

Practical Dilemmas and Paths to Breakthrough in Integrating Financial Reporting Information under the ESG Disclosure Boom

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Abstract

With ESG disclosure getting more and more attention, the integration of ESG information in corporate financial reporting faces many challenges. This paper analyzes the measurement standard inconsistency, high cost of data collection, lack of audit and forensic standards, and lack of talents in the integration of financial reporting information in the ESG disclosure boom, and proposes a path to break through the situation from the levels of policy, technology, and talents, aiming to provide ideas for enterprises to realize the effective integration of ESG information and financial reporting, so as to enhance the quality of corporate disclosure and the ability to transfer value.

Keywords: ESG Disclosure, Financial Reporting, Information Integration, Path to Breakthroughs

Competing Interests:

The authors declare that there is no conflict of interest.

1. Introduction

With the implementation of International Sustainability Standards Board (ISSB) Sustainability Disclosure Standards for International Financial Reporting and the tightening of ESG disclosure requirements in China, corporate financial reporting is in the process of transitioning to a comprehensive disclosure of "Financial + ESG"(Mai et al., 2024). However, the non-monetary attribute of ESG information is in conflict with the monetary measurement rules of financial reporting(Li, 2024), and in practice, it is faced with problems such as inconsistent measurement standards and high data synergy costs. According to the 2025 ESG White Paper, only 41.56% of listed companies in A-shares in 2023 can effectively collate ESG and financial data, which affects the quality of information and restricts value judgment. This paper focuses on the integration dilemma and proposes a path to break the dilemma from the levels of measurement, technology, and talent to provide reference for enterprises to enhance the effectiveness of disclosure.

2. Policy Context and Integration Value

2.1 Policy-driven context

In recent years, the International Sustainability Standards Board (ISSB) has issued the International Financial Reporting Sustainability Disclosure Standards (IFRS), which requires enterprises to incorporate the impact of ESG factors on financial status into the reporting system; China's Shanghai and Shenzhen stock exchanges have also revised the relevant disclosure guidelines put forward quantitative requirements for ESG disclosure in key industries, and promoted the linkage analysis between ESG data and financial indicators. Continuous promotion at the policy level has prompted the transformation of the corporate disclosure model from a single presentation of financial data to a comprehensive disclosure of "Financial + ESG".

2.2 The practical value of information integration

From the viewpoint of internal management, the integration of ESG information with financial data helps to accurately identify cost drivers. By quantifying environmental costs, companies can optimize the consumption of resources in the production process, and related studies show that such integration can lead to significant reductions in operating costs(Li, 2018). At the external capital level integrated disclosure enhances market transparency and investor confidence, and companies with better ESG performance have lower equity financing costs than the industry average(Lian and He, 2023), reflecting the capital market's recognition of the value of integrated disclosure models.

3. Three-Dimensional Deconstruction of Practical Dilemmas

3.1 Measurement dimension: conflicting attributes and fragmentation of standards

The non-monetary attributes of ESG information are in fundamental conflict with the monetary measurement system of financial reporting. Environmental indicators are measured in physical units and social indicators in time units, while financial reporting requires a uniform monetized expression(Zhou, 2024). This difference in attributes leads to a "translation dilemma" in consolidation. When energy companies account for "green technology inputs", it is difficult to define the proportion of R&D expenses that fall under the ESG umbrella, resulting in ambiguous attribution of the data in the financial statements(Wang, 2016). In addition, there are significant differences in the measurement frameworks of different regulators: the indicator systems of the EU's Sustainable Financial Disclosure Regulation (SFDR) and China's ESG disclosure guidelines are quite different, and enterprises need to adapt to multiple sets of standards at the same time, which increases the difficulty of integration(Yang, 2024). This fragmentation of standards makes the collocation of ESG information with financial data lack consistency and reduces the comparability of reporting.

3.2 Data dimensions: the cost and timeliness paradox of cross-sectoral collaboration

ESG data collection requires cross-departmental collaboration, but internal enterprise data systems are often fragmented. Due to insufficient investment in digitization, the cost of manual ESG data collection accounts for a significantly higher proportion of operating costs in SMEs than in large enterprises(Wei, 2025). For example, retailers need to check the qualifications of suppliers one by one when compiling "sustainable sourcing ratio", which is time-consuming, labor-intensive and error-prone. Meanwhile, the periodic disclosure feature of financial reports conflicts with the real time dynamics of ESG data - carbon emissions, employee turnover and other data change daily, and companies need to invest extra resources to maintain data timeliness in order to meet the disclosure requirements, which constitutes a big burden for SMEs. The high cost and low efficiency of data collaboration have led to many enterprises' ESG information integration remaining on the surface making it difficult to penetrate into the business logic.

3.3 Assurance dimension: lack of auditing standards and credibility crisis

Currently, there is a lack of mandatory unified forensic standards for ESG information auditing and third-party organizations have different validation methods for qualitative indicators such as "carbon neutral commitment" and "social responsibility fulfillment". The lack of forensic mechanism makes ESG information still face a "credibility crisis" after consolidation: it is difficult for investors to judge whether the ESG data has been rigorously verified, and it is also impossible to accurately assess the value of enterprises through the

consolidated information(Cao, 2022). In addition, the lack of logic between the qualitative description of ESG information and the quantitative expression of financial data leads to an "information gap" in the integrated report, which weakens the decision usefulness of the disclosure.

4. Paths to Breakthrough and Research Conclusions

4.1 Systematization of the path to breakthroughs

At the policy and standard level, we should promote the establishment of a unified ESG financial integration guideline. We can refer to the indicator transformation logic of the European Union's Sustainable Financial Disclosure Regulation (SFDR), formulate an ESG-financial subject mapping table in line with China's national conditions, and clarify the monetization measurement rules for indicators such as environmental costs and social inputs. The regulator can join hands with industry associations to issue sub-indicators. Regulators can work with industry associations to issue templates for sub-industry integration to reduce the cost of adaptation for enterprises. Meanwhile, at the technical and tool level, we should promote the "ESG Finance Center" digital system, which integrates data from production and human resources departments through API interfaces to automatically capture and monetize ESG indicators. Small and medium-sized enterprises can adopt a lightweight SaaS platform to complete data integration at a lower cost. At the talent and mechanism level, ESG professional training for financial personnel should be strengthened, and an "ESG Financial Integration" course can be added to the continuing education of accountants, so as to cultivate composite talents who understand accounting standards and are familiar with ESG standards. At the same time, a "finance + ESG" dual-post review mechanism should be established to ensure the accuracy of information integration.

4.2 Conclusions and outlook of the study

The integration of ESG information and financial reporting is an inevitable trend of upgrading the disclosure system, but it is currently facing multi-dimensional difficulties in measurement, data and forensics. The breakthrough path proposed in this paper focuses on policy guidance, technological empowerment and talent support, and provides reference for enterprise practice. Future research can further explore the impact mechanism of ESG financial integration on enterprise value, or carry out in-depth case studies based on specific industries to provide empirical support for policy refinement. With the improvement of the integration mechanism, financial reporting will be transformed from "historical data record" to "value creation prediction" to better serve the goal of sustainable development.

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