

ESG Compliance and Financial Stability in Transnational Operations

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Abstract: With the acceleration of globalization, companies face the dual challenges of ESG (Environmental, Social and Governance) compliance and financial stability in transnational operations. Some companies implement social responsibility standards inconsistently in different countries, resulting in damaged brand image. To this end, this paper studies ESG compliance and financial stability in transnational operations, aiming to optimize the sustainable development path of companies worldwide. This paper analyzes the specific application of ESG concepts in transnational operations. Secondly, the double standards of transnational companies in fulfilling their social responsibilities are studied. From the perspective of corporate culture, how to strengthen internal corporate responsibility awareness through ESG training systems, sustainable development departments, and transparent reporting mechanisms is explored. Subsequently, in terms of transnational operation risk control, measures including ex ante market research, financial risk identification management, and supply chain optimization are proposed to reduce operational uncertainty. This paper analyzes the impact of corporate environmental responsibility fulfillment on international market competitiveness through stakeholder theory, resource-based theory, and reputation theory. The study finds that strengthening ESG compliance management in transnational operations can significantly improve market competitiveness and financial stability. Companies that adopt environmentally friendly technologies can reduce energy costs by 20%-30% within 5 years, while improving resource utilization and reducing waste emissions by 30%-40%.

1. Introduction

In the context of global economic integration, the operating environment of multinational companies is becoming increasingly complex. How to achieve ESG (Environmental, Social and Governance) compliance and financial stability on a global scale has become a key issue for corporate sustainable development. This paper analyzes the ESG scores, financial performance indicators (ROA, ROE, debt-to-asset ratio, stock price volatility, etc.) and risk factors (supply chain risk, bankruptcy risk, litigation, etc.) of different industries and companies, explores the relationship

between ESG scores and corporate financial stability, and proposes suggestions on how to optimize financial management, reduce operating risks, and improve long-term investment returns through ESG strategies. The research results provide empirical support for companies to formulate ESG strategies and improve financial stability, and also provide decision-making basis for investors and policymakers.

This paper first introduces the importance of ESG compliance in multinational operations, and proposes research questions and research objectives in combination with corporate financial stability. Next, the literature review reviews the relevant research on ESG performance and corporate financial performance, and explores the differences in the impact of regulatory environments on ESG in different countries. In the research method section, this paper adopts a quantitative analysis method, based on data from multiple industries, to construct a relationship model between ESG scores and financial indicators (such as ROA, ROE, debt-to-asset ratio, and stock price volatility), and conducts empirical analysis. Subsequently, the experimental part reveals the specific impact of ESG scores on corporate financial stability through data analysis and industry comparison, and further explores the moderating role of factors such as regulatory strictness and industry characteristics. Finally, this paper summarizes the main research findings and discusses the limitations of the research and future development directions, in order to provide a reference for the ESG strategy of companies in multinational operations.

2. Related Works

In recent years, the importance of ESG (environmental, social and governance) factors in the supply chain management of multinational companies has become increasingly prominent, and many scholars have conducted in-depth research on its impact and optimization strategies. Das concluded by analyzing the data released by multinational companies that management intervention through a stronger supply chain policy framework, monitoring mechanism, corrective measures, and training programs could improve the ESG environmental pillar performance of multinational companies [1]. Latilo et al. proposed achieving compliance and minimizing the possibility of internal litigation within multinational corporations by developing a centralized compliance framework that combines local regulations with global standards [2]. Elmghaamez et al. used quantile regression to analyze a large balanced panel data of hundreds of multinational companies and found that there was a positive correlation between ESG disclosure and accounting performance indicators of large multinational companies, but this relationship was offset by the negative impact of the audit and sustainability committee index [3]. Tran et al. evaluated the innovation, operation, and profitability performance of three aspects through opportunity constrained network data envelopment analysis. The results showed that ESG implementation had a convex U-shaped impact on profitability and OP (Operating Procedures), which meant that when ESG investment exceeded a certain level, the company benefited [4]. Bowley and Hill analyzed and studied the driving factors of institutional investors in promoting corporate ESG management, and pointed out that the global ESG management ecosystem supported the development and dissemination of ESG management norms [5]. Gündoğdu et al. weighted ESG standards and prioritized strategies through the q-rung orthopair fuzzy (q-ROF) weighted average technique. The study found that “greenhouse gas emissions” was the most important criterion. “Eco-efficiency” was the best choice for environmental competition strategy [6]. Lee and Chen quantified and determined the weights of key factors of information security risks in multinational companies through the hierarchical analysis method. The results showed that information security risk management was significantly affected by six interrelated dimensions: technical factors, organizational management practices, personnel-related issues, regulatory compliance, external

environmental conditions, and environmental, social and governance practices [7]. Ahn pointed out that the Korean government must establish a public-private partnership and communicate closely to prevent Korean companies from being harmed by failing to meet the increasingly stringent international environmental, social and governance (ESG) standards [8]. Karen studied the factors that affected companies' compliance with ESG standards in the mining industry. He pointed out that the mining industry plays an important role in global economic development. However, its operations often have adverse impacts on the environment and society [9]. Cinciulescu explored the evolution of corporate environmental risk management, with a focus on analyzing the integration of ESG factors. This study pointed out that ESG integration was not only a compliance mechanism, but also a strategic asset for enhancing corporate resilience, winning the trust of stakeholders, and creating long-term value [10]. Van Assche and Narula analyzed the effectiveness of hierarchical compliance as a governance mechanism to promote sustainability in the global value chain. Enhanced hierarchical compliance promotes supplier participation in joint problem-solving and information sharing by establishing trust mechanisms, which can improve sustainability, but may also lead to increased transaction costs, thereby excluding suppliers [11]. Although existing research has revealed the positive impact of ESG practices on the performance of multinational corporations, there are still challenges in quantifying the effectiveness of ESG policies, balancing sustainability and profitability, and addressing regulatory differences in different regions.

3. Methods

3.1 Application of ESG Concept in Transnational Operations

In the global competitive environment, companies need to fully implement the concept of ESG in the process of transnational operations to achieve sustainable development. Among them, the use of environmental protection technologies in industrial production, such as water reuse, sewage treatment facilities, and energy consumption management systems, can reduce pollution and improve resource utilization efficiency. In addition, companies actively turn to clean energy, such as natural gas or biomass boilers, to reduce carbon emissions. Although the cost of transformation is high, it can reduce production costs and improve economic benefits in the long run.

Furthermore, companies should actively respond to the global carbon neutrality goal in transnational operations, and further reduce the impact on the environment by optimizing the supply chain structure, reducing carbon footprint, and promoting green logistics. For example, some multinational companies adopt intelligent logistics systems to reduce energy consumption during transportation and improve overall operational efficiency. These measures not only help companies improve their market competitiveness, but also enhance their brand image and investor confidence.

3.2 Double Standards in the Fulfillment of Social Responsibilities of Multinational Companies

Some multinational companies have double standards in fulfilling their social responsibilities in their home and host countries. For example, in European and American countries, these companies strictly abide by laws and regulations such as environmental protection, consumer rights, and employee treatment, but in developing countries, they may lower standards to obtain greater profits. This practice not only affects the economic and social stability of the host country, but also damages the long-term reputation of the company.

Typical cases include that the product quality standards of some multinational companies in the Chinese market are far lower than those of Europe and the United States, and even after quality problems occur, they adopt delayed responses and passive recycling to cope with public pressure. To improve the compliance of multinational companies in the host country market, legal

supervision should be strengthened to promote companies to consciously fulfill their social responsibilities and maintain a fair competition environment.

In addition, multinational companies should uniformly implement ESG standards globally to ensure that upstream and downstream partners in the supply chain meet environmental protection, social responsibility, and governance requirements. For example, a transparent supply chain management system is established to regularly review the compliance of suppliers and formulate a clear accountability mechanism, preventing improper behavior from affecting the overall reputation of the company.

3.3 Corporate Social Responsibility and Corporate Culture in Multinational Operations

Corporate culture is the values, vision, and moral concepts formed in the long-term production and operation process of companies, and corporate social responsibility has become an important part of the corporate culture of multinational companies. From the perspective of global development trends, multinational companies have gradually shifted from passively accepting social responsibilities to actively fulfilling social responsibilities. Companies need to integrate stakeholder management concepts at the strategic level and balance the interests of consumers, communities, governments, and other parties to ensure sustainable development.

Companies can improve employees' awareness of sustainable development goals and enhance their sense of responsibility by establishing an ESG training system. In addition, companies can also set up a dedicated sustainable development department to regularly evaluate the effectiveness of ESG practices and report publicly to stakeholders to enhance transparency and credibility.

3.4 Risk Control of Cross-border Operations

(1) Pre-market research

Before entering a new market, companies should fully investigate the market environment and evaluate policies and regulations, consumer demand, and competitive situation. For example, before entering the Chinese market, some multinational catering companies conduct in-depth research on consumer tastes and consumption habits to ensure that their business strategies meet local needs and ultimately successfully occupy the market.

In addition, companies should actively establish contacts with local governments, industry associations, and social organizations to obtain first-hand policy information in order to better adapt to the local market environment and avoid operational risks caused by policy changes.

(2) Financial risk identification and management

The financial management of multinational companies needs to focus on supply chain structure, financing environment, and operating costs. When the supply chain concentration is high, the bargaining power of companies is weak, and the capital recovery speed is slow, which in turn affects technological innovation and long-term development. Therefore, companies should adopt a horizontal integration approach to analyze the potential risks of data input, processing, and output links through financial information systems, thereby improving financial management efficiency.

Companies can also use financial technology tools, such as blockchain technology to optimize cross-border payments and improve capital liquidity, and use big data analysis to improve financial forecasting capabilities and reduce operational uncertainty.

3.5 Corporate Environmental Responsibility and Transnational Business Performance

Companies fulfilling their environmental responsibilities can enhance their competitiveness in the international market. From the perspective of stakeholder theory, companies need to enhance

their brand image through environmental protection practices and establish good relationships with local governments, consumers, and partners. From the perspective of resource-based theory, environmental responsibility, as a heterogeneous resource, can give companies a competitive advantage. From the perspective of reputation theory, actively disclosing environmental information helps win market recognition, attract investors and outstanding talents, and promote the long-term and stable development of companies.

In addition, companies can set carbon reduction targets, join international environmental initiatives (such as RE100, CDP, etc.), and adopt renewable energy procurement strategies to reduce environmental risks and improve sustainable development capabilities.

3.6 Importance of Compliance Operations

Chinese companies need to attach great importance to compliance operations in the process of transnational operations. Some companies face risks such as commercial bribery and illegal operations in overseas markets due to insufficient understanding of international regulations. Therefore, companies should be encouraged to take compliance operations as their primary responsibility, strengthen internal control, and establish a compliance management system to reduce legal risks and improve the sustainable development capabilities of companies.

Companies can also learn from the compliance management experience of leading international companies, establish internal reporting mechanisms, strengthen anti-corruption and data compliance training, and ensure that their business operations in overseas markets comply with local laws and regulations.

4. Results and Discussion

4.1 Experimental Method

Sample Selection: multinational companies operating in different countries (such as manufacturing, finance, energy, etc.) are selected.

Data Sources:

Corporate Annual Reports (ESG Reports, Financial Statements)

Global ESG Rating Databases (such as MSCI ESG Ratings, Sustainalytics)

Financial Information Disclosed by Stock Exchanges in Various Countries

Questionnaires (for corporate executives, investors, and government regulators)

Interviews or case studies (benchmarking the financial stability differences between ESG-leading companies and low-ESG companies).

4.2 Robustness Test

The Propensity Score Matching (PSM) is used to reduce the bias caused by differences in corporate size and industry;

The instrumental variable (IV) method is used to verify causality.

The short circuit of data analysis in Figure 1 may be due to the following reasons: lack of sufficient correlation between data. For example, Company A1's ESG score is 82; its environmental (E) score is 85; the social (S) score is 80; the governance (G) score is 82, showing relatively low governance and social responsibility scores, but these differences are not fully taken into account and no appropriate adjustments are made in the overall ESG score. Secondly, the differences in ESG scores between companies fail to deeply analyze the specific impact of each factor. For example, company A4's score is significantly lower than other companies, with an environmental (E) score of

58, a social (S) score of 62, and a governance (G) score of 59, indicating that it has obvious deficiencies in environmental protection and social responsibility, but these shortcomings may not be fully revealed in the ESG score. In addition, ignoring the weights and interactions between the various scoring indicators may lead to biased analysis results and fail to truly reflect the performance of companies in different areas. These analytical short circuits affect the accuracy of the overall evaluation and lead to wrong decisions or recommendations.

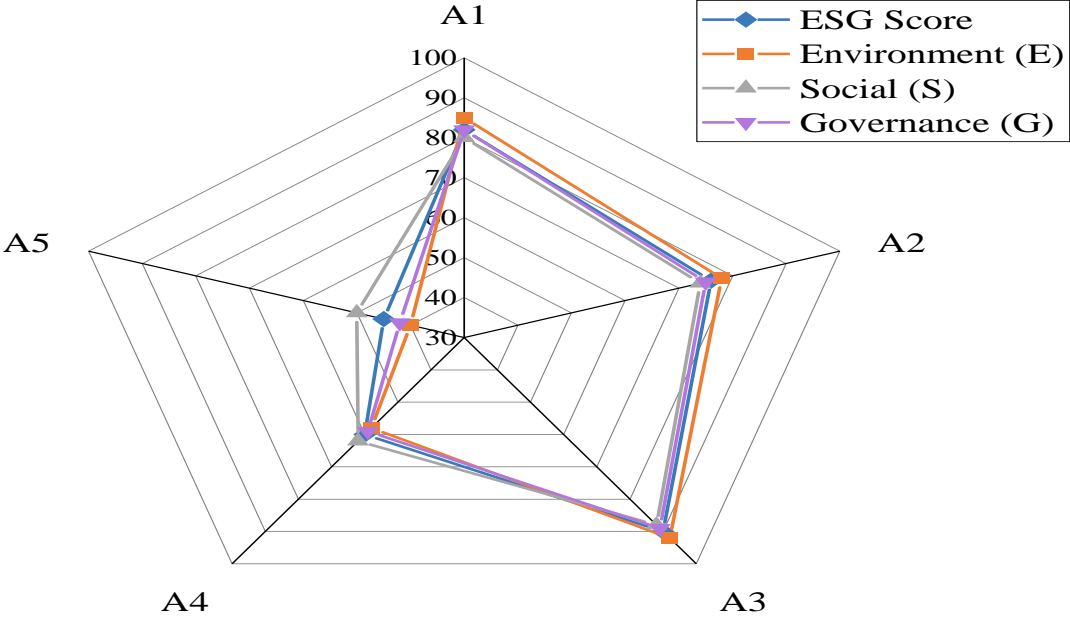


Figure 1. Corporate ESG compliance scores

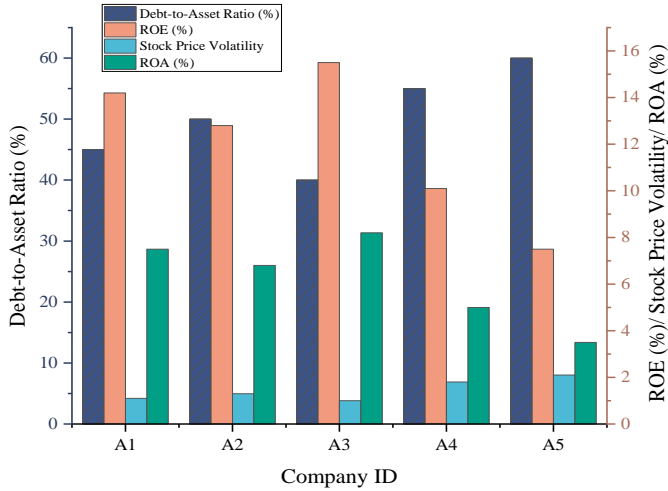


Figure 2. Financial stability

Based on the experimental data provided in Figure 2, the financial indicators and stock price volatility of each company can be analyzed. The ROA (return on assets) and ROE (return on equity) reflect the profitability of a company. Higher ROA and ROE usually indicate that the company can more effectively use assets and shareholder investments to generate returns. From the data, company A3 has the highest ROA (8.2%) and ROE (15.5%), indicating that it performs most outstandingly in terms of profitability. On the contrary, company A5 has lower ROA (3.5%) and ROE (7.5%), indicating that its profitability is relatively weak. The debt-to-asset ratio reflects the stability of the capital structure of a company. A higher debt-to-asset ratio means that the company

relies more on debt, which may increase financial risks. Company A5 has the highest debt-to-asset ratio (60%), indicating that it has a high level of debt and may face greater financial risks. Company A3 has the lowest debt-to-asset ratio (40%), and its financial risks are relatively low. Stock price volatility reflects the market's risk perception of a company's stock. Company A5 has the highest stock price volatility (2.1), indicating that the market is more volatile than the company's stock, with a higher risk; Company A3 has the lowest stock price volatility (1), indicating that its stock price is relatively stable and less risky.

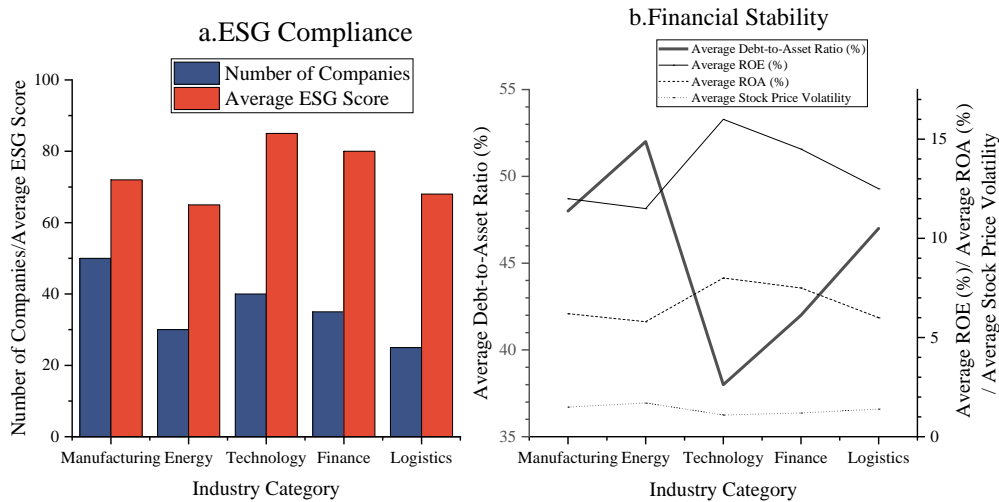


Figure 3. The impact of ESG compliance on financial stability in different industries

The data analysis of Figures 3a and 3b shows that there are significant differences in ESG scores, financial performance (ROA, ROE), and financial stability (asset-liability ratio, stock price volatility) among different industries. The technology industry has the highest average ESG score (85), and the highest ROA (8.0%) and ROE (16%), showing strong profitability. In addition, the industry has the lowest asset-liability ratio (38%) and the lowest stock price volatility (1.1), indicating that technology companies generally have a more robust financial structure and lower market risk. The energy industry has the lowest ESG score (65), and its ROA (5.8%) and ROE (11.5%) are also at a low level, with the highest asset-liability ratio (52%) and the highest stock price volatility (1.7), indicating that energy companies have weaker profitability and greater market risks under high financial leverage, and may be affected by policy adjustments and energy price fluctuations.

According to the experimental data provided in Table 1, the relationship between the regulatory strictness of different countries or regions and the ESG score, financial performance, and stock price volatility of companies can be analyzed. First, the EU has the highest regulatory strictness, and its companies also have the highest average ESG score (88), showing relatively mature environmental, social and governance practices. In addition, the average ROA (8.5%) and ROE (16.8%) of EU companies are relatively high, indicating that under a relatively strict regulatory environment, companies have strong profitability. At the same time, the lower average debt-to-asset ratio (38%) and average stock price volatility (1) reflect a relatively stable financial situation and low risk. In contrast, Africa has the lowest regulatory strictness, and the average ESG score (50) of companies is also significantly lower, indicating that the region's performance in environmental, social and governance is poor. In terms of finance, Africa's average ROA (4.2%) and ROE (8.5%) are much lower than those of other regions, and the average debt-to-asset ratio (60%) is high, which means that the financial leverage of companies in the region is high and they face greater debt repayment pressure. The average stock price volatility (2) also reflects the high-risk characteristics

of companies in the region.

Table 1. The impact of ESG regulation in different countries on corporate compliance and financial performance

| Country/Region | Regulatory Strictness | Average ESG Score | Average ROA (%) | Average ROE (%) | Average Debt-to-Asset Ratio (%) | Average Stock Price Volatility |
|----------------|-----------------------|-------------------|-----------------|-----------------|---------------------------------|--------------------------------|
| EU | High | 88 | 8.5 | 16.8 | 38 | 1 |
| USA | Medium | 80 | 7.5 | 15 | 42 | 1.2 |
| China | Medium | 72 | 6.2 | 12.5 | 48 | 1.5 |
| India | Low | 60 | 5 | 10 | 55 | 1.8 |
| Africa | Low | 50 | 4.2 | 8.5 | 60 | 2 |

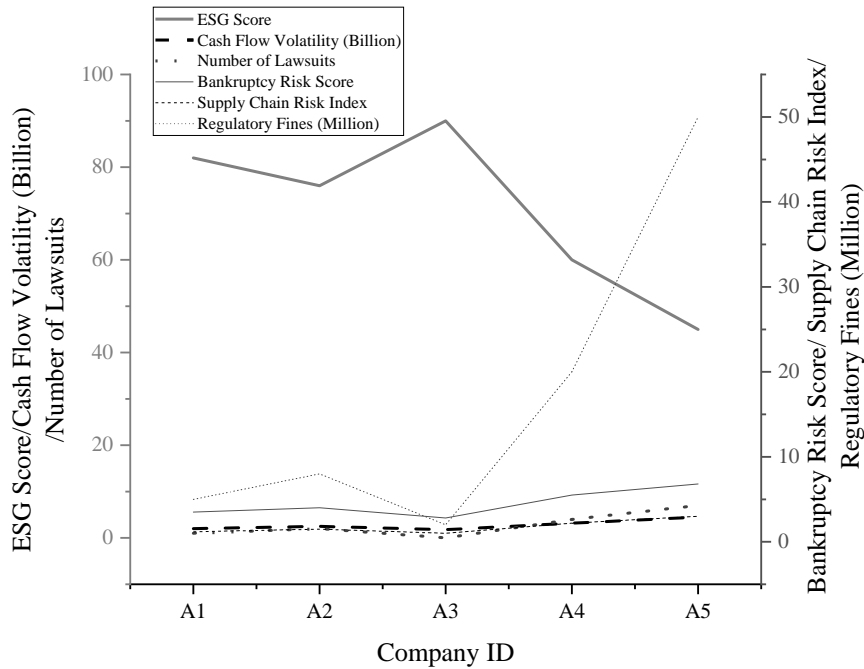


Figure 4. ESG compliance and corporate financial risk

Based on the experimental data provided in Figure 4, the relationship between the ESG score of a company and various risk factors is analyzed. First, company A3 has the highest ESG score (90), a low bankruptcy risk score (2.8), a small cash flow fluctuation (180 million), a small supply chain risk index (1), and a small number of lawsuits (0), indicating that the company performs well in risk management and financial stability, and faces a low amount of regulatory penalties (2 million). These factors show that A3 not only performs well in environmental, social and governance, but also has a relatively complete risk management mechanism that can effectively avoid operating risks. In contrast, company A5 has the lowest ESG score (45), the highest bankruptcy risk score (6.8), the largest cash flow fluctuation (450 million), a very high supply chain risk index (3) and a small number of lawsuits (7), and a regulatory fine of up to 50 million. This shows that A5 has high risks in many aspects, especially in financial fluctuations and legal risks. The low ESG score reflects the company's poor performance in environmental, social and governance, which may be one of the reasons for its high risk.

5. Conclusions

This paper studies the impact of ESG compliance on corporate financial stability in the context of transnational operations, and analyzes the relationship between ESG scores and financial indicators such as ROA, ROE, debt-to-asset ratio, and stock price volatility based on data from multiple industries and companies. The results show that companies with higher ESG scores generally show higher ROA and ROE, lower debt-to-asset ratios, and lower stock price volatility, which indicates that companies with good ESG performance have stronger risk resistance and financial stability in the global market. In addition, among different industry categories, the technology and financial industries have higher ESG scores and relatively better corporate financial performance, while the energy and manufacturing industries have relatively lower ESG scores and higher corporate financial risks, indicating that industry characteristics play a certain role in regulating the relationship between ESG performance and financial stability. The further analysis finds that regulatory stringency has a significant impact on the relationship between ESG performance and financial stability. Companies in countries with stricter regulation (such as the European Union) generally have higher ESG scores and stronger financial stability, while regions with looser regulation (such as Africa and India) show higher debt-to-asset ratios and stock price volatility. In addition, companies with lower ESG scores tend to face higher supply chain risks, bankruptcy risks, lawsuits, and regulatory fines, indicating that ESG performance not only affects the financial performance of companies, but also largely affects the operational stability and long-term sustainability of companies. Although this study provides empirical analysis on ESG compliance and financial stability, there are still certain limitations. The research data mainly comes from specific industries and countries, and fails to cover all industries and markets around the world. Therefore, future research can expand the data scope to improve the universality of the conclusions.

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