB	7.27

### 3. ESG Practice and Effect Analysis of Major Automobile Enterprises

#### 3.1. E (Environment) Practice and Effect Analysis

In terms of carbon reduction commitments, most domestic automotive industry plans are unclear and relatively low in enthusiasm, but there are a few highly motivated companies. Among the above five enterprises, only Geely Automobile and Changan Automobile have proposed decarbonization targets, but their specific targets are not clear, and they have not proposed decarbonization targets that take into account the hidden contribution to global warming, in addition, only BYD's estimated hidden contribution to global warming is 2.9°C, and the rest are 3.2°C (table 3).

**Table 3.** Carbon Reduction Commitments of 5 Representative Enterprises in the Domestic Automobile Industry.

Enterprise	Whether there is a decarbonization target	Whether there are decarbonisation targets that take into account the hidden contribution to global warming	The estimated hidden contribution of business to global warming
BYD	No	No	2.9°C
Geely Auto	Yes	No	3.2°C
Dongfeng Motor	No	No	3.2°C
Changan Automobile	Yes	No	3.2°C
Saic Motor	No	No	3.2°C

Geely Auto's greenhouse gas emissions in 2022 have slightly decreased compared with 2021. Its digital intelligent carbon management platform "Jicarbon Cloud" helps 76 Geely entities to calculate organizational carbon emissions, calculate carbon footprints for more than 100 models and thousands of parts in the Geely system, and has been applied in more than 1,500 suppliers upstream of the industrial chain. Annual management of carbon emissions of more than 100 million tons.

Adhering to the core concept of "green, development, and sustainability", BYD constructed a zero-carbon park headquarters in 2021, successfully attaining both the "ISO14064 certification" and "PAS2060 carbon neutral certification". In the park, a variety of green development measures were applied, reducing 245,681.89 tons of carbon dioxide equivalent.

Dongfeng Company carry out energy-saving and emission reduction improvement activities from all aspects of the whole value chain of automobile products according to their own conditions. Dongfeng Honda Engine Co., Ltd. invested 6 million yuan to reduce gas consumption through the method of heat recovery, and the energy saving rate reached 17.4%, reducing 1,237 tons of carbon dioxide a year.

Saic Group continues to reduce the environmental impact of production and operation, considers energy protection and emission reduction as a crucial step towards achieving the carbon neutrality goal of the enterprise, constantly improves the energy efficiency of the production process of the enterprise, and accelerates the "road to zero carbon". Total greenhouse gas emissions in 2022 will be 5.31 million tons.

It is anticipated that Changan Automobile will reach its carbon peak by 2027 and attain carbon neutrality by 2045, and reduce the carbon emission level of Changan Automobile's own brand bicycle manufacturing by 5.1% year-on-year in 2022.

In conclusion, the disclosure of greenhouse gas emissions of domestic automobile enterprises is generally vague, and most of the social responsibility reports of enterprises only describe the total amount of their emissions, which is an estimate. Therefore, domestic enterprises need to improve the disclosure of greenhouse gas emissions.

From the viewpoint of carbon emission and market value, firstly, the adjustment of the correlation between accounting profit can influence carbon emission, thereby impacting market value [12]. Indeed, when high carbon emissions suggest potential environmental liabilities in the future (indicating a greater risk), investors may reduce the valuation multiples assigned to reported earnings, ultimately resulting in a higher cost of capital for the company.

"Forced effect" refers to the phenomenon where an increase in the intensity of environmental regulation leads to higher production costs for enterprises. This, in turn, compels businesses to modify their management practices and adopt innovative technologies, with the aim of accommodating the heightened environmental regulation intensity [13]. China's environmental regulation is mainly command-and-control. In 2013, China introduced the carbon emission trading mechanism in a pioneering way, and the market-incentive environmental regulation policy began to be gradually implemented. At the macro level, the carbon emission trading mechanism is conducive to leading the transformation and development of low-carbon economy, contributing to the optimization and upgrading of regional industrial structure, and improving the innovation level of the new energy vehicle industry. At the enterprise level, the carbon emission trading pilot policy promotes the technological innovation level of enterprises, has a positive impact on the total factor productivity of emission control enterprises, promotes the green governance of enterprises, and improves the value and performance of enterprises. As for the internal carbon pricing mechanism, research revealed that this mechanism successfully decreased carbon emission intensity by 22.7% while simultaneously boosting total income by 8.1%, thereby attaining a beneficial outcome of both emission reduction and income growth.

### 3.2. S (Social) Practice and Effect Analysis

From a social point of view, BYD's charitable expenditure has increased significantly in 2018-2022, from 16.364,12 million yuan to more than 240 million yuan, and its donation funds are mainly

used for poverty alleviation, education support, and anti-epidemic disaster relief and so on. Dongfeng Group established the Dongfeng Public Welfare Fund in 2012, and from 2018 to 2021, the annual expenditure of the foundation will be more than 10 million yuan, mainly for disaster relief, education, and the cause of the disabled and public welfare. From 2018 to 2022, SAIC actively responded to the requirements of the government to fight the "precise poverty alleviation" battle, and actively carried out poverty alleviation around industrial and employment poverty alleviation, education poverty alleviation, and health poverty alleviation, and its public welfare expenditure continued to rise, from 41 million yuan to 76 million yuan. In the past five years, Changan Automobile has accumulated 268 million yuan in public welfare funds, mainly used for rural revitalization, disaster relief, health and environmental protection, science and technology education and other activities, among which, it has visited Hope Primary School for 12 consecutive years and donated 7 million yuan in total.

These companies have not only demonstrated a strong sense of social responsibility, but also enhanced their brand image and strengthened their relationships with consumers, communities and the government through donations to help the poor, education support and epidemic relief. In addition, this pro bono commitment helps attract and retain talent, as employees are generally more inclined to work for socially responsible companies. At the same time, these acts of kindness also increase the social impact of the company, enabling it to build a more positive image among investors and stakeholders, which may lead to more investment and support. In general, the practice of social responsibility of these enterprises is not only in line with the ESG concept, but also helps to enhance their market competitiveness and achieve sustainable development.

### 3.3. G (Governance) Practice and Effect Analysis

From the perspective of governance, the number of employees of SAIC has fluctuated less in five years, remaining at more than 200,000, the number of employees of BYD has risen from 2020, and the number of employees has doubled in 2021, and the number of employees of Dongfeng Motor has declined slightly from 2018 to 2021, which is generally stable. For some companies, the number of employees in some years is estimated and therefore biased. Changan Automobile report did not specify the training duration, its staff training in the report to show the main safety training, in the past three years, its participation in safety training has risen from 160,000 people to more than 200,000 people. Geely Auto organized a total of more than 4.38 million hours of employee training in 2022, and the average employee training time was more than 60 hours, an increase of about 800,000 hours compared with 2021. Byd always adheres to the people-oriented human resources policy, attaches importance to the development and training of employees, and develops an E-learning online learning platform. By 2022, 22 series courses will be developed in total, and the coverage rate of staff post training will be 100%. Dongfeng Company organized 34,223 training sessions, with 1.499 million trainees, 65.24 class hours per capita, and 83 million yuan in training expenses. The career advancement and personal development of talents are highly valued by Saic, which has devised a dual-track progression system comprising of both management rank (M) and professional level (P) for its staff. By 2022, 2.29 million people have participated in various kinds of training at all levels, and the accumulated learning hours have remained above 1 million days in the past five years.

In terms of effects, when companies integrate CSR into their business, in addition to being accountable to shareholders, they can also reap long-term benefits, including: Retain high-quality employees, improve employee standards, attract investors with social responsibility awareness, improve circulation capacity and financing capacity in the financial market. Based on a corporate social responsibility perspective, the notion of shared value creation is broadened to encompass strategic measures and day-to-day operations that bolster a firm's market competitiveness. This approach centers on pinpointing and broadening the intersections between societal and economic advancements with environmental preservation. In 2015, the United Nations unveiled the 2030 Agenda for Sustainable Development, embodying a unified aspiration and societal compact for peoplekind through its 17 Sustainable Development Goals (SDGs). Nations pursuing these SDGs must formulate tailored policies and rules, subsequently exerting pressure on enterprises to adopt

innovative business ventures or refine prevalent business strategies [14]. Hence, corporate social responsibility encompasses not just satisfying stakeholder expectations, but also elevating sustainability performance and honoring the social pact to realize all 17 SDGs.

#### 4. Summary

Amidst the rapid expansion of the global ESG investment landscape, domestic regulators, investors, and companies are placing increasing significance on ESG criteria. Consequently, a growing number of enterprises are incorporating ESG principles into critical decision-making processes, such as investments. Given this backdrop, this study chose BYD, Geely Automobile, Dongfeng Automobile, Changan Automobile, and SAIC Motor as representative cases. Through a combination of case studies and data analysis, this paper aims to assess the impact of ESG performance on enterprise value.

The results indicate that strong corporate ESG performance positively impacts corporate value from different angles, improve corporate strength from environmental protection, corporate social governance and other aspects. The analysis shows that better ESG performance can affect the market value by adjusting the correlation of accounting profit, thus improving the enterprise value. Further analysis shows that the index disclosed in the evaluation of ESG indicators of enterprises can also have a reverse effect on enterprises, and thus significantly improve the long-term ESG performance of enterprises. Drawing from the aforementioned research findings, this paper puts forth the subsequent suggestions: ESG practices and performance enhancement should be noticed by enterprises.

From the environmental point of view, automobile companies should actively implement the dual-carbon goal, increase recycling water consumption, reduce energy consumption density, and reduce waste emission and greenhouse gas emission density.

From the perspective of social responsibility, automobile enterprises ought to give heed to the rights and interests of both their employees and consumers, protect employees' salaries, five insurance and one fund, increase employees' participation time in public welfare activities, and reduce the number of customer complaints and employee turnover rate. For employee compensation, enterprises should take the principle of fairness as a principle, timely adjust the proportion of high salary in revenue, CEO compensation and allowances, hourly wage ratio of male and female executives, etc., which is not only contributes to the stable development of enterprises and enhance their resilience against risks, but it also fosters the progress of the country and society.

From the governance point of view, automobile enterprises must prioritize the establishment of integrity and implement internal anti-corruption measures. Furthermore, it's worth noting that the ESG initiatives within China's automobile industry are still in the early phases of strategic development and have not evolved into a comprehensive system. Therefore, Chinese automobile enterprises should continue to improve the ESG management process and system, incorporate it into the company's strategic planning and daily operation management, clarify ESG KPI and responsible person, incorporate relevant indicators into the performance appraisal system, and strengthen the role of the board of directors. Clarify the responsibilities and powers of the Board in relation to ESG.

Although this paper takes a typical automobile enterprise as an example and uses case analysis to understand the impact of ESG indicators on enterprise development and enterprise value to a certain extent, there are still some shortcomings, mainly reflected in the failure to use econometric regression model to test the case analysis results. Further research can be conducted in the follow-up research process.

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