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From Financial to Sustainable Accounting: A New Reporting Paradigm

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Abstract. Traditional accounting practices has long served as the backbone of corporate reporting, providing standardized information to support decision-making by stakeholders. While highly structured and auditable, traditional accounting has limitations in addressing non-financial challenges. Therefore, as a complementary framework integrating environmental, social, and governance factors to measure long-term sustainability, ESG accounting has emerged as a result of the shift driven by stakeholder's growing demand for transparency and accountability in corporate sustainability and social responsibility. Drawing on accounting theory and current practices, this article outlines how companies are beginning to integrate ESG into mainstream reporting system. This shift represents a fundamental redefinition of the purpose of accounting in the 21st century, shifting the focus from reporting financial performance to demonstrating value creation within a social and environmental context.

Keywords: Traditional accounting, ESG accounting, Financial Accounting, Sustainable Accounting

1. Introduction

Accounting systems reflect the priorities and assumptions of the societies in which they operate. Traditional financial accounting has dominated corporate reporting for the past century, focusing on providing shareholders and regulators with profitability, liquidity, and solvency metrics. In the past two decades, this "financial-only, shareholder-only" perspective has been repeatedly challenged: it struggles to measure a company's social and environmental externalities and tends to overlook significant human-related risks and opportunities. Consequently, ESG accounting has emerged, leveraging international standards such as the GRI, SASB, and ISSB to mandate the integration of sustainability information into mainstream disclosures. This article focuses on two questions: How does ESG accounting differ conceptually and operationally from traditional financial accounting? What are the drivers and challenges involved in integrating ESG into the accounting mainstream?

2. Traditional accounting: function, value, and constraints

As Lee and Tweedie [1] observe, "information contained in company financial reports should be useful to shareholders in their investment activities."Traditional financial accounting, centered on

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monetary recognition, historical costs, and shareholder priorities, offers institutional stability but excludes externalities such as environmental damage, carbon emissions, and labor exploitation, creating an illusion of profitability. Reporting also lags by months, looking only backward, with virtually no disclosure of key future risks and opportunities, such as those related to climate change, technology, and regulation, weakening strategic foresight. Furthermore, shareholder priorities trump diverse interests, including those of employees, consumers, society, and the environment. This leads to a lack of information on employee well-being, diversity, ethical sourcing, and environmental stewardship, making it difficult for stakeholders to hold them accountable and assess a company's true long-term value.

3. ESG accounting: concepts and current practices

3.1. Key frameworks and standards

The landscape of ESG reporting is shaped by several major frameworks, each with distinct objectives and emphases. The Global Reporting Initiative (GRI) adopts a modular structure consisting of universal, topic-specific, and industry standards, enabling organizations to disclose their impacts on the economy, environment, and people in a comparable and credible way [2]. In contrast, the Sustainability Accounting Standards Board (SASB) emphasizes industry-specific disclosures tailored to financially material sustainability issues, aiming to provide investors with decision-useful information [3].

The Task Force on Climate-related Financial Disclosures (TCFD) brought a strong focus on climate-related risks and governance, which has since been incorporated into the International Sustainability Standards Board (ISSB) framework. In July 2023, the ISSB assumed responsibility for climate disclosures, marking the culmination of the TCFD’s work [4]. Within the European context, the Corporate Sustainability Reporting Directive (CSRD) introduces mandatory sustainability disclosures, applicable from the 2024 financial year for reports published in 2025. These disclosures are guided by the European Sustainability Reporting Standards (ESRS), which cover a comprehensive range of environmental, social, and governance topics including climate change, biodiversity, and human rights [5].

Finally, the ISSB itself, established under the IFRS Foundation, consolidates prior initiatives including SASB and TCFD. Its sustainability disclosure standards, IFRS S1 and IFRS S2, aim to provide globally consistent and investor-focused information on sustainability-related risks and opportunities [6]. Together, these frameworks illustrate both the diversity and convergence of ESG reporting practices, highlighting the ongoing tension between global harmonization and regional specificity.

3.2. Conceptual differences from traditional accounting

At a conceptual level, ESG accounting departs from traditional financial accounting in several fundamental dimensions.

First, the fundamental purpose. Traditional accounting focuses on shareholders and creditors, interpreting value through profitability and debt repayment capacity. ESG accounting, on the other hand, shifts to a multi-stakeholder perspective, integrating employees, government, society, and the environment into a single value network, and viewing long-term social and environmental well-being as a prerequisite for sustained corporate success. The pursue of the shareholder value cannot

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be the essence and the only objective in doing business anymore, since also ESG dynamics have to be taken in due consideration [7].

Second, the unit of analysis. Traditional accounting solely measures the flows and balances of financial capital. ESG accounting adopts the multi-capital model proposed by integrated reporting, incorporating natural, human, intellectual, and social capital. It supplements financial figures with non-monetary indicators and qualitative narratives, thereby disclosing new dimensions such as carbon emissions, employee turnover, and supply chain ethics.

Third, materiality. Traditional accounting systems focus on a single dimension of financial materiality—information is considered material if it influences investors' economic decisions. ESG, on the other hand, introduces a dual dimension of materiality: examining both a company's impact on the external environment and society and how ESG issues impact corporate value. The EU CSRD has mandated parallel reporting, forcing organizations to reshape their processes for identifying, assessing, and disclosing issues.

Fourth, there is a time perspective. Traditional accounting focuses on past transaction results; ESG accounting emphasizes a forward-looking approach, requiring disclosure of risks, opportunities, and long-term social license to operate under climate scenarios to respond to rapidly evolving stakeholder expectations and regulatory rules.

Fifth, there is data structure and assurance. Traditional data originates from ERP systems and is highly structured and auditable. ESG data, which includes metrics like employee engagement and biodiversity impacts, is often a hybrid of quantitative and qualitative information. It often relies on self-reporting and lacks globally standardized assurance standards, making verification much more difficult than for income or asset items.

Sixth, there is regulatory and standards infrastructure. Financial accounting is governed by authoritative, well-coordinated standards such as those from the IASB/FASB. However, ESG accounting remains fragmented by multiple frameworks, including GRI, SASB, TCFD, ISSB, and CSRD. While recent progress has led to convergence thanks to the ISSB and CSRD, it has yet to achieve the global consistency of traditional accounting.

In short, ESG accounting signals a paradigm shift in corporate reporting: from financial performance to sustainable value creation, from shareholders to multiple stakeholders, from retrospective to prospective, and from a single capital to multiple capitals. The two systems are not simply compatible; rather, they require reintegration at the conceptual, technical, and governance levels to build a comprehensive account of corporate activities for the 21st century.

3.3. Practical challenges

Data and standards are significantly deficient. ESG data often lacks systematic collection and internal controls, relying on estimates or subjective data, resulting in limited credibility and comparability. Despite the existence of frameworks such as GRI and SASB, a globally unified standard has yet to be established. The haphazard selection of frameworks by companies leads to inconsistent reporting, limiting investor comparisons and making it difficult to identify greenwashing. Cross-industry analysis is even more challenging due to industry specificities. The lack of verification mechanisms exacerbates the trust crisis. While traditional financial data is rigorously audited, ESG disclosures are often unaudited or subject to only limited assurance. The lack of standardized verification procedures for non-financial data raises questions about its accuracy and completeness. Even when assurance is provided, its scope is often limited to selected indicators and the thresholds are vague. The development of robust verification standards similar to those for financial audits is still in its early stages. Gaps in theory and capacity are significant. ESG

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accounting lacks consensus on the definition, calculation, and interpretation of indicators. Complex concepts like supply chain sustainability and governance effectiveness are difficult to standardize and monetize, lack theoretical support for incorporating into financial decision-making, and struggle to integrate with traditional accounting. Most companies, especially small and medium-sized enterprises, lack the skills, resources, and infrastructure required for ESG reporting. They must coordinate across multiple departments and invest in data systems. Market adoption barriers are significant. Even after ESG data is disclosed, analysts and investors struggle to utilize it. Unlike financial indicators already incorporated into valuation models, ESG scores are highly contextual, lack comparable historical data, and are applied in diverse ways, making them difficult to use in credit pricing, valuation, or long-term strategic planning. In summary, ESG accounting faces both technical and institutional challenges. Overcoming these obstacles requires collaboration among regulators, standards bodies, industry, and academia to build infrastructure and trust, promoting the equal weight of ESG information alongside traditional financial indicators and influencing corporate behavior and capital allocation.

4. The transition from traditional to ESG accounting

4.1. Regulatory pressures

Regulatory pressure is becoming the strongest driver of the shift from traditional accounting to ESG accounting. The EU CSRD requires nearly 50,000 companies to disclose audited sustainability information in accordance with the ESG Standards (ESRS), using a digital marker. The US SEC plans to include Scope 1-3 emissions and climate governance in 10-K reports. The UK, Japan, China, Canada, and Australia have also mandated TCFD or local ESG rules. Regulators are also expanding director responsibilities, elevating non-financial disclosures to the same level of truthfulness, diligence, and legal accountability as financial statements. The ISSB, a subsidiary of the IFRS Foundation, is rolling out the global baseline standards IFRS S1/S2, signaling the emergence of an international ESG accounting system with the same credibility as IFRS. Companies that fail to implement these standards face compliance penalties, restricted financing, and litigation risks. Therefore, they must internalize ESG accounting as a core capability that combines technical depth with legal compliance.

4.2. Capital market demands

The capital market is becoming another key force driving the transition from traditional finance to ESG accounting. Global sustainable investing has surpassed $35 trillion, accounting for over a third of professionally managed assets. Institutions like BlackRock and Vanguard have incorporated ESG into their investment mandates, voting against or divesting from companies that under-report. Moody's, S&P, and Fitch have incorporated climate responsibility, labor disputes, and governance deficiencies into their ratings, directly influencing bond pricing and loan terms. The surge in green bonds, sustainability-linked loans, and ESG ETFs has made the authenticity of KPI disclosures a prerequisite for issuance and pricing. Exchanges like London, Singapore, and Hong Kong are mandating or encouraging disclosures based on the TCFD, SASB, and GRI frameworks, while the SEC and ESMA are cracking down on "greenwashing". As a result, companies with strong ESG performance enjoy lower capital costs and higher valuations, while those lagging behind face divestment and delisting. High-quality, standardized ESG accounting is no longer optional; it is crucial for companies to access capital, determine valuations, and maintain their long-term survival.

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4.3. Stakeholder and social expectations

Employees, consumers, NGOs, and communities are rewriting "shareholder primacy" into "stakeholder capitalism". In 2019, nearly 200 CEOs at the Business Roundtable pledged to create value for all groups, giving ESG accounting a legitimacy. Global surveys indicate that most consumers are willing to pay a premium for ethical and sustainable products. Social media amplifies the risk of irresponsibility. Externally verified ESG disclosures have become a reputational moat. Younger generations prefer companies with strong ESG performance, and ESG reports have become a dashboard for internal talent management. NGOs use rankings and scorecards to debunk "greenwashing". Lack of transparent disclosure leads to public opinion, shareholder proposals, and reputational damage. Communities and Indigenous peoples are also demanding participation in decisions affecting land, water, and cultural heritage, and community impact indicators within ESG systems empower them. The pandemic, the climate crisis and global goals (SDGs, Paris Agreement) are driving companies to align their operations with the public interest. ESG accounting is no longer a voluntary option but a cornerstone of governance and reputation management; those who ignore it risk losing trust and social license.

4.4. Internal risk management

The core motivation for companies to turn to ESG accounting is that it can address traditional accounting's blind spots for non-financial risks. Climate, resource, community, and governance risks often transcend departmental, financial, and reputational boundaries. Traditional financial statements only reflect losses after the fact, but ESG accounting uses real-time indicators such as emissions intensity, water consumption, employee turnover, and board diversity to expose vulnerabilities in advance. Combined with scenario analysis, cross-functional data integration, and peer benchmarking, it enables early warning and proactive response. As banks, insurance companies, and supply chains incorporate ESG into credit granting, underwriting, and procurement standards, companies that fail to disclose ESG will be excluded from their investment portfolios or incur higher costs. Incorporating ESG indicators into ERM can enhance resilience, strategic adaptability, and stakeholder trust, thereby becoming essential for continued value creation in the upcoming risk environment.

5. Integrating ESG into traditional accounting system

5.1. Driving forces: regulation, capital, and risk

On the regulatory front, the EU CSRD has made "dual materiality" sustainability disclosure a mandatory audit requirement, while the US SEC has also included Scope 1-3 carbon emissions in 10-K reports, and the ISSB's IFRS S1/S2 aims to set a global standard that is as authoritative as IFRS. Failure to meet these standards can lead to fines, credit restrictions, and even lawsuits, placing disclosure obligations on par with financial reporting. At the same time, global sustainable investment has surpassed $35 trillion, and ESG transparency directly impacts the cost of capital. BlackRock, Moody's, and the Hong Kong Stock Exchange are incorporating climate and governance metrics into ratings, bond yields, and listing rules, respectively. Green bonds and sustainability-linked loans also embed KPIs within their contracts. More importantly, climate, supply chain, human resources, and governance risks often surface before financial losses. Only by integrating real-time emissions data, employee turnover rates, community complaints, and other information

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into scenario analysis and ERM systems can companies proactively adjust capital budgets, insurance terms, and procurement strategies to avoid significant losses.

5.2. Challenges: data, standards, assurance, and organization

Despite strong regulatory and market momentum, the integration of ESG into traditional accounting still faces multiple structural and operational challenges.

First, ESG data often relies on estimates, questionnaires, or third-party databases, lacking general ledger-level internal controls, raising questions about comparability and reliability.

Second, the coexistence of frameworks with widely varying metrics and definitions of materiality, allows companies to cherry-pick disclosures, making cross-market comparison difficult. “85% of companies are using multiple ESG reporting frameworks, making comparability and consistency difficult [8].” There are no globally standardized assurance standards for non-financial information, resulting in most reports receiving only limited assurance and audit depth far less than that of financial statements.

In addition, ERP systems have yet to automatically link carbon emissions, human rights, and biodiversity to cost centers and budget items. Finance, sustainability, legal, and IT operate independently, further hindering the development of technology and talent within small and medium-sized enterprises. Furthermore, new concepts such as dual materiality, natural capital measurement, and forward-looking disclosures conflict with the existing asset-liability-income framework, necessitating a redefinition of the boundaries of "performance" and a restructuring of organizational processes and culture.

6. Discussion

The integration of sustainability and Environmental, Social, and Governance (ESG) accounting into corporate reporting practices signifies a transformative shift towards more comprehensive, transparent, and stakeholder-oriented forms of corporate governance [9]. This shifts the focus of "useful decision-making" beyond short-term profitability to encompass natural, human, and social capital. This empowers companies to gain legitimacy and reshape the definition of assets, liabilities, and performance. Senior management should embed ESG metrics into internal controls, data governance, and incentive systems, with the board's audit and compensation committees simultaneously engaging with them. Institutionalized practices can enhance resilience, attract long-term funding, and earn stakeholder trust. While the ISSB and CSRD are promoting a unified global regulatory framework, coordination is still needed regarding disclosure, assurance, and digital taxonomy. Policies must clarify dual materiality, establish assurance standards, and implement cross-border enforcement to curb greenwashing and reduce the burden on businesses. Accounting education must integrate sustainability assessment, impact measurement, and stakeholder governance into its curricula. Professional institutions must update their competency frameworks to integrate financial and sustainability professionals and fulfill their public interest mission.

7. Conclusion

This paper has examined the evolving relationship between traditional financial accounting and ESG accounting, arguing that the transition toward integrated reporting constitutes a fundamental redefinition of the purpose and scope of accounting. Basing on the in-depth comparison of principles

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and institutional dynamics, the research has demonstrated that ESG accounting is not a fringe addition but a critical addition to financial disclosure.

The study highlights the growing necessity of embedding environmental, social, and governance considerations into mainstream reporting, not merely to meet regulatory compliance but also to respond to capital market expectations and societal pressures. This evolution reflects a broader shift in the role of accounting: from a backward-looking record of financial results to a forward-looking framework that captures long-term value creation and sustainability risks.

In reviewing traditional accounting's limitations, the conceptual innovations of ESG reporting, and the institutional challenges of data, standards, and assurance, the paper underscores how the field is in a stage of transition. The integration process is shaping new definitions of performance, altering corporate governance structures, and reshaping the accountability relationship between firms and their stakeholders. The implications extend beyond disclosure practices, influencing capital allocation, risk management, and the legitimacy of business in society.

At the same time, it is important to acknowledge that the journey remains incomplete. Current ESG accounting still suffers from fragmented frameworks, lack of standardized assurance, and significant gaps in data quality and comparability. These limitations constrain its effectiveness as a decision-making tool for investors, regulators, and companies themselves. Future research could explore how emerging technologies, cross-border regulatory convergence, and advances in impact measurement might help address these deficiencies and accelerate the institutionalization of ESG accounting.

The journey to total integration is not straight. Perceptional divide, data incompatibility, lack of assurance and organisational silos have remained to block the usefulness of ESG accounting. As it currently stands, ESG accounting does not have to replace traditional accounting; it does change its limits and the meaning of its applicability. The process of the profession adjusting to this larger responsibility implies that the accounting role is going to be gauged more than ever by its contribution to sustainable value creation in what is a new age of complexity, interdependence, and an age of global risk.

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