How does ESG Performance Affect Corporate Financial Performance: Based on the Dual-track Case Comparison of the New Energy and Traditional Energy Industries

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Abstract. This paper explores the influence mechanism and industry heterogeneity of ESG performance on corporate financial performance through a literature review and a dual-track case comparison. The research finds that ESG positively affects financial performance mainly through five pathways: reducing financing costs, obtaining government subsidies, improving operational efficiency, enhancing brand reputation, and attracting talent. Based on the case comparison of CATL (new energy) and Sinopec (traditional energy), this article reveals the core moderating role of industry differences: the new energy industry, relying on its green attributes, is more likely to obtain policy support and financing advantages, and ESG performance consolidates its cost competitiveness; the traditional energy industry, on the other hand, reduces risk premiums, alleviates reputation pressure, and gains transformation policy support through ESG transformation. The study emphasizes that enterprises need to formulate differentiated ESG strategies in line with industry characteristics, providing reference for investors' decision-making, enterprise develpment and governments' policy formulation.

1 Introduction

Sustainable development, the idea of satisfying current demands without harming the interests of future generations, has become a major international issue in recent years. China has set the sustainable development goals of "carbon neutrality" and "carbon peak", subsequently implemented supporting policies such as energy structure transformation, industrial optimization and upgrading, and encouragement of technological innovation. ESG, as a key indicator for discussing sustainable development issues, has seen a rapid increase in its popularity. Specifically, in the capital market, the expectations and pressure from stakeholders regarding ESG are growing increasingly, and it has been able to significantly influence the capital market to a large extent.

In the realm of all industries, the energy sector incontrovertibly exhibits a high degree of congruence with the objectives of sustainable development. The external manifestations,

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such as climate warming resulting in diminished grain yields and the increasing frequency of climate-related disasters, are driving forces compelling the energy industry to transform. Additionally, within the energy industry itself, the coexistence of traditional and new energy sources gives rise to various issues. These include technological disparities, cost differentials, and variances in policy support, all of which underscore the complexity of the energy landscape.

Consequently, the relationship between the sustainable development strategies and the financial performance of traditional and new energy enterprises is a topic that merits in-depth exploration. This investigation holds significant implications for understanding the long-term viability and competitiveness of these enterprises, as well as for formulating effective policies to promote the transition towards a more sustainable energy future.

This article will systematically review and assess the theoretical basis and empirical evidence of the impact of ESG performance on financial indicators, and conduct an in-depth analysis based on this. At the same time, it will explore the relationship between ESG and financial indicators in the energy industry through case comparison, to answer what are the main theoretical mechanisms and logical chains behind the impact of ESG performance on financial indicators, as well as the specific differences, manifestations and causes of these impacts in the energy industry.

This article uses the case study method as its research approach. It selects the world's most valuable new energy battery company (CATL) and the largest oil and petrochemical enterprise in China (Sinopec) to represent the differences in ESG practices between these two types of energy enterprises.

2 Literature review

As early as 1923, Oliver Sheldon had already put forward the idea of thinking about the responsibilities related to the company's internal and external affairs, and this idea was later developed into an important concept: CSR. Based on this, in 2004, in the report "Who Cares Wins" issued by the United Nations Global Compact Organisation, the concept of ESG was formally put forward and rapidly became the mainstream standard in the international capital market. On this basis, in 2004, the United Nations Global Compact (UNGC) published the report Who Cares Wins, in which the concept of ESG was formally introduced and quickly became a mainstream standard in the international capital markets.

ESG is now an important indicator for evaluating a company's ability to operate in a sustainable manner and its commitment to social responsibility. Among the three dimensions of ESG, E stands for Environmental, which measures how a company manages its impact on the environment; S stands for Social, which aims to focus on the way a company treats its employees, customers and the community; and G stands for Governance, which oversees all aspects of a company's management of itself. And there are interactions between the three dimensions: good governance is usually a guarantee of environmental and social performance, but in some cases, improving environmental efficiency can also lead to worker unemployment. [1] In practice, we need to balance the optimization of these three dimensions to maximize the effect.

The current global mainstream recognized ESG evaluation systems are MSCI, Refinitiv, FTSE Russell and so on. Taking Refinitiv as an example, in addition to the basic percentage system, he will assign weights to the importance of the three ESG indicators based on the industry, and conduct benchmark comparisons between different industries and countries to ensure that the ratings are fair and comparable.

By the characteristics of the ESG concept, it is not difficult to identify some relevant theories that may have an impact on the financial indicators. Stakeholder theory states that

the survival and growth of a business depend in part on the quality of its response to the needs of its stakeholders, and these stakeholders include the concepts of environment and society. A company's ESG report and ESG rating symbolize the company's ability to assume responsibility and credibility, which can be regarded as resources in the resource-based theory, providing impetus for the company's development, and serving as signals to the market and investors to convey information and reduce information asymmetry.

Numerous studies have demonstrated that ESG impacts the financial performance of firms. It has been shown that independent assessment of environmental policies and strategies can improve ROA and firm efficiency, and social activities such as employee training and human rights policies are also positively associated with ROA and market value[2]. In addition, higher ESG performance significantly reduces the share price volatility of firms in some industries and maintains share price stability [3]. Paths such as the ESG reduction in corporate finance costs presented in this paper are likewise widely proven. However, some studies indicate that ESG can hurt firms' financial performance. For SMEs, bank-led monitoring is characterized by weaker monitoring of disclosure and higher disclosure costs, so that ESG disclosure rather raises their cost of capital; and the S-factor and the G-factor do not have a significant effect on the financial performance of SMEs [4]. Indeed, ESG-enhancing initiatives can impose short-term burdens before they have an effect. In summary, I argue that the main controversies in these arguments are: the conflict between short-term investment costs and long-term returns; the difference between the impact of individual dimensions of E, S, and G and the impact of ESG as a whole; and the differences in how different industries are affected by ESG in these studies.

Subsequent major studies will explore industry heterogeneity in the form of case illustrations on top of the underlying logic chain reasoning. Some researchers have already made relevant studies in this area and found that while ESG has a positive effect on financial performance, its industry differences are the core moderators [5]. The importance of the three ESG dimensions varies across industries due to industry characteristics, e.g., resource-intensive industries are particularly sensitive to environmental compliance, i.e., the E factor, while the importance of reputation and ethics in consumer-oriented industries results in the S factor being more important [5]. These industry characteristics generally include regulatory intensity, competitive landscape, technology intensity, etc., which have different sensitivities to ESG factors that combine to lead to different sensitivities to ESG in different industries. Therefore, many studies have pointed out that in practice, companies should formulate ESG strategies according to the characteristics of the industry they are in, and the importance of industry heterogeneity in ESG research can be learned.

3 Comparison of ESG-financial relationship cases between the new energy industry and the traditional energy industry

3.1 Case selection and industry background

This paper mainly focus on the energy industry. New energy and traditional energy in this industry form a set of contrasts: the new energy industry has the advantage of natural green attributes, but its internal technology iteration is faster, the R&D and manufacturing barriers are prominent, and the requirements for R&D capabilities are extremely high, while government policy subsidies and green finance will play a supportive role in the whole life cycle of the new energy industry. They mainly face ESG-related concepts such as the environmental impact of technological innovation and governance issues of emerging companies. The traditional energy industry has invested a lot of money in its previous growth period due to the heavy asset attribute of equipment construction, and its equipment is highly

specialized, with high exit costs; its mature industry built in long time is now facing huge environmental and social pressure and environmental constraints from the government due to its own high-pollution characteristics, but if it transforms, it will incur very high transformation costs. The ESG-related concepts it focuses on are carbon emissions, social health and safety, and strategic management of transformation.

In this paper, we choose CATL, a leading new energy company in China and even in the world, which focuses on battery R&D and production, and Sinopec, a traditional energy company, which is very mature in the petroleum and petrochemical fields, as a group of companies to be compared in the following analysis. Both of these companies have already had certain results worth referring to in terms of ESG governance construction. CATL is undoubtedly at the forefront of the industry as the company that currently supplies the most power batteries globally. They started publishing their ESG report in 2021, with a strategy focused on achieving carbon neutrality targets, with supply chain and employee responsibility as the social fulcrum, and governance transparency as the institutional safeguard; Sinopec, as a veteran Chinese company currently at the forefront of the world's Fortune 500 companies, published its first social responsibility report in 2006, and followed it up in 2012 with a White Paper on Petrochemical Environmental Protection" in 2012[6]. In recent years, it has continued to push forward with new technology development and whole-process innovation to shrink its own carbon and pollutant emissions and build a sustainable value chain. Refinitiv gave CATL a B+ overall ESG score, with an A- for environmental and social dimensions and a C for governance, while Sinopec similarly received a B+ overall score, with an A for environmental dimensions, a B for social dimensions, and a B+ for governance.

3.2 Case evidence of differences in financing costs

Many studies have confirmed that good ESG performance plays a role in reducing corporate finance costs, which may be the result of a combination of regulatory policies, financial institutions and investor preferences [4]. Here are three paths. One, the emphasis on environmental risk management and corporate governance in ESG leads to more risk management, which reduces the chances of events such as environmental regulatory penalties and reputational crises faced by firms. Second, the popularization of ESG concepts in recent years has led to increased institutional attention to companies with good ESG performance, increased demand for shares or bonds of such companies, and therefore lower costs of equity financing and higher share prices. Third, in the presence of policy support at lower interest rates, such as green loans, ESG-performing firms are usually more likely to receive such support.

In terms of industry heterogeneity, for the traditional energy industry, although it faces many environmental pressures and transformation issues, the positive relationship between ESG performance and financing efficiency in the previous section still holds, thus enhancing the ability of these firms to adapt to today's environment where the need for sustainability is gradually rising [7], i.e., in turn compensating for some of the transformation costs. Sinopec's social responsibility reports for more than a decade and its great achievements in environmental protection and emission reduction in recent years have enhanced its image and visibility in the public mind, which in turn has gained momentum for further development and sustainable operations. Therefore, actively improving ESG performance is a reliable path for them to reduce their risk premium to improve their financing ability, and thus further strive for development or possible transformation. For the new energy sector, the literature generally shows that it is easier to reduce financing costs through green finance channels, which is a direct and significant advantage over the traditional energy sector. In the case of CATL, the construction of its corporate governance enhanced shareholder confidence, while

the investment in the environment improved the firm's competitive advantage and complied with national policies and regulations [8].

3.3 Comparison of policy support and operational efficiency

Existing studies point out that firms can obtain more government subsidies by improving their ESG performance, specifically that corporate transparency will play a positive mediating role in the process as the central mechanism [9]. In the context of the increasing importance of sustainable development, the government will formulate more favorable policies to support companies with good ESG performance to achieve the dual-carbon goal, including financial subsidies and tax breaks, etc., which will have a direct positive impact on the financial indicators of non-operating income and tax expense on the table.

In terms of industry heterogeneity, the new energy sector is the main beneficiary of current government subsidies and policy support, and ESG performance is often the core basis for obtaining such support. Another study shows that for those MSMEs with weak financing ability, government subsidies have a stronger role in promoting their development [10]. With its continuous ESG investment optimization, the government subsidies received by CATL have grown from $508 million in 2018 to $3.847 billion in 2024, which has accounted for 16.8% of its net profit. As for the traditional energy sector, the subsidies it receives are usually closely tied to transformation, and its ESG investments are the basis for such support. SINOPEC's participation in the SASAC-led “Central Enterprises' Green and Low-Carbon Supply Chain Enhancement Social Responsibility Initiative” has been endorsed by the policy, reinforcing its position as a leader in green transformation; its Green Hydrogen Project has also been listed as a national demonstration project.

Some researchers have already found a positive correlation between a company's operational efficiency and its ESG performance [11], and this paper discusses possible mechanisms mainly from the three dimensions of ESG. On the ecological side, energy saving and emission reduction measures of enterprises, among which are intuitively strengthening energy management and resource recycling, can directly reduce energy consumption and waste disposal costs; on the social side, good employee welfare and humane management can increase productivity, attract more talents and reduce turnover rate, and responsible supply chain management can improve supply chain resilience and optimize procurement costs; on the governance side, strengthening internal governance, strengthening internal controls and risk management can reduce operational errors and losses.

In terms of industry heterogeneity, the new energy industry's own sustained technological advances and scale effects can drive down its costs, and ESG practices play a role in further consolidating its cost competitiveness. It has been pointed out that through ESG practices, CATL advanced management concepts and technological advances have led to improved operational efficiency, which is reflected in the improvement of its accounts receivable turnover and inventory turnover[8]; while the traditional energy industry, as a high-energy-consumption industry, meets ESG requirements for energy conservation and emission reduction and also enables it to reduce costs and increase efficiency, and in some specific industries such as the coal mining industry, its investment in employee safety and production safety has been reduced. In some specific industries, such as coal mining, investment in employee safety and production safety is critical to reducing accident rates and costs. Sinopec's improved operational capability is mainly due to its governance practices: optimizing its internal control system and hiring senior managers with the goal of focusing on stakeholder relations and transparency, thus improving management [6].

3.4 Brand reputation and industry strategies for talent attraction

In the study of CATL, it is found that with the development process of its ESG practices, it has won many awards including the excellent supplier category, the safety production category, the employee relations category, the social contribution category and so on, which is sufficient to illustrate the enhancement of the company's reputation; and its stringent quality requirements are also able to be favored in some overseas markets and expand overseas markets [8]. From this, two impact paths can be distilled, namely, shaping a responsible image of the company through good ESG praactices, enhancing the value of the brand, increasing awareness and loyalty, and at the same time cushioning the impact of negative events when they occur; and the tendency of customers to choose responsible brands and high-quality products, which allows the company to increase its market share, and sometimes generates a brand premium effect, which can increase the sales revenue of the company. firms' sales revenues.

In terms of industry heterogeneity, the green brand of the new energy industry is its core market competitiveness, which can directly attract governments, corporations, and environmentally conscious consumers to purchase products or stocks, and the reputation under good ESG performance is an important intangible asset. For the traditional energy industry, the highly polluting companies among them often face tremendous reputational pressure. Their ability to emphasize ESG management, especially in environmental responsibility, can contribute to the rise of corporate reputation, gain investor bias and maintain or even expand market share, thus enhancing financial performance [12]. Sinopec has also been honored with the title of “China's Low-Carbon Role Model” for 10 consecutive years for its promotion of environmental governance, and has accumulated a great deal of reputation for its long history of giving back to the community as a long-established state-owned enterprise in China.

Not surprisingly, the brand's reputation also includes how it is perceived by job seekers, which brings us to the next point in our discussion of talent attraction. Previous research has pointed to a number of ways in which employee-friendly policies are positively associated with company performance, as evidenced by increased employee loyalty, reduced absenteeism, turnover, and increased productivity, and that being socially responsible can lead to higher returns for the organization [13]. This can be attributed to the fact that employee rights and benefits in the S dimension and ethical culture in the G dimension enhance the attractiveness for the firm. For the E dimension, the emphasis of enterprises on ecological and environmental protection can also be preferred by the new generation of outstanding talents who have the same awareness of environmental protection.

In terms of industry heterogeneity, the new energy industry, as an emerging industry, is attractive in itself, and good ESG management can strengthen its competitive advantage in talent. Initiatives such as the launch of equity incentives and the establishment of safe and user-friendly office space have helped CATL to consistently win best employer awards from several organizations in recent years, which has also driven its innovation capabilities: its internal research staff has grown from around 8,000 in 2021 to more than 20,000 today; while traditional energy often faces the problem of losing talent to transitioning industries and difficulties in attracting new types of talent. Strengthening employee rights, corporate culture, and corporate governance is the most direct and effective way to stabilize core talent, and a company's commitment to and practice of transformation attracts talent with the new skills needed to transform its business. Sinopec's emphasis on employee rights and benefits, from compliance with the Labor Law to protect employees' basic rights and benefits, to all-around care for employees' health from the physical to the psychological, to the significant increase in reported salaries payable to employees, and to a sound education system for employees, is a direct way to retain employees and gain high employer ratings in the job market.

4 Limitations and suggestions for future research

Through the above research, we have learned that ESG can affect the financial indicators of enterprises through a variety of ways, and there are significant differences in the paths of influence between the new energy and traditional energy industries, in which the intensity of the role of different dimensions of ESG on the financial indicators is also different. In the existing literature, most of the literature supports that ESG performance improvement is beneficial to corporate financial indicators in the long run, and that industry is an important moderator of ESG's impact on financial indicators.

However, the relationship between ESG and financial indicators is still controversial in some parts of the current academic community. Among them, there are mainly uncertainties about the causal relationship, i.e., whether it is ESG performance that affects financial indicators or financial indicators that affect ESG performance, or whether there is a third-party factor that affects both; then there is the trade-off between the short-term effect and the long-term effect of ESG, here especially for the traditional energy industry that is transformed by high inputs; as well as conflicts and trade-offs between the ESG dimensions, and so on.

In the process of writing this paper, it was found that there are still relatively few in-depth comparative studies of specific industries, insufficient depth of case studies, as well as weaker studies between different economies and systems. In addition, the current micro-process of ESG to the financial indicators transmission path is not sufficiently revealed.

Based on this, this paper proposes recommendations for the direction of future research, first of all, to deepen the mechanism of research, an in-depth study of ESG impact on the specific operational processes and ultimately to the financial micro-processes, and so on. Secondly, the depth and breadth of the industry can be strengthened, and case comparisons can be used to reveal the complex impact of the industry context. In terms of ESG, research on how to improve ESG measurement and data quality will also contribute to many related aspects; it is also possible to pay more attention to the dynamics and long-term effects of financial data.

5 Conclusion

This paper systematically integrates the multifaceted theoretical mechanisms and empirical evidence on the impact of ESG performance on financial metrics, and highlights the differences in the ESG-financial relationship between the new energy industry and the traditional energy industry as well as the deeper reasons for the differences; furthermore, it summarizes the main picture, consensus, controversies, and core challenges of the current existing research, which provides a more fine-grained and contextualized perspective on understanding the creation of ESG value.

This paper has some reference value. For corporate managers, especially those in the energy industry highlighted earlier in this paper, there is a need for a deep understanding of the key mechanisms and differences in ESG impacting finance in this industry, and the development of a differentiated and strategic ESG roadmap. For investors, they can think about industry-tailored ESG analysis frameworks to deeply understand the specific value drivers and risks of different industries; for policymakers, they need to consider the differences and stages of the industry in designing their policies: new energy companies need to continuously optimize their support policies, while traditional energy companies need to offer For policymakers, the design of policies should take into account the differences and stages of the industries: optimize policies for new energy, provide clear and stable transition policy signals and practical support for traditional energy, and strengthen ESG disclosure requirements to reduce market uncertainty. Finally, for academics, it is important to address the core limitations of existing research and actively explore emerging frontiers.

Against the backdrop of today's global consensus on sustainability, understanding how and under what conditions ESG performance translates into financial value is critical to driving the transition to a greener, more inclusive and sustainable economy. With the help of more refined and in-depth future research, we believe that our level of understanding of the relationship between ESG and financial performance will be greatly enhanced.

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