



Study on the Influence of ESG Practice on the Value of Shenhua Enterprise in China

Runlei Zhu, Chen Ke

School of Finance and Data Science, Xi'an Eurasia University, Xi'an 710006, Shaanxi, China

DOI: 10.32629/memf.v5i6.3174

Abstract: ESG includes three dimensions: Environmental, Social, and Governance. While my country's "Fourteenth Five-Year Plan" once again emphasized the strategic position of green development, it also proposed the "double carbon target". This article mainly adopts case analysis method, uses China Shenhua as a research object, analyzes the relationship between ESG and corporate value, and explores the impact of Chinese Shenhua ESG practice on its corporate value. This article found that China Shenhua actively carried out ESG practice, responding to the national green development strategy, increased the reputation of the enterprise, and reduced the business risk of the enterprise. At the same time, China Shenhua actively assumes social responsibility, disclose company information, reduce information asymmetry, and effectively increase corporate value. In the comparison with companies in the same industry, it was found that ESG practice has enhanced China's Shenhua's profitability, debt repayment capabilities, and operating capabilities, and at the same time, it has promoted the improvement of corporate stock prices. All in all, China Shenhua ESG practice has a positive effect on corporate value.

Keywords: ESG, ESG practice, corporate value, gray correlation

1. Introduction

ESG, which combines the three dimensions of environmental, social and governance, has emerged rapidly in the field of corporate management and financial investment in recent years. Its core is to advocate that enterprises should not only pursue economic benefits, but also pay attention to environmental protection, social responsibility and good governance, so as to achieve multi-dimensional and sustainable development. From the external environment, the concept of green investment has not been deeply rooted in people's hearts, and investors and institutions still need to improve their attention to social responsibility when evaluating enterprises. Therefore, the effect of promoting the implementation of ESG practices by investment decisions is not significant. However, if we take a long-term perspective, the promotion and implementation of ESG will undoubtedly bring stable benefits to enterprises. At the same time, with the increasing attention of the society to environmental problems, the attention of enterprises to environmental protection and the commitment of social responsibility will also be more in line with the goal of China's long-term economic development. Therefore, the ESG concept will become an important force to promote the sustainable development of enterprises in the future.

2. China Shenhua company profile

China Shenhua Energy Co., Ltd. is an enterprise with significant influence in the field of energy. The company was officially established in Beijing on November 8, 2004, and subsequently made an important breakthrough in the capital market by successfully listing on the Hong Kong Stock Exchange on June 15, 2005 and the Shanghai Stock Exchange on October 9, 2007. China Shenhua's main business is coal mining business. While continuously developing coal business, it drives the development of upstream and downstream business, actively expands clean energy, new energy and other businesses, and realizes the business model of multi-field and multi-industry collaborative development.

According to the financial report of China Shenhua in 2023, the company achieved an operating income of 344.5 billion yuan that year, an increase of 2.65%. Net profit of 81.66 billion yuan, an increase of 38.08%; The asset-liability ratio of enterprises was kept within a reasonable range, at 26.14%. China Shenhua has strong solvency and sufficient own funds, and its current ratio and quick ratio are at a relatively high level, which are 2.145 and 2.022 respectively. From the above indicators, the financial situation of China Shenhua has shown a stable and good trend and achieved healthy development.

As a coal company, China Shenhua needs to face the pressure of environmental sustainability and social responsibility. In recent years, China Shenhua has taken a series of measures to reduce carbon emissions, promote the development of clean energy and improve the ecological environment of mines. At the same time, China Shenhua enterprise is relatively mature in management practice and governance structure, with an experienced management team and a perfect internal control

mechanism.

In summary, China Shenhua, as a leading enterprise in China's coal industry, has strong market competitiveness and influence. In the face of industry transformation and social responsibility pressure, Shenhua is working hard to promote sustainable development and innovation transformation to adapt to future development needs.

3. China Shenhua ESG development status and rating

China Shenhua actively integrates the concept of sustainable development into its corporate strategy and runs through all business links. The company has continuously improved its ESG governance structure and operating mechanism, actively responded to the requirements and expectations of stakeholders, and is committed to fulfilling its social responsibility and promoting sustainable development.

3.1 Development status of China Shenhua E

In terms of addressing climate change, China Shenhua actively responds to the national "dual carbon" goal, strictly follows international agreements such as the Paris Agreement, and makes reference to documents such as the Hong Kong Stock Exchange's Climate Information Disclosure Guidelines to build a climate change control structure that meets legal requirements and comprehensively monitors the impact of climate change on the company's business and operations. We will systematically promote climate change risk management, strategy formulation, and information disclosure. At the same time, the company organizes climate change knowledge training from time to time to help board members acquire the necessary professional knowledge and skills, and seeks the assistance of external experts when necessary.

In terms of environmental management, China Shenhua has always adhered to the concept of green development, which runs through the whole process of project site selection, design, construction and operation. First of all, in order to strengthen the investigation and accountability of environmental responsibility, China Shenhua implements the ecological and environmental protection responsibility system and incorporates environmental protection indicators into the annual performance assessment system. Secondly, with the help of information technology to improve management efficiency, the company has built an environmental protection information management system to realize the sharing of information resources and online monitoring to ensure the integrity and reliability of management data. Finally, the company actively promotes a variety of environmental protection system certification to promote the continuous optimization and upgrading of the environmental management system.

In the field of pollution prevention and control, China Shenhua is committed to constantly improving the pollution prevention and control mechanism, strictly controlling the discharge of various wastes, and taking improving the level of pollution prevention and control as the core goal.

3.2 Development status of China Shenhua S

China Shenhua earnestly fulfills its social responsibilities to the public, employees and partners, adheres to the basic principle of "quality first", takes safe development as the core, and ensures the stable supply of national energy and the healthy development of the national economy. The company actively responds to the call of national policies, makes full use of its own resources and advantages, actively participates in public welfare and philanthropy, and carries out a series of influential activities.

In terms of product responsibility, China Shenhua has always adhered to the principle of strictly controlling product quality, and actively committed to the implementation of strict and comprehensive product and service quality management measures. As shown in Table 1:

Table 1. China Shenhua product quality table

Product	Quality control measures
Commercial coal	In order to build a comprehensive coal quality management system, China Shenhua has built a coal quality management network covering the whole process of self-produced coal production, washing and processing, loading operations, as well as the purchase of coal storage, measurement, shipping, etc., to ensure the fine and efficient coal quality management
Coal chemicals	Establish strict production process, quality standards and quality control procedures and review according to inspection procedures. The product shall be tested according to the finished product inspection method, and shall be allowed to leave the factory for sale after reaching the qualified standard.
Electricity and heat products	Improve power quality and process quality, ensure safe and stable operation, and reduce non-shutdown accidents of the unit.

Data source: China Shenhua Environmental, Social and Corporate Governance Report

In terms of protecting the rights and interests of customers, we adhere to the core concept of "customer-oriented, market-oriented", and constantly optimize the service efficiency and quality of key links such as pre-sale consultation, sale performance, and after-sales special services to ensure that the rights and interests of customers are effectively protected. According to the results of the annual customer satisfaction survey, the customer satisfaction of sewage coal is as high as 96.6 points, and the customer satisfaction of direct coal is as high as 99.7 points, which fully demonstrates the excellent performance of China Shenhua in customer service.

In the field of scientific and technological innovation, China Shenhua is striving to become the source of original technologies in the energy industry, and promote the deep integration and efficient transformation of scientific and technological innovation and value creation. This series of measures has strongly supported the company to the safe and efficient, clean and green, intelligent direction, laid a solid foundation for the company's long-term development. In 2022, the company will carry out scientific and technological research on key projects such as coal gangue filling mining, ore hung system, flexible intelligent thermal power, group operation control of heavy-duty trains, and comprehensive utilization of carbon dioxide. A total of 1 gold medal of China patent, 58 provincial and ministerial science and technology awards.

In terms of safety and health, China Shenhua has always regarded production safety and employee health as a key part of achieving sustainable and sound development of enterprises. The company adheres to the principle of "safety first, prevention first and comprehensive management". In order to establish a solid foundation of safety management, China Shenhua has constructed a three-level safety management system covering "headquarters - sub-branches - grass-roots units", continuously developing and optimizing the safety production responsibility system and risk prevention and control mechanism to ensure the improvement and effective implementation of the safety management system. During the reporting period, the company implemented a strict safety production reward and punishment assessment mechanism of "hierarchical management, hierarchical assessment, and full coverage" to strengthen safety management responsibility and execution. In addition, in order to improve the level of safety management, the company has implemented incentive measures linking safety performance with executive compensation to ensure that the management level is deeply involved in and attaches great importance to safety management.

In terms of community prosperity, China Shenhua practices corporate responsibility and responsibility, establishes a community participation mechanism guided by community needs, focuses on mutual benefit, and respects the cultural customs of the operation place as the basic principle, comprehensively promotes the coordinated and healthy development of community economy, culture and environment, and is committed to achieving common prosperity and development with the community. In 2022, the company issued a "Community Engagement Statement", which will identify the social risks associated with business activities throughout the business life cycle (including closure) through a variety of ways, such as identifying relevant risks, assessing adverse impacts, and actively communicating with local people, and incorporate social performance management into business decisions. The company actively builds constructive and strategic partnerships with local governments and communities, maintains timely, frank and proactive communication and exchange with them, respects local culture, religion, customs and business etiquette, and avoids infringing on the legitimate rights and interests of communities and residents.

In terms of social responsibility, through continuous efforts, China Shenhua has made positive contributions to the development of society, highlighting the responsibility and actions of enterprises. In 2022, China Shenhua donated a total of 531 million yuan. In 2022, China Shenhua will continue to carry out assistance work in three designated support counties, namely Wubao County and Mizhi County in Shaanxi Province and Butuo County in Sichuan Province, from the aspects of industrial revitalization, talent revitalization, cultural revitalization, ecological revitalization, and organizational revitalization, to help the counties firmly hold the achievements of poverty alleviation. The total expenditure for rural revitalization was about 78.3 million yuan, and 29 projects were implemented.

3.3 China Shenhua G development status

In terms of governance system, China Shenhua's board of directors and its special committees have achieved remarkable results in clarifying the rights and responsibilities of the management and improving efficiency, ensuring the steady operation of the company. In terms of integrity and law-abiding, China Shenhua always abides by the requirements of the Supervision Law of the People's Republic of China and the Anti-Money Laundering Law of the People's Republic of China and other laws and regulations, constantly improves the compliance management policies and systems, adheres to the principle of integrity management, creates a clean culture atmosphere, and is committed to improving the accuracy and effectiveness of supervision, so as to build a standardized and legalized operating environment. Under the strong leadership of the company's Party committee, China Shenhua has formulated the principles of "comprehensive coverage, prominent focus, clear rights and responsibilities, and efficient collaboration" to provide strong support for the company's compliance operations.

3.4 China Shenhua ESG rating situation

China Shenhua actively carries out ESG practice and usually adopts ESG rating system when measuring its ESG performance. Because domestic ESG research is not mature, ESG rating is mainly provided by third-party institutions, and few institutions rely on their own development and construction of ESG evaluation system. This paper takes data from the Wind database to measure the ESG performance of China Shenhua.

The rating of China Shenhua from 2019 to 2023 is shown in Table 2:

Table 2. China Shenhua ESG rating table

Year	2019	2020	2021	2022	2023
Shenhua ESG rating	A	A	AA	AA	AA

Data source: Wind Database

4. Correlation analysis between ESG performance and enterprise value of Shenhua

The first step in grey relational degree analysis is to implement dimensionless processing of parent and sub-sequence data. Among them, the parent sequence plays the role of the dependent variable, while the sub-sequence acts as the independent variable. In order to prevent the occurrence of 0 value from affecting the effectiveness of grey relational degree analysis, Tobin's Q value and ROE should be averaged to make the series value close to "1". This process involves dividing the individual sample values for each sequence by the corresponding sample mean, thus ensuring the comparability of the data and the accuracy of the analysis. The calculation results are as follows, as shown in Table 3:

Table 3. China Shenhua Tobin Q value and ROE data averaging results table

Index	2016	2017	2018	2019	2020	2021	2022
Q	0.8	1.16	0.87	0.93	0.91	1.06	1.26
ROE	0.6	1.09	1.06	0.96	0.86	1.04	1.38

Data source: empirical calculation results

In the process of grey relational degree analysis, the second step is very important, which involves calculating the correlation coefficient between each sub-sequence parameter and the parent sequence. This step is crucial to accurately measure the degree of association between each subsequence and the parent sequence, providing critical data support for subsequent analysis. Let the parent sequence be $x_0(k)$ and the child sequence be $x_i(k)$. First, we need to calculate the minimum difference and maximum difference between the parent sequence and the sub-sequence, which are very important for the subsequent correlation degree analysis. Respectively:

$$\Delta_{\min} = \min_{i=1}^m \min_{k=1}^n |x_0(k) - x_i(k)| \quad (1)$$

$$\Delta_{\max} = \max_{i=1}^m \max_{k=1}^n |x_0(k) - x_i(k)| \quad (2)$$

Next, we need to calculate the difference between each point on the sub-sequence curve and the corresponding point on the parent sequence curve, and these differences will be used in subsequent correlation analysis to more accurately reflect the degree of correlation between the sub-sequence and the parent sequence. Set to $\Delta_i(k)$, so that the correlation coefficient between the points on each subsequence and the parent sequence can be obtained:

$$\{\Delta_i(k)\}_{k=1}^n = \{|x_0(1) - x_i(1)|, |x_0(2) - x_i(2)|, \dots, |x_0(n) - x_i(n)|\} \quad (3)$$

Here, the resolution coefficient is a value between 0 and 1, which plays a key role in the calculation of correlation degree. It is proved by practice that the correlation degree obtained is the most accurate when ρ value is 0.5. Therefore, 0.5 is chosen as the value of the resolution coefficient, and the correlation coefficient is calculated based on this. Specifically, E, S, G and T were taken as sub-sequences, and Tobin's Q value and ROE value were taken as parent sequences to analyze the correlation degree.

Among them, the sub-sequence index data is, as shown in Table 4:

Table 4. China Shenhua ESG index score

Index	2016	2017	2018	2019	2020	2021	2022
E	0.7619	0.6197	0.7858	0.7512	0.8332	0.8543	0.7862
S	0.3919	0.6937	0.6738	0.7328	0.4115	0.8602	0.9847
G	0.0000	0.7566	0.5941	0.6336	0.5000	0.5403	0.6170
T	0.5349	0.8684	0.8804	0.8868	0.8325	0.9109	0.9226

Data source: empirical calculation results

The results of grey correlation coefficient calculation based on SPSSAU are as follows, as shown in Table 5:

Table 5. Calculation results of grey correlation coefficient of China Shenhua

	Tobin's Q value is the parent sequence				The ROE is the parent sequence			
	E	S	G	T	E	S	G	T
2016	0.937	0.508	0.342	0.617	0.751	0.693	0.416	0.914
2017	0.436	0.474	0.511	0.593	0.479	0.525	0.571	0.677
2018	0.848	0.688	0.607	1	0.623	0.532	0.482	0.728
2019	0.709	0.687	0.589	0.926	0.692	0.671	0.577	0.898
2020	0.861	0.457	0.507	0.859	1.000	0.492	0.551	0.998
2021	0.678	0.684	0.446	0.747	0.720	0.727	0.463	0.800
2022	0.47	0.608	0.393	0.557	0.419	0.526	0.357	0.487

Data source: empirical calculation results

Finally, the correlation degree and ranking can be obtained by observing and ranking the grey correlation coefficients of Tobin Q value and ROE of two different parent sequences. The results are as follows, shown in Table 6:

Table 6. Calculation results of grey correlation degree of China Shenhua

Index	Tobin Q		ROE	
	Correlation degree	Rank	Correlation degree	Rank
T	0.757	1	0.786	1
E	0.705	2	0.669	2
S	0.587	3	0.595	3
G	0.485	4	0.488	4

Data source: empirical calculation results

As can be seen from the above table, the calculated results of grey correlation degree of Tobin Q and ROE as parent sequences are relatively similar, in which the overall performance T of ESG ranks the highest in different parent sequences, all of which are around 0.75. The closer the correlation degree value is to 1, the stronger the correlation between the two sequences. This result significantly reveals that there is a close correlation between China Shenhua's positive ESG practice and enterprise value, and further proves the importance of ESG practice to enhance enterprise value.

5. Conclusion and prospect

In this paper, the correlation degree between ESG performance and enterprise value of Shenhua enterprises is tested by using the method of quantitative analysis and grey relational degree analysis. The analysis results show that whether Tobin's Q or ROE is used as an indicator to measure enterprise value, the correlation between environment, social responsibility, corporate governance and overall performance and enterprise value all show significant characteristics. It can be seen that China Shenhua's efforts in ESG practice have a positive impact on enterprise value.

First, China Shenhua has good performance in the three levels of environment, society and governance, and its ESG rating is excellent, and positive ESG practice is conducive to the sustainable development of enterprises. In terms of environment, as an energy company, China Shenhua focuses on the development direction of clean, low-carbon, safe and efficient modern energy, actively promotes the optimization and upgrading of industrial structure, increases the development and construction of clean and renewable energy, and actively responds to the national green development strategy. In the social aspect, China Shenhua pays attention to the protection of the basic rights and interests of employees and the development of employees' careers, and constantly improves the salary and welfare of employees and their physical and mental health investment. At

the same time, China Shenhua also participated in the great cause of precision poverty alleviation, and actively assumed the social responsibility of its own large enterprises; In terms of governance, China Shenhua continuously optimizes the corporate governance structure and improves the professionalism and independence of the board of directors. At the same time, the company also insists on disclosing its own financial information and ESG practice reports, and actively reduces the degree of information asymmetry with investors.

Second, China Shenhua's ESG practice has an important impact on its enterprise value. This paper draws a conclusion that ESG practice has a strong correlation to enterprise value through grey relational analysis.

Third, China Shenhua's positive ESG practice has a significant impact on its financial performance. Good ESG practice is conducive to the improvement and promotion of enterprise financial performance. Including reducing costs, reducing risks, improving brand value and attractiveness, and increasing revenue sources. These factors can effectively strengthen the company's long-term competitive advantage, thereby improving the sustainable development ability and creating more substantial value for shareholders. At the environmental level, effective environmental management and emission reduction measures help reduce production and operating costs, thereby improving profit margins; At the social level, active social responsibility practices can enhance Shenhua's brand image and reputation, attract more customers and investors, and thus increase market share and sales revenue; At the governance level, sound corporate governance and transparency can increase investors' trust in China Shenhua, attract more capital investment, and reduce financing costs.

To sum up, China Shenhua's active ESG practice has significantly improved its own corporate value, improved its financial performance, improved its operating and financial conditions, promoted its sustainable development, and had a positive impact on its corporate value.

Acknowledgments

Fund project: University-level scientific research innovation team project of Xi'an Eurasia University (2021XJTD02).

References

- [1] Stiadi Doni. Moderating Environmental, Social, and Governance (ESG) risk in the relationship between investment decisions and firm value[J]. IOP Conference Series. Earth and Environmental Science, Volume 1177, Issue 1, 2023: 1-14. DOI: 10.1088/1755-1315/1177/1/012007.
- [2] Ho Simon S. M. ESG myths and the objective of a corporation: optimising sustainable values for different stakeholders[J]. Asian Journal of Business Ethics. Volume 13, Issue 1. 2024: 197-202.