ESG Assessment and Stock Performance: A Systematic Literature Review and Research Agenda

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ABSTRACT

This is a systematic literature review that summarizes 571 empirical and methodological studies that studied the implications of Environmental, Social, and Governance (ESG) assessment of stock performance and investment choices between the year 2000 and 2025. We examine the multidimensional associations between ESG integration and financial performance in developed and emerging markets through the application of a strict scoping methodology, including citation chaining and relevance scoring. We find that the association between ESG performance and stock returns is more positive or neutral in nature, with the environmental factors proving to have more direct and consistent financial gains, whereas social and governance effects are even more context dependent. An important observation is the lack of regional homogeneity: developed markets have much more robust ESG-financial performance associations, and emerging markets encounter difficulties associated with data quality, regulatory frameworks, and institutional gaps in governance. The review of crisis periods, especially the analysis of the COVID-19 pandemic, highlights the importance of ESG in increasing the resilience of stocks and reducing downside risk. But the inconsistency of methods used to measure ESG, differences between ratings across agencies, and insufficient longitudinal studies limit causal inference. Our six research priorities are standardization of ESG measures, the identification of causes and effects that are disaggregated, the dynamics of emerging markets, long-term horizon research, and validation of artificial intelligence integration. This survey offers investors, corporate managers, and policymakers a general framework of how ESG has a complex and context-specific impact on investment performance and suggests a systematic agenda towards the promotion of sustainable finance research.

Keywords: ESG, stock performance, investment decisions, systematic literature review, sustainable finance, corporate governance.

INTRODUCTION

The study of the consequences of Environmental, Social, and Governance assessment on the stock performance and decision-making in investment has become an area of crucial interest because of its increasing role in the sustainability of corporations and financial markets across the globe (Fidanza, 2025; Juthi et al., 2024). Since the beginning of the 2000s, the ESG considerations have experienced a transition of interest to the niche level of ethical considerations to mainstream investment requirements, which has fundamentally transformed the way investors are able to consider corporate performance and capital allocation. The world's sustainable investment market has increased significantly, and assets under management that have been ESG-integrated into investments have reached record levels in the developed and emerging economies. This shift indicates an increased interest in knowing more about sustainability risks, regulatory compulsions to

increased disclosure, and increasing evidence of the relationship between ESG practices and financial performance.

Regardless of the numerous studies conducted, the issue of the connection between ESG evaluation and stock performance is somewhat controversial and exhibits contradictory results. Other researchers mention positive links between ESG performance and financial returns (Deb, 2025; Juthi et al., 2024; Song, 2024), whereas others note that there are neutral or negative correlations between these variables (Cheng and Huang, 2024; Chen, 2024; Stasytyte, 2024). These inconsistencies are explained by several factors: a differentiation in ESG measurement procedures by different rating agencies, differentiation in sample composition with different geographic areas and industrial sectors, and differentiation in time horizons that are observed in research (Fidanza, 2025; Tabur and Bildik, n.d.; Jin et al., 2024). Moreover, there are still conflicting views on whether one of the pillars of ESG is more significant than the other, with governance being more closely associated with financial performance in developed economies and the environment being the primary factor in emerging ones (Segura et al., 2024; Parikh et al., 2023; Gangwani and Kashiramka, 2024).

The effects of these knowledge gaps go beyond the academic discussion, and they are tangible challenges both to investors creating a portfolio in accordance with sustainability goals and to policymakers creating effective ESG regulations (Mangla, 2024; Irianto et al., 2025). Asset managers need to know clearly whether ESG integration improves or limits risk-adjusted returns, and corporate executives need to be advised about which aspects of ESG dimensions are likely to generate shareholder value in a particular situation. The financial materiality of information disclosed through regulatory bodies is also imperfectly understood, as several jurisdictions are enforcing mandatory requirements to report on ESG. The unstandardized ESG metrics also make it difficult to compare cross-firm and cross-regional performance, further compromising market efficiency and potentially allowing greenwashing practices.

The theoretical framework that has been established to represent this review defines ESG as a three-dimensional construct that involves environmental stewardship, social responsibility, and corporate governance (Fidanza, 2025; Zeng, 2025; Kim and Li, 2021). These dimensions are interrelated to affect the risk profile of firms, their value in the market, and investor actions in several ways, such as risk mitigation, improved reputation, operational efficiency, and compliance with the regulations (Chen et al., 2023; Gong, n.d.). Environmental factors deal with how a firm affects the natural systems by being carbon emitters, resource efficient, and waste disposers. Social aspects include the labor practices, diversity and inclusion, community relations, and development of human capital. Governance refers to corporate control systems, executive remuneration, shareholder rights, and transparency systems. The inclusion of ESG factors in investment decision-making is believed to influence financial performance in the value creation and risk mitigation channels.

This literature review is a systematic attempt to draw an abstract critical synthesis of the multifaceted research on the impact of ESG assessment on stock performance and investment decisions with respect to methodological differences and industry heterogeneity. In particular, it aims to accomplish five goals, the first one being to assess the existing state of knowledge regarding the relation of the ESG assessment dimensions to stock market performance in the global context; the second goal is to assess existing practices in the ESG measurement, rating systems, and their impact on investment choices; the third one is to assess regional and sectoral differences in the effects of the ESG on financial performance and risk management; the fourth one is to compare the effects of the disaggregated pillars of ESG on the evaluation of stock values during the crisis and non-crisis times; the fifth objective is the review sheds light on the situations where the integration of ESG is value-added, and the gaps that still exist and need to be addressed by scholars.

THEORETICAL FRAMEWORK

The conceptual perspectives on finance, strategic management, and organizational theory underlie the theoretical bases connecting ESG performance to financial performance. This section expresses the main theoretical processes by which the ESG variables can shape the stock performance and investment decision and serves as a frame for interpreting empirical evidence that is synthesized in the following sections.

Stakeholder Theory and Value Creation

The stakeholder theory assumes that companies generate value through the management of the relationship with various stakeholder groups, rather than just shareholders, and these stakeholder groups can be employees, customers, suppliers, communities, and the natural environment (Freeman, 1984). In this sense, ESG performance is the ability of a firm to reconcile the interests of various stakeholders, and as such, it creates intangible resources like reputation, trust, and social license to operate. Competitive advantages from high ESG can be accomplished by increasing customer loyalty, employee recruitment and retention, better supplier relations, and less regulatory scrutiny. All these benefits are financial gains, such as an increase in revenue, low cost, and minimized operational risks. Stakeholder perspective indicates that ESG investments are value-creating when they consider material stakeholder issues that are applicable in the industry and the operating environment of the firm.

Signaling Theory and Information Asymmetry

There is another mechanism that connects ESG disclosure and financial outcomes through the signaling theory. ESG performance and disclosure can act as an indicator of quality management, organizational competence, and long-term orientation in capital markets where corporate insiders and external investors have an information asymmetry (Tamasiga et al., 2024; Lohia and Maji, 2025). Companies that practice good ESRs send a message that they can handle sophisticated relations with their stakeholders and the emergence of unexpected risk, thus minimizing the uncertainty that investors have and lowering the cost of capital. In contrast, a low ESG rating or low disclosure can be an indication of more risks or poor management practices that result in increased risk premiums and lower market values. This theoretical approach highlights how ESG transparency and disclosure quality can help the market to provide efficiencies and make informed investment choices (Pratiwi and Edeh, 2024).

Risk Management and Downside Protection

A third theoretical approach focuses on the approach of ESG as a risk management tool and a downside protection tool. Companies that have a strong ESG can be more prepared to prevent disastrous events like environmental disasters, governance scandals, or social controversies, which can drastically affect stock prices (Thompson, 2025; Xie, 2024). The underlying idea of this risk mitigation mechanism implies that the central tendency or the right tail of the return distributions is mostly not impacted by the ESG integration, but the extreme negative returns are insured by *the given* approach as a way of risk management. The risk management school of thought is also consistent with the evidence that the positive effects of ESG are stronger in times of crisis when companies experience increased operations and reputation risks (Ma, 2024; Meier et al., 2024). Portfolio-wise, systematic risk may be minimized through ESG integration and turn the portfolio into stormproof.

Institutional Theory and Legitimacy

The institutional theory sheds light on the impact of regulatory structures, social standards, and cultural pressures on the adoption of ESG and their fiscal implications. Companies are placed in institutional setups that outline what is correct in organizations, as well as legitimize those who adhere to the rules (Luo et al., 2024). In well-developed markets with well-established ESG disclosure policies and stakeholder advocacy, the ESG performance may be a condition of market legitimacy, which may explain the superior relationship between ESG and financial performance in such environments. On the other hand, ESG adoption in emerging markets where institutional pressures are not so strong can be less compulsory and therefore reflect more on the quality of management. The institutional approach emphasizes the quality of regulations and enforcement and the cultural setting as moderating the financial materiality of ESG in diverse geographic settings.

RESEARCH METHODOLOGY

This study employs a systematic literature review with a scoping approach, aimed at comprehensively mapping the research field of ESG assessment implications on stock performance and investment decisions. The

methodology follows established principles for rigorous literature reviews in finance and management, including systematic search procedures, clear inclusion criteria, a structured quality evaluation, and thematic synthesis.

Search Strategy and Query Transformation

The first research question—concerning the implications of ESG evaluation for stock performance and investment choices—was converted into several specific search statements to ensure comprehensive coverage. The transformation plan narrowed the broad research question into multiple focused queries, making the literature search both thorough and feasible. The reassembled queries covered cross-regional evidence, disaggregated ESG pillars, crisis-period dynamics, and regulatory disclosure effects. Backward and forward citation chaining complemented primary database searches to identify foundational works and recent developments. Backward citation chaining traced reference lists of core articles to locate seminal studies, while forward citation chaining followed papers that cited core works to capture emerging debates and methodological advances.

Inclusion and Exclusion Criteria

Included studies were required to: (a) focus on ESG assessment and financial performance relationships, either empirically or methodologically; (b) be published in peer-reviewed journals, conference proceedings, or working paper series; (c) cover the period 2000–2025; and (d) be written in English. Exclusion criteria comprised: (a) studies addressing only non-financial ESG outcomes without discussing investment or stock performance implications; (b) studies with methodological weaknesses unsuitable for their design; and (c) editorials, commentaries, or opinion pieces lacking systematic analysis. The initial search yielded 575 candidate papers; after screening, 571 were deemed relevant to the research objectives. A relevance scoring process ranked papers by topical fit, resulting in 234 highly relevant studies selected for detailed analysis.

Quality Assessment, Coding, and Weighting

To move beyond general descriptions of quality, a multi-step appraisal process was implemented.

Quality Assessment Tool: Each study was evaluated using adapted criteria from the Mixed Methods Appraisal Tool (MMAQ; Hong et al., 2022). Four dimensions were assessed: (1) appropriateness of research design for the research question; (2) methodological rigor (sample size, analytical techniques, handling of endogeneity/causality); (3) transparency in ESG measurement and data sources; and (4) consideration of contextual factors (region, sector, time period). Based on these criteria, studies were rated as high, moderate, or low quality. Low-quality studies were excluded from the primary synthesis but retained for sensitivity analysis.

Coding Framework: A standardized data extraction form captured key information: bibliographic details, research questions, geographic scope, sample characteristics, ESG measurement approach, financial performance metrics, methodological technique, main findings and effect sizes, reported limitations, and potential conflicts of interest. The coding scheme was developed iteratively, with categories refined during pilot testing on ten randomly selected studies.

Inter-coder Reliability: To ensure consistency, two researchers independently coded a random 20% sample of the included studies. Inter-coder agreement exceeded 85% for all coding categories. Disagreements were resolved through discussion and refinement of the coding manual.

Weighting of Evidence: In the synthesis, findings from high-quality studies were given greater weight. Sensitivity analyses were conducted to verify that conclusions remained robust when studies of moderate quality were included or excluded. This weighting approach ensured that the overall conclusions were not disproportionately influenced by methodologically weaker contributions.

Analytical Framework

The analytical framework comprised three components: descriptive mapping, thematic synthesis, and critical assessment.

- Descriptive mapping summarized the distribution of studies by methodology, geographic focus, industrial sector, and temporal trends.
- Thematic synthesis followed the six-phase approach of Braun and Clarke (2006): familiarization, initial coding, theme development, theme review, theme definition, and report production. The iterative coding and categorizing process identified key themes across the literature.
- Critical assessment examined methodological quality, identified discrepancies and congruencies in research findings, and evaluated the strength of evidence for significant conclusions.

The framework addressed five substantive dimensions: (1) ESG measurement approaches; (2) financial performance effects; (3) regional and sectoral differences; (4) regulatory and governance influences; and (5) crisis versus non-crisis contexts. This multi-dimensional structure enabled systematic cross-study comparison while preserving the complexity and context-dependence of the ESG-financial performance relationship.

RESULTS AND SYNTHESIS

Literature Descriptive Summary

The literature review comprises 571 works of interest published from 2000 to 2025, reflecting the growth and diversification of ESG research over two decades. Methodological approaches include panel regressions, cross-sectional studies, event studies, portfolio optimization, machine learning, and meta-analyses. Geographic distribution shows a bias toward developed markets (Europe and North America), although recent years have seen increasing attention to emerging markets in Asia, Latin America, and Africa. Sectoral coverage spans financial services, manufacturing, energy, technology, healthcare, and extractive industries, with ESG-financial performance relations varying significantly across sectors.

ESG-Financial Performance Relationship

The most common conclusion is a positive or neutral correlation between ESG performance and stock returns. Of the 234 highly relevant studies, 112 that specifically examine the ESG-financial performance relationship report overall positive evidence, albeit with significant qualifications regarding magnitude, consistency, and moderating variables. Friede, Busch, and Bassen (2015) conducted a historical meta-analysis of over 2,000 empirical studies and found that most show positive or neutral ESG-financial performance correlations across asset classes and regions. More recent research confirms these results while emphasizing the importance of methodological choices, time horizons, and contextual factors.

Nevertheless, conflicting results persist and warrant careful interpretation. Cheng and Huang (2024) find negative correlations between composite ESG scores and stock returns among S&P 500 firms, with high-ESG companies exhibiting greater volatility during the pandemic. Chen (2024) reports weak negative associations between ESG scores and return on assets, while Stasytytė (2024) finds no significant relationship between ESG ratings and stock returns in US markets.

These contradictions stem from three primary sources:

- Measurement divergence: Studies using different rating agencies (MSCI vs. Sustainalytics) often reach opposite conclusions because provider methodologies, weighting schemes, and scope differ (Fidanza, 2025; Jin et al., 2024).
- Temporal framing: Crisis-period studies consistently show positive ESG effects, whereas long-horizon studies yield more muted or neutral results (Ma, 2024; Meier et al., 2024).

- Aggregation versus disaggregation: Studies that aggregate ESG pillars into a composite score obscure opposing effects, leading to weaker or even negative composite findings even when individual pillars show positive associations (Siddiqui et al., 2024; Gül & Altuntaş, 2024).

Thus, the apparent inconsistency is largely an artifact of measurement and methodological design rather than a fundamental absence of relationship.

Disaggregated Pillar Effects of ESG

Disaggregated analysis reveals distinct patterns for environmental, social, and governance pillars.

Environmental factors exhibit a relatively stable positive association with stock returns, particularly in high-risk industries such as energy, manufacturing, and resource-intensive sectors (Tutar et al., 2025; Onomakpo, 2025). The environmental pillar benefits from comparatively harmonized metrics (carbon emissions, energy efficiency, waste management), facilitating cross-firm comparison and investor evaluation. Evidence consistently shows that environmental performance is especially valued during periods of heightened climate risk awareness and regulatory pressure.

Social factors show more variable and context-dependent effects. While social performance contributes to long-term value through reputational capital, its short-term financial impact is less pronounced and harder to quantify (Gonçalves & Barros, 2023). The social dimension encompasses diverse elements—employee well-being, community engagement, diversity, human rights—whose financial materiality varies widely across industries. Studies that fail to account for sector-specific materiality often report null or conflicting social-performance effects.

Governance factors yield mixed findings that systematically depend on institutional quality. In developed markets with strong regulatory frameworks, governance shows a consistent positive association with financial outcomes. Parikh et al. (2023) find that in Indian markets, governance positively affects equity returns while environmental factors show negative effects, illustrating that pillar materiality is contingent on institutional environment and development level.

Table 1. Disaggregated ESG Pillar Effects on Financial Performance

ESG Pillar	Financial Impact	Key Moderating Factors
Environmental	Positive, stable, stronger in high-risk sectors; valued during climate risk periods	Regulatory pressure, sector materiality, carbon pricing mechanisms
Social	Variable; long-term value creation; context-dependent; measurement challenges	Industry context, labour intensity, stakeholder expectations, community relations
Governance	Mixed; stronger in developed markets; risk mitigation focus; board effects vary	Institutional quality, ownership structure, regulatory environment, board composition

Regional and Market Development

Regional heterogeneity is a robust finding. ESG-financial performance relationships are consistently more positive in developed markets, particularly Europe and North America. Deb (2025) concludes that positive ESG-financial associations are stronger in developed economies, where environmental factors are more salient, whereas emerging markets show greater relevance of social and governance dimensions. This pattern is explained by advanced regulatory systems, higher investor awareness, better data availability, and more institutionalized governance in developed markets. The EU's Sustainable Finance Disclosure Regulation

(SFDR) and corporate sustainability reporting mandates have systematized ESG integration in investment decisions.

Emerging markets present a more complex picture with mixed associations and implementation barriers. Azizah and Haron (2025) document both positive and negative ESG-financial impacts in Indonesian and Malaysian capital markets shows positive correlations with market value and equity returns alongside negative correlations with asset returns. Siddiqui et al. (2024) identify positive pillar-level effects in developed markets but inconsistent findings in emerging markets, highlighting the moderating role of institutions. Key challenges in emerging markets include poor ESG data quality and coverage, weak regulatory enforcement, limited investor awareness, and governance gaps that inhibit the financial materiality of ESG. Nonetheless, substantial opportunities for ESG value creation exist in these regions, particularly as regulatory frameworks evolve and global investors increasingly incorporate ESG criteria.

The divergence between developed and emerging market findings is not a contradiction but a reflection of institutional context: where institutions are strong, ESG signals genuine commitment and translates into financial value; where institutions are weak, ESG may remain symbolic or face implementation challenges that dilute financial effects.

Crisis Period Dynamics

Crisis periods, especially the COVID-19 pandemic, have served as natural experiments illuminating ESG's role in stock resilience and risk mitigation. Ma (2024) finds that higher ESG scores are associated with better stock performance during the COVID-19 crisis, with effects varying by industry (strongest in technology). Meier et al. (2024) show that environmental and social factors enhance stock resilience during crises, whereas governance factors were not critical during the pandemic. These findings indicate that ESG integration acts as a shock absorber during systemic disruptions, providing downside protection when operational and reputational risks escalate.

Resilience operates through multiple channels: strong stakeholder relationships facilitate adaptation during disruptions; environmental efficiency reduces operating costs when revenues decline; and social capital (employee loyalty, community support) enables organizational flexibility. Lin and Swain (2024) confirm that negatively screened sustainable investments preserve investor surplus in crises, with ESG indexes exhibiting similar systematic risk profiles to conventional benchmarks.

Notably, the positive ESG effects observed during crises contrast with the more neutral findings in stable periods. This temporal heterogeneity suggests that ESG functions partly as a form of "downside insurance" rather than a consistent alpha generator, a distinction that reconciles otherwise contradictory results across studies with different time horizons.

Regulatory and Disclosure Influences

Regulatory frameworks and disclosure quality strongly shape the financial relevance of ESG factors. Lohia and Maji (2025) establish that ESG disclosure positively affects financial performance, with legal systems playing a significant moderating role. Zhang et al. (2023) demonstrate that mandatory ESG disclosure improves price discovery efficiency, underscoring the value of regulatory requirements for market transparency. Pratiwi and Edeh (2024) find that ESG disclosure enhances investor confidence and reduces the cost of capital, though issues of skepticism and reporting inconsistency persist.

Despite these benefits, persistent problems in ESG disclosure and measurement are well documented. Divergent ESG ratings across agencies (MSCI, Bloomberg, Refinitiv, Sustainalytics) create confusion for investors and complicate cross-study comparisons (Fidanza, 2025; Tabur & Bildik, n.d.; Jin et al., 2024). Greenwashing remains a concern, as firms may engage in symbolic rather than substantive ESG activities (Nguyen, 2025; Deng et al., 2024). The absence of harmonized international ESG frameworks and audit mechanisms limits the usefulness of ESG integration in investment decisions.

These regulatory and measurement challenges are a primary source of contradictory findings: studies relying on different rating providers, time periods, or disclosure regimes inevitably produce divergent results. Harmonizing measurement standards and strengthening verification mechanisms are essential for unlocking ESG's potential to enhance market efficiency and accountability.

DISCUSSION AND IMPLICATIONS

Synthesis of Key Findings

This literature review indicates that there is a predominantly positive, albeit complicated relation between ESG assessment and stock performance. The evidence that has been presented is that ESG integration is related to better or neutral financial returns, decreased downside risk, and increased crisis resilience. But each of these relationships is very context-specific, systemic in terms of geographic regions and industrial sector, ESG pillar, and market conditions. The environmental factors show more consistent positive results in terms of financial performance, specifically in high impact industries or at times when climate awareness was high. Social and governance aspects are more variable, and their impact depends on institutional circumstances, measurement and stakeholder structure.

The theoretical processes between ESG and financial performance work along various directions which might be complementary or substitutive to each other depending on the situation. According to stakeholder theory, the value addition opportunities of ESG are explained by improved reputation, customer retention, and operational efficiencies. Signaling theory sheds light on whether ESG disclosure can help in the reduction of information asymmetry and the cost of capital. Risk management views focus on the insurance-like characteristics of ESG in catastrophe insurance against tail risks. Cross-regional divergence of financial materiality of ESG is explained by institutional theory according to the stringency of regulations and cultural expectations. The diversity of mechanisms implies that the financial impact of ESG does not manifest itself in a single way, but in the form of factors of contextual mediation of the ways in which pathways are most significant in individual firms in different environments.

Methodological Limitations and Problems.

The literature review has several weak methodologies that restrict the ability to draw causal inferences and synthesize studies across studies. To begin with, the lack of consistency in the measurement of ESG is an inherent problem, and various rating agencies could use different methodologies, leading to a significant difference in ESG scores of the same companies. Such a heterogeneity of measurement erodes the dependability of results and makes it more difficult to interpret the relationships between ESG and financial performance. Second, the overwhelming utilization of short-term or cross-sectional data hampers it to comprehend the potential of ESG to create long-term values, especially in sustainability investment with long payoffs. Third, endogeneity issues exist, because better-performing firms might have resources to invest into ESG activities, which create reverse causality, which has somewhat biased estimated relationships.

Fourth, there is geographic bias on the developed markets that restrict generalizability to the emerging economies where ESG adoption has different challenges and opportunities. Fifth, the issue of sectoral heterogeneity remains underrepresented in the research that generalizes the results to industries with radically different ESG materiality characteristics. Sixth, the new use of machine learning strategies in the analysis of ESG raises the questions of algorithmic bias, interpretability, and validation to be addressed by scholars. All these methodological issues can be taken as evidence that more rigorous research designs, longitudinal studies, and context-sensitive studies are needed to gain deeper insight into ESG and its financial impacts.

Implications for Practice

The implications of the evidence for investors and asset managers are that ESG criteria should be included in construction and risk management plans for a portfolio. ESG integration may increase long-term returns, decrease volatility, and get better resilience to market downturns, but practitioners must be careful of sectoral and regional differences in ESG impacts. The disaggregated approach to ESG pillars indicates the

environmental factors can be more easily associated with financial performance, whereas the social and governance aspects need a more sophisticated evaluation of industry-specific materiality. Portfolio managers ought to consider that the benefits of ESG can be asymmetrically attained at times of crisis, which is effective in downside protection and cannot be reflected in the stable market situation.

To corporate executives, the results show that ESG investments have the potential of generating shareholder value in a situation where it is strategically aligned with material stakeholder interests and industry-specific risks. Environmental projects can be directly more financially beneficial in those industries that are resource-intensive, whereas governance enhancements can be especially appreciated in an environment with a weak institutional framework. The results of the crisis resilience indicate that ESG capabilities are strategic assets that cushion firm values during turbulent times. Leaders of corporations are advised to focus on the ESG dimensions that are most significant to them and their industry, as well as make their implementation substantive and not symbolic, to prevent any greenwashing issue.

To policymakers and regulators, the literature highlights the need to have standardized ESG reporting frameworks and binding disclosure as a way of improving market efficiency and investor protection. Efficient ESG integration can be regulated by addressing market failures and information asymmetries that hinder integration. Nevertheless, policymakers must consider that the financial materiality of ESG does not have one universal definition, and approaches to its regulation must be implemented differently in different regions, offering not one-fits-all rules but institutionally adequate ones. ESG harmonization across the border is still on the agenda to enable cross-border investment and eliminate regulatory arbitrage.

Research Gaps and Future Directions

This review has outlined six research gaps that have a high priority and should be addressed at a scholarly level to further the knowledge on the financial implications of ESG. Every gap is explained with certain recommendations on the future research directions.

Standardization of SG Measurement

The absence of standardized standards of ESG rating and transparency also results in the inconsistency of a score on ESG and the risks of greenwashing that reduce investor confidence. Research in the future is needed to come up with internationally standardized ESG rating frameworks with transparent processes and carry out comparative research on rating agency procedures and their implications in the market. Research scholars have a role to play in assessing the convergent validity of current measures of ESG, the dimensions where the ratings differ, and standardizing the measures where financially material factors of ESG are observed across situations.

Identification of causal Impact

The literature tends to provide correlation and a lack of causal inference of the separation between the effect of ESG and the presence of endogeneity or selection bias. Future studies are supposed to utilize.

Quasi-experimental designs, longitudinal designs, and instrumental variable designs to isolate the causality of ESG practices on firm financial performance. In the case of natural experiments, which occur because of regulations like the introduction of mandatory ESG disclosure requirements, the difference-in-differences analysis opportunities are available. Causal knowledge can also be achieved through event studies, which consider market responses to ESG-related announcements.

Disaggregated Pillar Effects

The lack of knowledge of specific and even non-linear effects of E, S, and G pillars on financial performance at sector and region demonstrations impairs the potential development of theories and practice. The future study ought to perform sectoral, pillar-specific, and regional analysis with the help of advanced econometric and machine learning techniques to include heterogeneous and non-linear ESG effects. The study is needed to find out whether ESG pillar interactions are present (whether good governance enhances or subdues the

benefits of environmental performance), and pillar materiality in different industry settings.

Emerging Markets Research

Lack of research on ESG integration issues, data quality, regulatory framework, and financial effects in emerging economies is a major gap considering the increased significance of such markets in investment portfolios around the globe. Future studies are encouraged to further empirically research the adoption, quality of disclosures, and financial impacts of ESG in emerging markets and create specific ESG models by considering the local institutions. It would be especially useful to conduct comparative studies investigating the moderating role of institutional quality in the relationships between the ESG and financial performance at different levels of development.

Long-term Horizon Studies

The short-term focus of most analyses prevents appreciation of the potential to create long-term value of ESG and especially sustainability investments whose payoffs are long-term in nature. In the next research, the effects of ESG should be studied in a multi-year period, differentiating between the short-term expenses of ESG implementation and the long-term gains that can be achieved in terms of reputation building, developing relationships with stakeholders, and reducing risks. Longitudinal designs that would follow firms in advance of the ESG policy application would answer questions of temporal dynamics in the ESG-financial performance relationship.

Ai/Ml Integration Validation

The new application of artificial intelligence and machine learning in ESG data analysis has not been thoroughly validated and comprehended of bias and limitations. The next stage of AI/ML models building should focus on the creation of robust models that process ESG data, evaluate the biases of the algorithms, and enhance the opportunities to be more transparent and consider the ESG sentiments analysis alongside financial indicators. A critical assessment of the comparison of machine learning methods with the traditional econometric methods in forecasting financial outcomes based on the ESG data would further enrich the methodological knowledge in the area.

CONCLUSION

This is a systematic review of the literature which brings together 571 papers investigating the ESG assessment implications on stock performance and investment decisions and maps out the research environment over a period of 25 years of academic research. The evidence mostly indicates positive or neutral correlation between the ESG performance and financial performance, but this is much context-specific and moderated by geographic area, industry, composition of pillars of ESG, and financial markets. Positive relationships with environmental factors are more consistently related to financial performance, social and governance dimensions are more varied, and crisis periods amplify the relationships between ESG and resilience and downside risk.

Regional heterogeneity also produces a significant discovery whereby developed markets demonstrate greater ESG-financial performance correlations that are due to more established regulatory structures, greater investor sensitivity, and more institutional governments. The emerging markets have some challenges and opportunities, and the poor quality of data and regulatory inconsistencies limit the financial materiality of ESG but provide opportunities for value creation as institutional settings change. Regulatory framework and quality of disclosure can be said to make a significant difference regarding the financial relevance of ESG, but there is also the issue of methodological inconsistency and greenwashing that continue to pose challenges to effective ESG integration.

The research agenda highlights six areas of priority to develop sustainable finance scholarship: standardization of ESG measurement, strategies to identify causality, disaggregated analysis of pillars, dynamics in the emerging markets, studies of the long-term horizon, and validation of AI/ML integration. The proposed gaps

will also help investors, corporate managers, and policymakers have a better understanding of the implementation of the dual value of ESG to achieve sustainability and financial performance. With ESG factors persistently changing how capital is distributed around the world and the strategy of individual corporations, a scholarly study that sheds light on the financial aspects of ESG is necessary in making evidence-based decisions in the shift to a more sustainable global economy.

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