ASEAN International Sandbox Conference 2025 AISC Proceedings, Volume 7, 2025
http://aseansandbox.org

ESG and Firm Value: A Literature Overview and Valuation Approach

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Abstract

This study provides a comprehensive review of recent research on the impact of Environmental, Social, and Governance (ESG) factors on corporate value and examines how ESG considerations can be integrated into traditional valuation models. Using a comparative synthesis of prior empirical and theoretical studies, the paper identifies key mechanisms through which ESG influences firm value, including expected cash flow, cost of capital, and intangible assets. The findings reveal that while ESG performance generally enhances firm value, the direction and magnitude of its effects vary substantially across industries and markets. The study also reviews major valuation approaches, including the income-based (with a focus on the discounted cash flow model), market-based, cost-based, and emerging hybrid models, all used to quantify ESG's financial implications. Despite the growing academic and professional interest in ESG valuation, empirical evidence shows a lack of standardization in data quality, model structure, and estimation techniques. By synthesizing existing knowledge and identifying key methodological gaps, this paper opens new avenues for future research on integrating ESG metrics into corporate valuation frameworks, aiming to enhance the reliability and comparability of ESG-related valuation practices.

***Keywords*:** *business valuation, ESG, enterprise value, valuation*

1. Introduction

ESG is an abbreviation for Environmental, Social, and Governance and represents a set of criteria used to evaluate a company's sustainability performance and ethical impact. The growing global attention to ESG is closely associated with the rise of sustainable investment practices and global sustainable development initiatives. Negative events such as environmental disasters, labor scandals, and corporate collapses due to fraud have reinforced the understanding that environmental, social, and governance factors have tangible effects on corporate financial performance and risk exposure. Conversely, companies that are pioneers in implementing ESG practices often gain competitive advantages through enhanced reputation, reduced risk-related costs, and improved access to capital at lower costs.

The increasing importance of ESG stems from the heightened awareness among consumers and investors, who now demand greater corporate accountability for social and environmental impacts. Institutional investors are increasingly considering ESG factors in their investment decisions, viewing strong ESG performance as an indicator of long-term success. Integrating ESG helps capture non-financial risks and opportunities that may affect a firm's long-term value, as well as its level of responsibility toward society and the environment. Consequently, ESG has become a focal point in both academic research and business practice, with many investors and financial institutions recognizing ESG performance as a signal of a firm's sustainable success. Professional valuation organizations have also been developing financial tools to assess the extent to which ESG factors influence firm value. However, the magnitude and mechanisms of ESG's impact, as well as the financial tools for quantifying such effects, remain subjects of ongoing global debate.

Although the number of academic studies examining the relationship between ESG and firm value has increased significantly over the past decade, research findings remain inconclusive. Moreover, approaches to integrating ESG into valuation models are often limited to conceptual guidance and have yet to provide comprehensive quantitative measures. Therefore, this review paper aims to synthesize key findings from prior studies, theoretical foundations, and valuation models, and to identify existing research gaps.

2. Objectives

This paper seeks to address the following objectives by answering these questions:

1) What is ESG, and how does it influence firm value?
2) How have empirical studies demonstrated the effects of the Environmental (E), Social (S), and Governance (G) components on firms?
3) What approaches and models can incorporate ESG into business valuation practices?

3. Materials and Methods

3.2. Literature Review and Theoretical Framework

3.2.1. Global Regulatory Developments on ESG in Valuation and Financial Reporting Standards

The International Valuation Standards Council (IVSC) has begun incorporating Environmental, Social, and Governance (ESG) factors into its most recent edition of the International Valuation Standards (IVS). The version of IVS effective from January 31, 2025 (published at the end of 2024) introduces, for the first time, an official definition of ESG as follows: *"Environmental, Social and Governance (ESG) – criteria that collectively establish a framework for evaluating the impact of sustainable and ethical practices, as well as the financial or operational performance of a company, asset, or liability. ESG comprises three pillars: Environmental, Social, and Governance, all of which may collectively influence performance, the broader market, and society."*. In other words, the IVSC views ESG as a framework of criteria for identifying and measuring the influence of sustainability and ethical factors on the value of assets or enterprises.

Beginning in 2025, the International Valuation Standards explicitly require valuers to consider relevant ESG aspects, and the IVSC has provided a guidance list detailing the specific elements under each of the E, S, and G pillars. This inclusion aims to enhance consistency and transparency when assessing the impact of factors such as energy efficiency, climate risk, labor standards, or governance structure on the market value of assets. This reflects a broader trend in which investors and valuation professionals increasingly regard ESG as a critical valuation variable, necessitating specialized analytical competencies in ESG within valuation practice.

The ESG factors described in the 2025 IVS are summarized as follows:

(1) Environmental factors may include, but are not limited to air and water pollution; biodiversity; climate change (current and future risks); access to clean water and sanitation; carbon and other greenhouse gas emissions; deforestation; natural disasters; resource scarcity and efficiency (e.g., energy, water, and raw materials); and waste management.
(2) Social factors may include, but are not limited to, community relations; conflicts; customer satisfaction; data protection and privacy; human capital development (health and education); employee engagement; gender and racial equality; health and well-being; human rights; working conditions; and workplace environment.
(3) Governance factors may include but are not limited to, governance structure and board composition; accountability and transparency; executive incentives and compensation; risk management and legal compliance; anti-corruption and anti-bribery policies; professional ethics and integrity; internal control systems; disclosure and reporting; stakeholder relations; and the independence of internal and external audits.

The International Financial Reporting Standards (IFRS) Foundation, which oversees and supports the International Accounting Standards Board (IASB), the body responsible for issuing International Financial Reporting Standards, has established the International Sustainability Standards Board (ISSB) to develop globally consistent ESG reporting standards. In 2023, the ISSB released its first two sustainability disclosure standards: IFRS S1 (*General Requirements for Disclosure of Sustainability-related Financial Information*) and IFRS S2 (*Climate-related Disclosures*). IFRS S1 requires entities to disclose sustainability-related risks and opportunities that could significantly affect a company's cash flow, access to finance, or cost of capital over the short, medium, or long term. Both IFRS S1 and S2 focus on financial materiality from an investor's perspective, recognizing that ESG factors can materially influence a firm's value and profitability. The overarching objective of IFRS S1 and S2 is to standardize ESG-related disclosures about risks and opportunities that may impact a company's business performance and financial outlook. The underlying philosophy of IFRS/ISSB is investor-oriented: ESG disclosures must enable users of financial statements to assess how sustainability considerations affect a company's enterprise value, cash flows, and future profitability.

3.2.2. Literature Review on the Impact of ESG Factors on Firm Value

The observations above indicate that ESG exerts a significant influence on corporations and their value; however, the nature and mechanisms of this influence remain a major question. Numerous studies worldwide have examined the effects of the Environmental (E), Social (S), and Governance (G) dimensions on firms and their valuation. From a valuation perspective, ESG factors are increasingly recognized as determinants of corporate value. This recognition has motivated valuers and analysts to explore methods for quantifying these social and sustainability-related factors. Although measurement remains challenging, a clear trend has emerged, with the capital market progressively capitalizing ESG considerations into firm value.

At a broad level, research exploring ESG's impact across industries and regions has reported predominantly positive effects. Amel-Zadeh & Serafeim (2017), in a global survey of 413 senior investment professionals from asset management and ownership institutions, found that 82% of respondents use ESG information in their investment decisions, believing that ESG is material to financial performance. The two most valued applications were the integration of ESG into equity valuation and active ownership strategies. Similarly, Henisz et al. (2019) identified five main mechanisms through which ESG can create value: (i) revenue growth, (ii) cost reduction, (iii) mitigation of legal risks, (iv) enhanced labor productivity, and (v) optimization of investment and asset allocation. Wang et al. (2022), in a systematic review of 432 papers published between 2010 and 2022, classified ESG's impact mechanisms into three categories: risk reduction, information improvement, and long-term strategy, notably distinguishing between ESG implementation and ESG disclosure.

Empirical evidence also supports these findings. Aydogmus et al. (2022) demonstrated that ESG implementation positively affects firm value and profitability, particularly through the E and S components. Jung & Yoo (2023) found a statistically significant positive relationship between ESG activities and firms' financial performance. Postiglione et al. (2024), through a comprehensive literature synthesis, concluded that ESG reduces both the cost of equity and debt capital, thereby enhancing firm value. Tripopsakul & Puriwat (2022) further showed that ESG strengthens brand trust, which in turn increases customer engagement and loyalty. Across industries, the influence of ESG on firm value varies considerably. In the banking and financial sector, Li et al. (2021) compiled evidence from the U.S., Europe, and Asia showing that the Governance (G) pillar strongly affects financial performance and market value, given the sector's dependence on transparency and risk management. In the tourism and hospitality industry, Ionescu et al. (2019), analyzing 73 listed firms from 2010 to 2015, found that ESG enhances market value, with governance having the most pronounced effect. In transportation and heavy industries, Pham et al. (2022) found that the Environmental (E) factor has a positive and significant impact on operational performance, whereas the effect of Governance (G) was less evident reflecting the sector's environmental pressures and compliance burdens. Tan (2022) highlighted that in professional service industries, ESG creates value primarily through intangible assets such as brand equity, human capital, and client relationships. In contrast, for manufacturing or supply-chain firms, ESG is often treated as a compliance requirement rather than a direct value driver.

Overall, the influence of ESG on firm value is not homogeneous across global studies; it is contingent upon factors such as geographic development level and industry characteristics. Accordingly, many researchers distinguish between developed and emerging markets to capture these variations. According to FTSE Russell (a subsidiary of the London Stock Exchange Group), *developed markets* are characterized by mature financial–legal systems, high transparency, and well-established capital markets (e.g., the U.S., Europe, Japan, Australia). In contrast, *emerging markets* such as South Korea, Vietnam, and Thailand exhibit rapid economic growth but less mature financial infrastructure, uneven transparency, and less consistent ESG reporting standards.

Studies in Developed Markets

In developed markets such as the U.S. and Europe, research shows that ESG has a clear impact on firm value, though the magnitude and direction vary across industries.

In the financial and banking sectors, many studies confirm that ESG contributes to increasing market value and reducing risk. Thornton & Di Tommaso (2020) found that a high ESG score helps European banks control risks and enhance firm value, with the governance (G) pillar playing a prominent role in ensuring long-term sustainability. Similarly, Alareeni & Hamdan (2020) reported consistent findings for companies listed in the S&P 500 index in the U.S., where ESG particularly the governance dimension, improves performance and market value by strengthening transparency and investor confidence.

In industrial, manufacturing, and service sectors, the impact of ESG is multidimensional. Alareeni & Hamdan (2020) indicated that in manufacturing and industrial firms, the environmental (E) pillar is particularly

significant due to resource-intensive operations, though implementation costs may reduce short-term financial gains. Conversely, in service, technology, and consumer sectors, ESG enhances brand reputation and attracts investors, primarily through social (S) and governance (G) factors. Research on sustainable entrepreneurship in Europe by Mansouri & Momtaz (2022) also confirmed that ESG is a core element in startup valuation, facilitating capital access, lowering capital costs, and creating long-term competitive advantages.

Studies in Emerging Markets

In emerging markets, empirical evidence largely supports that ESG affects firm value similarly to developed markets but often to a lesser extent.

In the financial and banking sector, multiple studies report consistent results. Recent Asian studies by Do et al. (2023), Nguyen et al. (2024), and Pham et al. (2025) demonstrate that ESG improves reputation, increases customer satisfaction and loyalty, reduces information asymmetry and risk, thereby enhancing profitability, lowering capital costs, and increasing firm value.

For environmentally and socially sensitive industries such as energy and mining, ESG has a stronger impact. Yoon et al. (2018) and Chang & Lee (2022) found that in South Korea, ESG enhances market value and competitiveness, particularly in high environmental risk industries. In service and consumer sectors, ESG tends to have an indirect impact through intangible assets. Koh et al. (2022) and Tripopsakul & Puriwat (2023) demonstrated that ESG improves brand reputation, corporate image, and customer trust, which foster positive consumer behavior and increase firm value. However, studies also caution that the ESG effect in emerging markets is not always consistent. According to Aouadi & Marsat (2016), ESG controversies in emerging markets may have less negative influence than in the U.S. and Europe because investors in these markets often prioritize short-term profitability. In some cases, if firms manage crises effectively, their value may even rise. On one hand, ESG has been found to enhance profitability and firm value through improved reputation, governance, and capital access (Tran & Nguyen, 2023; Le et al., 2025). On the other hand, ESG implementation costs can reduce short-term profits (Nguyen et al., 2024), and the effects of the three ESG pillars differ, with E and G tend to be more evident, while S is sometimes not fully captured in valuation (Al-Hiyari & Kolsi, 2021).

Overall, the impact of ESG on firm value is evident from previous research, though its magnitude and direction vary by market, industry, and quality of execution. The next critical question is: how can these effects be quantified into measurable figures during business valuation? This question forms the central focus of the following section.

3.2. Methods

This study employs a qualitative research approach based on a comprehensive literature review. A systematic search was conducted in reputable academic databases for English and Vietnamese studies published between 2010 and 2025, using the keywords “ESG,” “firm value,” “value,” and “valuation.” The selected articles consist mainly of peer-reviewed empirical studies examining the effects of Environmental (E), Social (S), and Governance (G) dimensions on firm performance and value.

We conducted a literature review using popular and reliable databases, including *Google Scholar*, *Scopus*, and *Web of Science*. To ensure reliability, only scholarly sources demonstrating clear methodological transparency and measurable outcomes were included. The initial search identified 100 studies, and after screening, a final sample of 45 studies was retained.

The analysis applied synthetic and descriptive methods to compile, categorize, and interpret the findings, thereby identifying recurring themes, gaps, and trends in existing ESG – valuation research. This approach allows the paper to provide an integrated understanding of how ESG factors influence firm value and how these factors can be incorporated into business valuation models.

4. Findings and Discussions

This section presents and discusses the main approaches to integrating Environmental, Social, and Governance (ESG) factors into business valuation. Drawing on previous academic studies, professional valuation standards, and recent industry practices, it analyzes how ESG considerations can be incorporated into traditional valuation models. The discussion focuses on three fundamental approaches, namely the income-based, market-based, and cost-based methods, as well as emerging hybrid models. Each approach is examined in terms of its theoretical foundation, the mechanism by which ESG factors are integrated, and the implications for assessing firm value in a sustainable context.

The IVSC, as mentioned earlier, has updated the *International Valuation Standards (IVS)* effective from 2025 to guide valuers in considering ESG factors during valuation. According to the revised standards, valuers must identify material ESG factors relevant to the asset or business being valued and assess how they affect expected cash flows or the level of risk. For example, when valuing a company using the *Discounted Cash Flow (DCF)* model, the valuer needs to consider whether the firm may face future carbon emission costs (impacting cash flows) or whether its business model faces disruption risks from clean technologies (impacting growth rates). These adjustments require a combination of financial expertise and in-depth understanding of ESG issues. Valuation methods can also be extended to reflect the value of ESG-related intangible assets. For instance, brand value may increase if a company is recognized for social responsibility but may decline sharply in the event of scandals. The *real-options valuation approach* is sometimes applied to value assets flexibly under ESG-related uncertainty. For example, the value of an oil field may depend heavily on environmental regulations: if the global transition to clean energy accelerates, the project could be abandoned; if it slows down, continued extraction remains profitable. Thus, valuation methods must account for different environmental scenarios.

A concrete example from practice illustrates this shift: in recent years, valuing coal and fossil fuel companies has changed significantly. Previously, valuation relied mainly on reserves and fuel price forecasts. Today, valuers must also account for *stranded asset risks* (reserves that cannot be exploited due to climate policies), *carbon credit costs*, and *reputational factors* (investors and banks reluctant to provide capital, leading to higher financing costs). As a result, the same coal mine may be valued at X under a traditional model, but when ESG factors are integrated, its value could drop significantly – or even to zero – if it fails to meet environmental requirements. This has been evidenced by many energy firms writing down fossil fuel assets or recognizing impairment losses in recent financial reports.

Other academic studies, including those from valuation-related organizations, have proposed various approaches to quantify ESG's impact on firm value – ranging from adjustments to discounted cash flows and cost of capital to the use of market-based measures such as *Tobin's Q*, *P/E ratio*, or *market capitalization*. Some works, beyond the income, cost, and market approaches, also experiment with hybrid models combining multiple methods.

In the field of valuation and business appraisal, ESG is increasingly integrated into valuation models – reflected through adjustments in projected cash flows, discount rates, or asset value entries. Traditional valuers, who once relied mainly on historical financial data and macroeconomic assumptions, now must also consider non-financial factors such as asset lifespan under climate change scenarios, future environmental compliance costs, or the risk of technological obsolescence (e.g., thermal power plants potentially facing early closure under carbon policy pressures). Therefore, examining these approaches not only clarifies how ESG affects financial value but also lays the groundwork for future research.

4.1. Income Approach

The *income approach* determines asset value by converting projected future net cash flows generated from the asset's use into their present value. Under this approach, the value of an asset or business is based on its ability to generate cash flows and an appropriate discount rate.

In many studies, the income approaches, especially through the *Discounted Cash Flow (DCF)* model has been emphasized as a key method for integrating ESG metrics into valuation.

The model can be expressed as follows:

$$V = \sum_{t=1}^{n} \frac{CF_t}{(1+WACC)^t} + \frac{TV}{(1+WACC)^n} \quad (1)$$

Where:

$$TV = \frac{CF_{n+1}}{WACC - g}$$

Table 1. Comparison between the Traditional DCF Model and the ESG-Integrated DCF Model

Traditional DCF Components	When Integrating ESG	Additional Explanation
CF_t	ESG-adjusted Free Cash Flow (FCF_ESG_t)	The ESG-adjusted free cash flow includes the impact on revenue, operating expenses, capital expenditures, taxes, and working capital.
WACC	ESG-adjusted WACC (WACC_ESG)	The cost of capital decreases for firms with strong ESG performance and increases for those with weak ESG performance.
TV	ESG-adjusted Terminal Value (TV_ESG)	The terminal value reflects the firm's long-term prospects and ESG-related risks.
g	Sustainable Growth Rate (g_ESG)	The long-term growth rate accounts for the company's sustainable development potential.

Source: Compiled by the authors

Although the principles remain the same, integrating ESG factors into the valuation model introduces key differences, as summarized in the table above.

Table 2. Summary of Perspectives on Integrating ESG into the DCF Model by Selected Authors/Organizations

Authors/ Organizations	Integration of ESG into DCF
(Soedirdjo, 2022), p. 4	Discount rate (WACC – Beta & Alpha): ESG is integrated by adjusting the beta coefficient and alpha risk premium. Firms with poor ESG scores → higher risk profile → higher WACC; conversely, firms with strong ESG performance → lower risk → lower WACC. (Note: Difficult to determine the appropriate adjustment level and risk of double counting if the market already prices in ESG.) Cash Flow: Integrate ESG directly into cash flow projections. Adjust long-term growth rate (ESG compliance promotes sustainable growth); simultaneously adjust cash flow components such as revenue, operating expenses, profit margin, capital expenditures, book value (impairments), and terminal value to reflect ESG impacts.
(Jones Lang LaSalle (JLL), 2022), pp.11–16	Free Cash Flow (FCF): ESG is reflected by adjusting FCF inputs – e.g., changing revenue, operating expenses, CapEx, taxes, and working capital to account for ESG impacts (e.g., green equipment increases CapEx, ESG training increases costs, sustainable products boost revenue, improved management reduces working capital). WACC: Incorporate ESG into the discount rate by adjusting the risk premium. Firms with poor ESG scores face additional risk premiums → higher WACC (lower present value); strong ESG firms → lower WACC → higher value. Beta & Alpha: Adjust beta (systematic risk) and alpha (idiosyncratic risk) to align with ESG performance. ESG-sensitive sectors (e.g., carbon-intensive industries) have higher beta; poorly rated ESG firms have higher idiosyncratic risks (higher alpha). Terminal Value: Adjust terminal value assumptions for sectors with high ESG risks (e.g., coal mining may show zero or negative growth long-term). Note: Avoid double-counting by adjusting both cash flow and WACC simultaneously. Many ESG risks are already priced into industry beta; adding an ESG premium again may distort valuation results.
(Lim, Phang, Yi, & Sen, 2024), pp.6–7	Cash Flow: ESG factors should be translated into specific cash flow adjustments rather than treated as supplementary information. The study illustrates how to adjust free cash flow for ESG: FCF_adjusted = Original FCF + additional revenue from "green" products – higher operating costs (e.g., ESG training) – sustainable technology/infrastructure investment. WACC: Integrate ESG into cost of capital by adjusting the discount rate. Firms with poor ESG performance are subject to an additional risk premium, which increases their weighted average cost of capital and reduces the present value of future cash flows. Conversely, firms with strong ESG performance benefit from a lower risk premium, resulting in a lower cost of capital and a higher firm value. WACC Adjustment Range: Business Valuation Resources recommends not exceeding ±100 basis points. Material ESG issues may justify ±50 bps; minor ESG factors, ±10 bps.

Authors/ Organizations	Integration of ESG into DCF
	Note: Check whether ESG risks are already embedded in sector assumptions to avoid double counting (e.g., if industry beta already includes ESG risk, further WACC/cash flow adjustments may distort results).

Source: Compiled by the authors

Overall, while the DCF method offers a structured way to quantify the impact of ESG on firm value, it has both advantages and limitations. Its strengths lie in reflecting ESG's influence across multiple channels—revenue, expenses, investment, discount rate, long-term growth, and terminal value—allowing firm-specific modeling. Moreover, Lim et al. (2024) provide explicit formulas and adjustment ranges, enhancing practical applicability. However, limitations remain: the lack of a unified standard, the need for deep sectoral and contextual expertise (especially in emerging markets), and the persistent risk of double counting ESG effects, which current studies mostly acknowledge without offering a definitive solution.

4.2. Market-Based Approach

The market-based approach determines the value of an asset by comparing it with identical or similar assets and/or liabilities for which price information is available. According to publicly available materials from the IVSC, when integrating ESG factors into valuation models, an ESG indicator should be incorporated into the selection of comparable companies: firms with strong ESG performance receive a premium added to their valuation multiples, while those with weak ESG performance are subject to a discount.

The valuation is conducted by benchmarking against comparable listed companies or transactions and adjusting common financial ratios such as EV/EBITDA, EV/Revenue, P/E, and P/B. However, a major challenge lies in information constraints and the potential unreliability of disclosed data, as not all companies report their ESG performance fully or accurately. Even in developed markets, discrepancies often exist between reported ESG disclosures and actual practices. In emerging markets, ESG reporting is even more limited, making the use of the comparative method less precise.

In academic studies employing cross-sectional analysis, a typical model uses the dependent variable "firm value" (Tobin's Q). Tobin's Q is widely used in quantitative research to capture how the market values a company's assets relative to their book or replacement value. Tobin's Q is calculated as:

$$Tobin's\ Q = \frac{Market\ Value\ of\ Equity + Book\ Value\ of\ Debt}{Book\ Value\ of\ Total\ Assets}$$

This ratio measures the extent to which the market values a firm above (or below) its book value. A Tobin's Q greater than 1 indicates that investors expect superior profitability and sustainable long-term value creation, while a Tobin's Q less than 1 suggests underperformance or higher risk.

In this context, Tobin's Q is employed as the dependent variable (Valuation) to test whether ESG practices or disclosures have a positive effect on firm value:

$$Valuation_i = \alpha + \beta_1 ESG_i + \beta_2 Controls_i + \epsilon_i$$

Where:

Valuation represents Tobin's Q, P/E, or P/B;
ESG is the ESG score or level of ESG disclosure;
Controls include control variables such as firm size, leverage, ROA, and industry.

A positive coefficient β_1 (>0) indicates that ESG contributes to higher market valuation.

Empirical evidence generally supports a positive relationship, though the strength and mechanisms vary. Huynh (2024) examined Southeast Asian firms (2016 – 2020) and found that ESG positively and significantly influences Tobin's Q, with ownership structure acting as a moderating variable. Le & Bui (2025), using a sample of 199 Vietnamese firms (2019 – 2023), confirmed that ESG affects market value both directly and indirectly through ROE, while indirect effects via TAT or NPG were insignificant. On a global scale, Le et al. (2025), analyzing 1,552 firms across 12 countries with a Gaussian Copula-adjusted polynomial regression model, discovered a non-linear, S-shaped relationship between ESG and firm value – indicating that ESG's marginal

costs and benefits vary across stages. Similarly, Naeem et al. (2022) found ESG to positively affect ROE and Tobin's Q in environmentally sensitive industries, with stronger effects in developed markets. Hamdouni (2025) further emphasized that transparent ESG disclosure enhances stock prices and market value in the short term.

Overall, the market-based approach offers advantages of being intuitive, data-driven, and closely linked to actual market information. By adjusting common valuation multiples (P/E, P/B, EV/EBITDA, EV/Revenue), analysts can reflect the market's ESG-related premiums or discounts. This approach is particularly reliable in developed markets, where ESG information is widely disclosed and already embedded in stock prices, thus minimizing subjectivity in valuation. However, its main limitation lies in the dependence on the transparency and reliability of ESG data. Incomplete or misleading ESG disclosures remain widespread, and even in advanced markets, inconsistency among companies and rating agencies persists. In emerging markets, limited ESG disclosure further reduces accuracy. Moreover, applying ESG-based premiums or discounts may overlap with other risk factors (e.g., size, leverage, industry), leading to valuation distortion. Additionally, this method captures only current market perceptions, making it less effective in reflecting ESG's long-term impacts on firm value.

4.3. Cost-Based Approach

The cost-based approach estimates the value of an asset by calculating the replacement or reproduction cost and then deducting depreciation or obsolescence. When integrating ESG factors, the valuation model adjusts the replacement or upgrade costs necessary to meet ESG standards.

In his 2022 study on real estate valuation, Konialidis argued that the cost approach can capture the value added from upgrading assets to comply with ESG requirements, though it is not the primary method (Konialidis, 2022). This approach is rarely applied to overall business valuation, as quantifying ESG-related renovation costs and corresponding value gains, especially for intangible factors such as governance, brand, or stakeholder relationships is difficult. Furthermore, considering only ESG-related expenditures overlooks long-term prospects and indirect financial impacts (e.g., cost of capital, revenue growth, regulatory risk mitigation).

Hence, the cost approach is more suitable for tangible assets that can be directly measured (e.g., real estate, machinery, equipment), while most ESG-related value resides in intangibles. Consequently, in practice, this approach is used as a supplementary method in specific cases rather than a core valuation framework when assessing ESG's impact on firm value.

4.4. Hybrid Approaches and Emerging Models

As with conventional asset valuation, quantifying ESG's impact on firm value can combine multiple approaches or include mediating and moderating variables. ESG as a "new valuation paradigm," integrating DCF models with market-based multiples (N.V., 2022). Bai et al. (2025) demonstrated that ESG influences firm value in the sports industry through the mediating role of intangible assets and the moderating role of policy environment. Hamdouni (2025) also examined the effect of ESG disclosure on market value using advanced panel data models (FE, GMM) and confirmed the positive impact of transparency in ESG reporting.

Hybrid approaches and new models offer greater flexibility and a more comprehensive reflection of ESG's influence on firm value. However, they require high-quality, extensive datasets and complex analytical techniques that may not be readily available, especially in emerging markets. Integrating multiple variables also raises risks of redundancy and limits generalizability across industries. Overall, this is a promising direction, as it can overcome limitations of traditional models. Nonetheless, standardized metrics and unified measurement frameworks are needed to enhance the practical applicability of ESG-integrated valuation methods.

Konialidis (2022) further emphasized the IVSC's position that, although ESG affects business valuation, there is still no unified quantification methodology. Moreover, empirical evidence on ESG's impact on cost of debt, credit conditions, or valuation in mergers and acquisitions remains limited. These research gaps suggest future directions for developing more comprehensive frameworks, models, and valuation methodologies in both global and market-specific contexts.

5. Conclusions

The overview of existing research indicates that ESG factors indeed influence corporate value; however, the degree and mechanism of this impact depend on various aspects such as industry, sector, market conditions, and the implementation context of ESG practices. ESG is now widely regarded as an essential indicator of a company's long-term sustainable value. Strong ESG performance enhances risk management, corporate

reputation, and competitiveness while potentially lowering the cost of capital, thus, contributing to the long-term increase in enterprise value.

Numerous international studies have confirmed the economic benefits of ESG, with most demonstrating a positive relationship between ESG performance and financial outcomes. In developed markets, all three ESG pillars (Environmental, Social, and Governance) have been found to exert a positive influence on firm value. In contrast, evidence from emerging markets remains inconsistent; the Governance (G) dimension tends to play the most significant role, while Environmental (E) impacts are often weak due to limited enforcement and lower investor prioritization. The ESG effect also varies across industries: for example, in low-polluting sectors, companies with high ESG scores generally exhibit higher market valuations, whereas in heavy or high-emission industries, the effect is statistically insignificant. Overall, ESG serves as a long-term value driver through enhanced corporate image, investor trust, and competitive advantage. Nonetheless, accurately quantifying ESG's contribution to firm value remains challenging due to inconsistent evaluation standards and difficulties in measuring long-term effects.

Research has identified three main approaches and the hybrid approaches to integrating ESG into business valuation: (1) Income-based approach – adjusting cash flows and the cost of capital within the DCF model; (2) Market-based approach – applying market multiples that reflect ESG-adjusted valuation ratios; (3) Cost-based approach – incorporating ESG into cost or replacement models; or (4) Hybrid approaches that combine several valuation methods. Each approach has its advantages and limitations. Common challenges include the lack of standardized measurement frameworks, data inconsistency, and subjective estimation methods. Methodologically, many current studies rely on simple linear regressions that fail to fully capture all influencing variables. Similarly, the integration of ESG factors into valuation models (such as DCF, WACC adjustments, or comparative financial ratios) lacks unified standards, leading to potential double-counting or subjective bias. Moreover, empirical research primarily focuses on large, listed companies, with limited exploration of small and medium-sized enterprises, private firms, or asset-level analyses. Mediating and moderating factors such as financial performance, intangible assets, ownership structure, and institutional frameworks – also remain underexplored, though they are crucial to understanding ESG's impact.

Finally, a significant gap persists between theory and practice. Although international valuation organizations like IVSC have issued general principles for incorporating ESG, a standardized quantitative framework applicable to valuation professionals in real-world scenarios is still absent. In Vietnam, ESG integration into business valuation is at an early stage; no official valuation standards explicitly incorporating ESG factors exist, and current guidance remains largely suggestive. It is hoped that in the future, financial models and valuation frameworks will increasingly standardize the estimation and integration of ESG value into enterprise appraisal practices.

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