The Impact of ESG Performance on Corporate's Financial Performance: Evidence from China's Automobile Manufacturing Industry

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Abstract. Corporate's environmental, social, and governance (ESG) ratings, as an emerging indicator of corporate's ESG performance, have attracted the attention of many investors and institutions. Therefore, many companies are actively enhancing their ESG performance to show their fulfillment of social responsibility. However, corporates invest their money on improving ESG performance instead of necessary expenditures. Does the investment worth it? This paper takes three important companies in China's automobile manufacturing industry as examples, lists the companies' ESG performance from multiple aspects, and collects sufficient financial indicators to reflect corporate's financial performance. Result shows that the increase in corporate ESG performance will lead to a decline in overall corporate performance in the short term, but it will have a positive effect on the long-term financial performance of the corporation. Companies which aim for improving ESG performance will gain the recognition of investors and benefit the long-term growth of the corporation, for it is a correct understanding and practicing of social responsibility. This conclusion can be extended to China's automobile manufacturing industry and provide an example for other companies in the industry.

Keywords: ESG Performance; Corporate Financial Performance; Sustainable Development.

1. Introduction

ESG investment refers to the process in which investors incorporate environmental, social, and governance factors into the corporation's evaluation criteria when making decisions. ESG investing represents the progress of social concepts and people's concern for sustainable development. In the past, as long as a company could profit, keep its stock price rising or pay dividends, it would be considered a worth-investing company, even though it may have polluted the water sources of cities and put hard pressure on its own employees. The lopsided evaluation standards will cause corporations to generate greater negative externalities in pursuit of their own interests, causing irreparable losses to the earth and mankind. In recent years, investors' judgment of whether a corporation is good or not is no longer limited to the corporation's profitability and financial status. On top of that, whether the corporation is contributing to reduce greenhouse gas emissions, whether it is giving workers legitimate rights and protections, whether it is effectively fulfilling its obligations to the country and so on, are in the consideration of investors as well. These behaviors will be disclosed on corporations' Corporate Social Responsibility (CSR) report. More ESG disclosure represent corporations' investment for better ESG performance, thus significantly attract more investors [1]. However, as corporations invest for their ESG performance. Whether these investments lead to an increase of corporate's financial performance is what this paper focus on. Based on multiple benefits of fulfilling ESG responsibility. The number of corporations willing to disclose their ESG data has surged from fewer than 20 in 1990 to more than 9000 in 2016 [2].

For Chinese corporations, in addition to their own endogenous motivation to improve ESG performance, the Chinese government also emphasizes the sustainable development of corporations. In The Fourth Session of the Twelfth National People's Congress, the 13th Five-Year Plan was passed. This plan particularly emphasizes national environmental protection. In the same year, the Chinese government issued the 13th Five-Year Ecological Environmental Protection Plan. This document forced listed companies in Mainland China to disclose environmental protection information.

Otherwise, it will be punished according to the law [3]. Listed companies in China thus are more motivated to enhance their ESG disclosure and ESG performance.

Many papers studied the relativity between corporate's ESG performance and its financial performance. Research showed that when corporations' ESG disclosure is increasing, which usually indicate a better ESG performance, their financial performance tends to improve as well [1, 4-6]. Some research believed that this positive relation only presents in the long run [7]. Moreover, the influence of ESG performance on financial performance is significant for large-scale companies rather than small-scale companies [8]. From a perspective of firm life cycle, ESG performance can significantly improve corporate performance at all life cycle stages, especially when the corporate is in the growth stage [9]. Although most papers found positive relations between ESG performance and corporate's financial performance, there were also papers declare that ESG-related behaviors are not significantly positively or negatively related to corporate's financial performance [10, 11].

Furthermore, numerous studies have explored the influence of corporate ESG performance on firm value, encompassing assessments of financial performance. Research has identified a notably positive correlation between ESG performance and firm value. [12]. others investigated within firms from Chinese manufacturing industry and resulted in the same conclusion [13]. Furthermore, research found that performance of social and governance factor is positively related to firm value while performance of environment factor is not [14].

The Chinese automobile manufacturing industry is one of the biggest car manufacturing in the world, in which comprehensively include ESG factors and is an important part of Chinese industry. As a result, this paper starts from the dimension of Chinese automobile manufacturing industry. This paper obtains China's 2023 passenger car retail sales rankings from the China Passenger Car Association (CPCA) [15] The author selected the top 3 companies which should also be listed companies on the A-share. The purpose of selecting 3 companies instead of 1 is to make the research results more representative, so as to provide reference for other companies in the industry and even other industries.

Figure 1 shows the top 10 manufacturers in Mainland China's passenger car retail market in 2023. The author notices that Faw Group and Gelly Auto are not listed in Mainland China, SAIC-VW and SAIC-GM belong to the listed company SAIC Motor. Therefore, this paper selects three automobile groups, BYD, CHANGAN Automobile (hereafter called CHANGAN) and SAIC Motor (hereafter called SAIC), as representatives of China's automobile manufacturing industry.

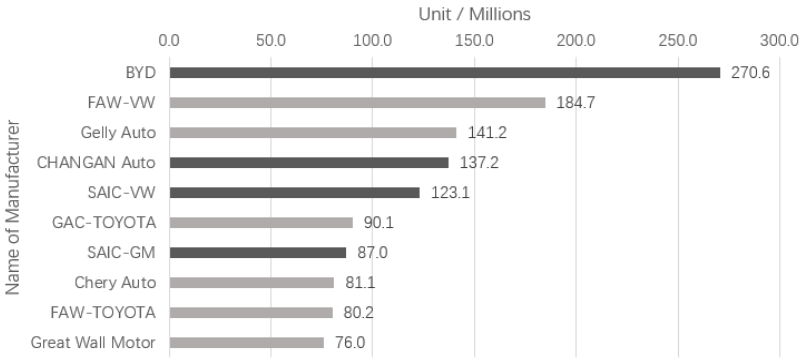


Fig 1. Top 10 Manufacturers in Mainland China's Passenger Car Retail Market in 2023. Source: http://www.cpcaauto.com/.

To provide a comprehensive understanding of the relationship between corporate ESG performance and financial performance, the author gathered pertinent information from various perspectives. The disclosure of corporations' achievement towards ESG factors come from the corporation's social responsibility report. In order to fairly compare ESG performance among different corporations.

Since corporate ESG performance is difficult to quantify and don't have a unified standard yet. Many institutions have launched their own ESG rating standards. Well-known ESG rating agencies include SynTao Green Finance, FTSE Russell, Wind, SNSI, etc.

There are two decisive aspects about the selection of ESG rating data. Firstly, some institutions report ratings while others report scores. Since this paper don't compare ratings between different institutions, the author selects both institutions using ratings and scores. Secondly is the rating's availability of different institutions. This paper mainly discusses ESG ratings of specific corporations between 2017 and 2024. The source of ESG rating data is Wind Database. Some corporation might not be included in certain institution or certain period of time.

This paper obtains ESG ratings and scores from SynTao Green Finance and FTSE Russell as the ESG performance level of the corporation.

As for financial performance, this paper calculates financial indicators from the corporation's financial statements. These financial indicators are divided into four dimensions: profitability, solvency, operating ability, and development ability. The financial statements are extracted from corporations' annual report.

After the data and index had been collected and calculated. This paper will try to explain the relationship between them. If corporations' increase in ESG performance will cause the corporations' financial performance to raise. A positive relationship between their ESG ratings and financial index should be observed. Otherwise, a lack of relativity or a negative relationship represent there's no positive relationship.

2. ESG Rating System

2.1. Introduction to ESG Rating System

ESG ratings serve to enhance the comprehension of financial institutions and investors regarding the ESG performance of the corporations in which they invest, thus help investment institutions to make investment decisions.

Drawing from extensive long-term research on ESG factors, SynTao Green Finance introduced the ESG rating system in 2015 and created China's earliest ESG database for listed companies. SynTao Green Finance's ESG ratings cover domestic listed companies in China, Hong Kong listed companies in Southbound Trading, etc. The FTSE Russell ESG score utilizes an exposure-weighted average approach, prioritizing the most significant ESG incidents by assigning them the highest weighting. FTSE Russell's ESG scores and data models define unified rules for evaluating companies, thereby bringing a quantitative database for corporation's ESG performance.

This paper will introduce SynTao Green Finance's ESG rating standards as an example.

2.1.1. Rating criteria for environmental factors

The environmental indicator mainly measures two aspects. One is risk exposure, which examines the risk of companies in protecting the environment caused by distinguish features of the industry. The other one is risk management capabilities, which examines how enterprises deal with environmental risks and their financial performance. The environmental factors of SynTao Green Finance include five substantive topics: environmental policy, energy and resource consumption, pollutant emissions, addressing climate change and biodiversity.

2.1.2. Rating criteria for social responsibility factors

The social indicator mainly measures the fulfillment of social responsibilities of enterprises to employees, customers, communities, rural revitalization and other stakeholders during production activities. Including enterprise employees, suppliers and the community in which they live, etc. SynTao Green Finance's social responsibility factors include six substantive topics: employee development, supply chain management, customer rights and interests, product management, data security and community.

2.1.3. Rating criteria for corporate governance factors

The corporate governance indicators mainly measure how the enterprise's decision-making and balances technique will affect its sustainable operations. There are 2 aspects. The first is to balance

the distribution of responsibilities and rights between executives in the corporation. The second is the approach to coordinate the interest between the corporation and all stakeholders. The environmental factors of SynTao Green Finance include three substantive topics: governance structure, business ethics, and compliance management.

3. Overall ESG Performance in the Automobile Manufacturing Industry

Since the 2023 social responsibility reports of some corporations have not been released as of the final draft, this paper sorted out the changes in environmental, social, and corporate governance factors of each corporation from 2017 to 2022, as well as the corporation's fulfillment of ESG related responsibilities in 2022, will be introduced in below.

3.1. Environmental Performance in the Automobile Manufacturing Industry

3.1.1. BYD's environmental factor performance

In terms of pollutant emissions. As a committed champion of environmental preservation, BYD endeavors to reduce its own environmental footprint while aiding the community in lowering energy usage through the production of environmentally friendly goods. Table 1 shows part of BYD's pollution exposure, indicating that BYD consistently assesses greenhouse gas emission figures and collaborates with external agencies for carbon emission verification, all the while enhancing its own greenhouse gas management practices. Through bolstered energy management, encouraging energy-saving renovation and reducing pollution emissions, BYD has been making persistent efforts to reduce its fossil energy consumption and CO_2 emissions.

Table 1. BYD's Environment Factor Disclosure.

Pollutions	2017	2018	2019	2020	2021	2022
Scope 1 Greenhouse Gas Emissions (ton/a)	/	/	/	315,610	550,932	931,916
Total Greenhouse Gas Emissions (ton/a)	/	/	/	4,145,179	5,219,112	8,061,970
Total Gas Emissions (10,000m^3/a)	4,154,794	6,271,386	4,938,659	4,777,096	8,990,645	9,614,336
Total Industrial Sewage (ton/a)	4,187,227	4,933,653	4,573,653	4,003,635	3,955,638	5,838,902

Source: BYD's Social Responsibility Report

3.1.2. CHANGAN's environmental factor performance

In terms of green manufacturing. As shown in Table 2, in 2022, CHANGAN produced 162.65 tons of Chemical Oxygen Demand (COD) Emissions, a year-on-year decrease of 20.2%, 6.77 tons of ammonia nitrogen emissions, a year-on-year decrease of 34.7%, 116.29 tons of volatile organic emissions, a year-on-year decrease of 4%, and 17.84 tons of sulfur dioxide emissions, a year-on-year decrease of 1.8%. These data are all decreasing, which represents CHANGAN's active measures in green manufacturing.

Table 2. CHANGAN's Environment Factor Disclosure.

Pollutions	2021	2022
Total COD Emissions (ton/a)	204.04	162.65
Total Ammonia Nitrogen Emissions (ton/a)	10.37	6.77
Total Volatile Organic Emissions (ton/a)	121.17	116.29
Total Sulfur Dioxide Emissions (ton/a)	18.18	17.84

Source: CHANGAN's Social Responsibility Report

3.1.3. SAIC's environmental factor performance

Firstly, in terms of energy and resource consumption. SAIC continues to reduce the impact on the environment during manufacturing and operations. As shown in Table 3, SAIC has disclosed its total energy consumption for many consecutive years, attaches great importance to energy conservation and emission reduction issues, and continuously improves the energy efficiency of the company's production process. It is obvious that although SAIC's total energy consumption has increased by 46.9% in six years, total greenhouse gas emissions and carbon intensity per passenger vehicle are both on a downward trend. In particular, carbon intensity per passenger vehicle dropped by 43.1%. This indicator can better illustrate the company's efforts in energy conservation and emission reduction when the company's total energy consumption increases due to expansion.

Secondly, in terms of energy management. During the reporting period, SAIC comprehensively strengthened the construction of its environmental protection system. It is mainly reflected in four aspects: environmental testing plan, environmental emergency mechanism, environmental information disclosure, and energy efficiency management platform.

Thirdly, in terms of green commuting. SAIC has helped create Shanghai's first application that prioritizes recommending green commuting to users. With its intelligent trip planning function, users can not only generate optimal travel plans based on actual needs, but also earn green points by using public transportations. Users can exchange green points into real rights and interests. SAIC uses this app to advocate green commuting, and also strengthens its relationship with users.

Table 3. SAIC's Environment Factor Disclosure.

Pollutions	2017	2018	2019	2020	2021	2022
Total Energy Consumption (tons of standard coal/a)	1,395,000	1,397,000	1,266,000	1,193,000	2,020,000	2,050,000
Total Greenhouse Gas Emissions (ton/a)	6,160,000	5,750,000	5,240,000	5,020,000	5,210,000	5,310,000
Carbon Intensity Per Passenger Vehicle (ton/a)	0.88	0.93	0.85	0.92	0.44	0.50

Source: SAIC's Social Responsibility Report

3.2. Social Performance in the Automobile Manufacturing Industry

3.2.1. BYD's social factor performance

Firstly, in terms of supply chain management. BYD implements localized procurement and selects nearby suppliers. By 2022, BYD had established partnerships with over 11,000 suppliers worldwide. In response to rising demand for passenger vehicles, batteries, rail components, and other sectors, BYD has expanded its manufacturing presence across numerous locations in recent years.

Secondly, in terms of employee management and employee's mental healthcare. As shown in Table 4, the number of BYD employees has generally increased in recent years, and the labor contract signing rate has remained at 100%.

Thirdly, as shown in Table 4, BYD actively supports China's rural revitalization and has invested financial support for many years

Table 4. BYD's Social Factor Disclosure.

	2017	2018	2019	2020	2021	2022
Employment						
Total Number of Employees	220,000	220,152	229,154	224,475	288,186	570,060
Labor Contract Signing Rate	100%	100%	100%	100%	100%	100%
Charitable Donations						
Donations (RMB Ten Thousand/a)	1,020	1,636	1,125	2,190	4,801	8,629
Rural Revitalization (RMB Ten Thousand/a)	/	/	/	463	329	756

Source: BYD's Social Responsibility Report

3.2.2. CHANGAN's social factor performance

As shown in Table 5, in terms of employee management, CHANGAN maintains the labor contract signing rate and social insurance coverage rate at 100% all year round to effectively protect the interests of employees. Furthermore, in alignment with strategic transformation requirements, the company has augmented its pool of talent in key areas such as new energy and vehicle development, culminating in the training of 802 strategic talent reserves. CHANGAN also invests tens of millions in safety production every year.

The second is contribute to rural revitalization. CHANGAN conscientiously follows the directives of the Group Company and local governments. As shown in Table 5, CHANGAN has made huge investments in poverty alleviation and rural revitalization.

Table 5. CHANGAN's Social Factor Disclosure.

	2017	2018	2019	2020	2021	2022
Employment						
Total Number of Employees	89,978	89,978	69,773	40,298	42,444	42,984
Labor Contract Signing Rate	100%	100%	100%	100%	100%	100%
Social Insurance Coverage Rate	100%	100%	100%	100%	100%	100%
Employee Safety						
Safety Production Cost Investment (RMB ten thousand/a)	4,200	3,809	3,695	5,230	4,469	5,373
Charitable Donations						
Poverty Alleviation (RMB ten thousand/a)	3,667	3,171	3,190	2,866	/	/
Rural Revitalization (RMB ten thousand/a)	/	/	/	1,200	1,070	1,060

Source: CHANGAN's Social Responsibility Report

3.2.3. SAIC's social factor performance

Firstly, in terms of employee management. As shown in Table 6, SAIC also attaches great importance to protecting the basic rights of employees. In addition, SAIC supports the equal development of employees from different backgrounds and groups, hires employees of different ethnics. The company cares about its female employees and has formulated a "Special Collective Contract for Female Employees" to effectively protect the basic rights and interests of female employees.

Secondly, in terms of strategic partnership cooperation. In 2022, SAIC-GM behold the important milestone of the company's 25th anniversary. Relying on the solid foundation formed by SAIC and General Motors Company (GM) over the past 25 years of cooperation, SAIC-GM will innovate around electrification and intelligence. By 2025, investment in electrification will exceed 50 billion yuan. More than 10 domestic models will be launched based on the Ultium platform.

Table 6. SAIC's Social Factor Disclosure.

	2017	2018	2019	2020	2021	2022
Employment						
Total Number of Employees (thousand people)	180	218	216	205	207	216
Labor Contract Signing Rate	100%	100%	100%	100%	100%	100%
Charitable Donations						
Total Donations (RMB Ten Thousand/a)	3,000	4,100	3,700	6,000	6,400	6,400

Source: SAIC's Social Responsibility Report

3.3. Governance Performance in the Automobile Manufacturing Industry

3.3.1. BYD's corporate governance factor performance

Firstly, in terms of intellectual property protection. By 31st December 2023, BYD has collectively applied for 31,908 patents in China (including 15,573 inventions, 13,386 utility models, and 2,570 appearance designs), along with 7,855 patents overseas. Within China, 23,260 patents have been granted. As shown in Table 7, in the past six years, the number of new patent authorizations at home

and abroad has increased year by year, which represents BYD's emphasis on and protection of intellectual property rights.

Secondly, in terms of corruption control. In cases where employees breach integrity and discipline, BYD will terminate their employment contract in full compliance with established rules and regulations. If the circumstances are suspected of illegal crimes, BYD will resolutely transfer them to the judicial authorities for processing. As shown in Table 7, in 2022, a total of 167 individuals underwent investigation for acts of dishonesty or significant violations, resulting in the conclusion of 4 corruption lawsuits.

Table 7. BYD's Governance Factor Disclosure.

	2017	2018	2019	2020	2021	2022
Patents						
Patents Licensed (annually)	1,640	1,943	2,215	2,231	2,634	3,704
Anti-Corruption						
Number of Closed Corruption-Related Lawsuit (annually)	/	/	/	1	2	4

Source: BYD's Social Responsibility Report

3.3.2. CHANGAN's corporate governance factor performance

In terms of protecting the rights and interests of shareholders. During 2022, CHANGAN convened 5 shareholders' meetings, 19 board of directors' meetings, and 5 supervisory board meetings, collectively deliberating and approving a total of 104 resolutions. CHANGAN diligently considered the views and requests of shareholders, particularly those of small and medium-sized shareholders. In conjunction with the company's capital strategy, CHANGAN executed a cash dividend payout of 50% and issued bonus shares, which satisfied their shareholder and received praise from the capital market.

3.3.3. SAIC's corporate governance factor performance

Firstly, in terms of protecting shareholders' rights and interests, as shown in Table 8, SAIC actively holds shareholders' meetings, board of directors' meetings and supervisory board meetings. To protect the rights and interests of investors.

Secondly, SAIC attaches great importance to intellectual property protection. As shown in Table 8, during the reporting period, SAIC completed 3,165 patent authorizations, and the number of patent authorizations is increasing every year, which also represents the capability improvement of SAIC's Research and Development (R&D) team.

Thirdly, SAIC pays attention to product quality and has disclosed the number of total product certificates and quality management system certificates for six consecutive years.

Table 8. SAIC's Governance Factor Disclosure.

	2017	2018	2019	2020	2021	2022
Patents						
Patents Licensed (annually)	/	2,604	2,268	2,482	3,662	3,165
Certificates						
Total Product Certificates	5,109	5,267	5,417	5,269	5,456	5,657
Quality Management System Certificates	457	464	443	451	441	
Company Goverance						
Shareholders Meeting (annually)	/	/	/	2	1	1
Directors Meeting (annually)	/	/	/	7	11	6
Supervisors Meeting (annually)	/	/	/	5	9	3

Source: SAIC's Social Responsibility Report

3.4. Compilation and Analysis of ESG Ratings of Above Corporations

It can be seen from Tables 9 and 10. The overall ESG ratings and scores of these three Chinese automobile manufacturing corporations have shown an upward trend from 2018 to 2023. Among them, BYD has the most stable growth trend.

After sorting out the ESG responsibility fulfillment of the above three corporations and the ESG performance scores. The author believes that the ESG performance of China's automobile manufacturing industry has made significant progress in recent years. This is because of the correct guidance of China's 13th Five-Year Plan and the great intention for corporates to fulfill ESG responsibility.

Table 9. FTSE Russell ESG Comprehensive Score.

	2024	2023	2022	2021	2020	2019	2018
BYD	2.5	2.3	2.3	2.1	2.1	2.1	/
CHANGAN	1.5	1.3	1.3	1.4	1.4	1.4	0.5
SAIC	1.5	1.5	1.3	1.4	1.4	1.4	/

Source: Wind Database

Table 10. SynTao Green Finance ESG Comprehensive Score.

	2024	2023	2022	2021	2020	2019	2018	2017
BYD	A-	B+	B+	B+	B+	B+	B	B-
CHANGAN	B+	B	B-	B-	B-	C+	C+	C+
SAIC	B+	B	B-	B-	B+	B	B	B+

Source: Wind Database

4. Financial Performance Development and Its Relationship with ESG Performance

In order to comprehensively measure the corporate's financial performance. This paper evaluates it through the calculation and listing of financial indicators. Specifically, the author extracted financial data from the financial statements in each corporation's annual report from 2017 to 2023, and calculated a total of 9 corresponding financial indicators from the four dimensions of profitability, solvency, operating ability, and development ability. The following will show the corporate's financial performance. From these four aspects respectively, which can eventually extend to the financial performance development of China's automobile manufacturing industry.

4.1. Corporate profitability

Profitability pertains to a corporation's capacity to generate earnings, also described as its ability to appreciate capital. The author calculates two indicators, Return on Assets (ROA) and Return on Common Stockholders' Equity (ROE), from each corporation's financial statements as a reflection of corporate profitability.

Overall, the ROA and ROE of China's automobile manufacturing industry show a trend of falling and then rising (see Table 11). This trend is not only related to the economic situation, but also to the large amount of money invested by automobile manufacturing corporations in the early stages of ESG performance enhancement. In 2016, China's 13th Five-Year Plan was launched, and the emission reduction targets have attracted the attention of the Chinese automobile industry. In the early stages, the corporation return is reduced due to the investment on improving ESG performance, which in turn led to a decline in ROA and ROE. However, this decline didn't last for long. The funds invested by the corporation have brought positive increasing profitability indicators to the corporation after 2020. i. e. in the long term.

The continued decline of the SAIC indicator is related to its expansion in recent years. BYD has the best profitability performance of them all, which is also the only corporation that has rebounded

above the 2017 level after experiencing a decline. BYD's ROA and ROE increased by 70% and 153% respectively.

Table 11. Profitability Analysis of Chinese Automobile Industry, 2017-2023.

	2017	2018	2019	2020	2021	2022	2023
				ROA			
BYD	0.0276	0.0183	0.0108	0.0299	0.0134	0.0359	0.0461
CHANGAN	0.0679	0.0077	-0.0271	0.0272	0.0266	0.0530	0.0469
SAIC	0.0651	0.0618	0.0415	0.0317	0.0370	0.0231	0.0199
				ROE			
BYD	0.0820	0.0586	0.0338	0.0933	0.0381	0.1459	0.2083
CHANGAN	0.1519	0.0157	-0.0603	0.0615	0.0645	0.1230	0.1185
SAIC	0.1732	0.1700	0.1173	0.0941	0.1032	0.0679	0.0585

Source: Annual Report of BYD, CHANGAN Automobile and SAIC Motor

4.2. Corporate Solvency

Debt solvency pertains to a corporation's capability to utilize its assets for repaying both long-term and short-term debts. The pivotal aspect determining a company's sound survival and growth lies in its ability to generate cash and fulfill debt obligations. The author calculates the three indicators of current ratio, quick ratio and asset-liability ratio from the financial statements of each corporation as a reflection of corporate profitability.

Although the solvency indicators of each corporation are different, there is no unified direction of change in the fluctuation trend (see Table 12). BYD's solvency indicators have all experienced declines after 2020, while the fluctuations of the other two corporations have no obvious trend to follow. This also shows that when the entire Chinese automobile industry pays full attention to fulfilling ESG responsibilities and takes measures, the corporation's solvency will not be significantly affected. This is reasonable. Although corporate's ESG improvement will weaken its capital liquidity. Corporations can also increase their solvency to a certain extent by working on social factors, that is, maintaining relationships between companies and suppliers.

Table 12. Debt-Paying Ability Analysis of Chinese Automobile Industry, 2017-2023.

	2017	2018	2019	2020	2021	2022	2023
Current Ratio							
BYD	0.9919	1.0043	1.0072	1.0681	0.9697	0.7224	0.6660
CHANGAN	1.2027	1.0826	1.0812	1.2257	1.1975	1.2768	1.2626
SAIC	0.9974	1.0943	1.1045	1.1082	1.1343	1.0702	1.1318
Quick Ratio							
BYD	0.7999	0.7748	0.7664	0.7676	0.7166	0.4851	0.4727
CHANGAN	1.1133	0.9594	1.0076	1.1254	1.1075	1.2039	1.1666
SAIC	0.8694	0.9520	0.9869	0.9724	1.0164	0.9075	0.9517
Debt to Asset Ratio							
BYD	0.6633	0.6881	0.6800	0.6794	0.6476	0.7542	0.7786
CHANGAN	0.5528	0.5063	0.5499	0.5577	0.5874	0.5690	0.6040
SAIC	0.6239	0.6363	0.6458	0.6628	0.6414	0.6603	0.6594

Source: Annual Report of BYD, CHANGAN Automobile and SAIC Motor

4.3. Corporate Operating Capabilities

Operating capability pertains to a corporation's proficiency in attaining financial objectives by efficiently managing and integrating internal human resources and production materials. The author calculates the two indicators of accounts receivable turnover rate and inventory turnover rate from the financial statements of each corporation as a reflection of corporate profitability.

It can find that except BYD's operating capabilities have increased overall, the other two corporations are experiencing long-term fluctuations (see Table 13). But the operating capabilities of

the other two are far better than BYD. BYD's FTSE Russell and SynTao ESG ratings continued to rise during the study period, which is also a reflection of BYD's active investment in the supply chain. The increase in the number of BYD's suppliers in recent years has played a vital role in the growth of its operating capabilities.

Table 13. Operating Capacity Analysis of Chinese Automobile Industry, 2017-2023.

	2017	2018	2019	2020	2021	2022	2023
Receivable Turnover							
BYD	2.0415	2.6389	2.9075	3.7994	5.9623	10.9214	9.7358
CHANGAN	44.2838	47.0394	84.2110	39.4945	62.7553	39.5165	40.5360
SAIC	24.7485	22.1189	19.9932	16.5826	16.0105	11.4601	10.6763
Inventory Turnover							
BYD	4.3162	4.1293	4.1814	4.0212	4.3363	4.4473	5.4810
CHANGAN	14.8650	11.5067	17.8444	12.1447	12.7901	16.5558	9.1663
SAIC	14.8353	13.0633	13.3478	9.2982	12.1256	7.3609	6.6144

Source: Annual Report of BYD, CHANGAN Automobile and SAIC Motor

4.4. Corporate Development Capabilities

Development capability refers to the inherent capacity of an enterprise to increase its size or scope over time. The author calculates the two indicators of operating income growth rate and sustainable development rate from the financial statements of each corporation as a reflection of corporate profitability.

The movement of development capability is similar to profitability, which generally shows a trend of first declining and then rising. But unlike development capabilities, most of the industry's overall development capabilities have not returned to the level of 2017 (see Table 14). This also demonstrates that although investing in ESG is beneficial for the long-term development, the duration of long-term can vary from firm to firm. This is also one of the problems in the development of ESG investment. In particular, BYD has successfully surpassed its development capabilities compared to 2017, which is also consistent with BYD's rapid development trend in recent years. It is worth noting that since 2020, the industry as a whole has been in a stable development status. Internally, enterprises have increased their corporate governance requirements and their investment in environmental protection. Externally, corporations strengthened relationships with their partners. This is a manifestation of the corporation's fulfillment of social responsibilities and also enhances investors' confidence to the corporation's development.

Table 14. Developing Ability Analysis of Chinese Automobile Industry, 2017-2023.

	2017	2018	2019	2020	2021	2022	2023
Increase Rate of Main Business Revenue							
BYD	0.1068	0.1792	0.0720	0.1585	0.3065	0.3356	0.1103
CHANGAN	0.5989	0.1575	0.6719	0.2456	0.1574	0.2475	0.3807
SAIC	0.2460	0.0897	0.2382	0.1345	0.2189	0.0270	0.1392
Self-Sustainable Growth Rate							
BYD	0.0818	0.0520	0.0322	0.0953	0.0364	0.1345	0.2631
CHANGAN	0.1195	0.0140	-0.0569	0.0318	0.0338	0.0939	0.1344
SAIC	0.1045	0.1342	0.0907	0.0762	0.0858	0.0596	0.0621

Source: Annual Report of BYD, CHANGAN Automobile and SAIC Motor

5. Conclusion

This paper studies the impact of the corporation's ESG performance on its financial performance by analyzing the ESG performance and financial indicators of three Chinese automobile manufacturing corporations. Results show that the investment in improving ESG performance may

lead to a temporary decline in corporate's financial performance in the short term due to increased costs. But in the long run, it will increase the financial performance of the corporation.

For business operators, improving the corporation's ESG performance is not unprofitable. Although such costs cannot be retrieved in a short period of time, they are beneficial to the long-term development of the corporation. Therefore, ESG factors should be incorporated into the corporation's long-term development plan. This is not only for the long-term performance of the corporation itself, but also a measure that benefits society and mankind.

For investors, a corporation's ESG performance reflects corporation's attitude towards taking on social responsibilities. Investors should establish a correct concept of ESG investment as soon as possible and use ESG factors as important reference indicators in making investment decisions.

The government, regulators, and consulting firms should work together to promote the standardization and unification of the ESG rating system. Developing a complete and reasonable ESG rating system can also guide corporations in the right direction.

References

[1] Zhongfei Chen, Guanxia Xie. ESG disclosure and financial performance: Moderating role of ESG investors. International Review of Financial Analysis, 2022, 83, 102291.

[2] Amir Amel-Zadeh, George Serafeim. Why and how investors use ESG information: Evidence from a global survey. Financial Analysts Journal, 2018, 74(3): 87-103.

[3] The State Council of the People's Republic of China. The 13th Five-Year Ecological Environmental Protection Plan. Retrieved from: https://www.gov.cn/gongbao/content/2016/content_5148753.htm, 24th November 2016, Accessed 30th March 2024.

[4] Gunnar Friede, Timo Busch, Alexander Bassen. ESG and financial performance: aggregated evidence from more than 2000 empirical studies. Journal of Sustainable Finance & Investment, 2015, 5(4): 210-233.

[5] Patrick Velte. Does ESG performance have an impact on financial performance? Evidence from Germany. Journal of Global Responsibility, 2017, 8(2): 169-178.

[6] Lishi Zeng, Xuemei Jiang. ESG and corporate performance: Evidence from agriculture and forestry listed companies. Sustainability, 2023, 15(8), 6723.

[7] Liang Chen, Tian Yuan, Richard J. Cebula, Wang Shuangjin, Maggie Foley. Fulfillment of ESG responsibilities and firm performance: A zero-sum game or mutually beneficial. Sustainability, 2021, 13(19), 10954.

[8] Simin Chen, Yu Song, Peng GAO. Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. Journal of Environmental Management, 2023, 345, 118829.

[9] Shang Gao, Fanchen Meng, Wenshuai Wang, Wenxin Chen. Does ESG always improve corporate performance? Evidence from firm life cycle perspective. Frontiers in Environmental Science, 2023, 11, 1105077.

[10] Radhika Narula, Purnima Rao, Satish Kumar, Rahul Matta. ESG scores and firm performance- evidence from emerging market. International Review of Economics and Finance, 2024, 89, 1170-1184.

[11] Vinay Khandelwal, Prashant Sharma, Varun Chotia. ESG disclosure and firm performance: An asset-pricing approach. Risks, 2023, 11(6), 112.

[12] Xiaoling Yu, Kaitian Xiao. Does ESG performance affect firm value? Evidence from a new ESG-scoring approach for Chinese enterprises. Sustainability, 2022, 14(24), 16940.

[13] Yiqun Duan, Fan Yang, Lin Xiong. Environmental, social, and governance (ESG) performance and firm value: Evidence from Chinese manufacturing firms. Sustainability, 2023. 15(17), 12858.

[14] Mahmut Aydoğmuş, Güzhan Gülay, Korkmaz Ergun. Impact of ESG performance on firm value and profitability. Borsa Istanbul Review, 2022, 22: 119-127.

[15] China Passenger Car Association. China's 2023 Passenger Car Retail Sales Rankings. Retrieved from: http://www.cpcaauto.com/, 1st January 2024, Accessed 30th March 2024.