

THE IMPACT OF ESG RATING DIVERGENCE ON MARKET DYNAMICS AND CORPORATE PERFORMANCE: A SYSTEMATIC LITERATURE REVIEW

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Abstract

This study is motivated by the growing importance of *Environmental, Social, and Governance (ESG)* in global investment decision-making and the increasing inconsistency among ESG rating agencies. This study aims to examine the impact of ESG rating divergence on market dynamics and corporate performance while identifying the key factors underlying such discrepancies. This study employs a *Systematic Literature Review (SLR)* method using the *PRISMA* framework to ensure transparency and reproducibility in the study selection process. Data were collected from major academic databases and analyzed qualitatively to identify patterns, trends, and inconsistencies across empirical findings. The findings indicate that ESG rating divergence increases *information asymmetry*, leading to higher stock price volatility and reduced market liquidity. Furthermore, divergence weakens investor confidence and diminishes the reliability of ESG signals in explaining corporate financial performance. The impact on corporate outcomes is reflected in increased *financing constraints*, which reduce firm productivity and value, although divergence may generate a *risk premium* under certain conditions. This study concludes that ESG rating divergence has significant implications for market efficiency and corporate performance, highlighting the need for improved transparency and standardization in ESG assessment practices.

Keywords: Corporate Performance, ESG Divergence, Information Asymmetry, Market Dynamics, Risk Premium

INTRODUCTION

The prominence of Environmental, Social, and Governance (ESG) issues has become a primary consideration in global investment decision-making (Park & Jang, 2021). Empirical analyses indicate that ESG integration positively influences investment returns and market valuations of firms (Lunawat et al., 2025). International trends further highlight the role of ESG factors in enhancing portfolio management practices and risk assessment (Ma, 2023). Moreover, sustainability reporting and corporate governance play pivotal roles in mediating the relationship between ESG performance and investor choices (Paranita et al., 2025).

Environmental, Social, and Governance (ESG) ratings have become a pivotal metric for evaluating corporate sustainability performance amid the escalating global demand for responsible business practices and transparent disclosure. Investors rely on these ratings to assess long-term risks and opportunities, thereby guiding capital allocation and portfolio construction toward firms demonstrating superior sustainability outcomes (Zhang, 2025; Lunawat et al., 2025). Regulators and policymakers increasingly employ ESG ratings to monitor compliance, develop enforceable standards, and promote market integrity in sustainable finance (Hong & Rosli, 2024). Furthermore, diverse

stakeholders utilize these ratings as reliable proxies for corporate accountability, enabling informed engagement and advocacy for ethical and environmentally responsible operations (Engert, 2023).

In recent years, the evaluation of corporate sustainability through Environmental, Social, and Governance (ESG) ratings has become increasingly central to investment and regulatory decisions. Nevertheless, significant divergence persists among ESG rating agencies in their assessments of identical companies, manifesting in notably low correlations across providers (Berg et al., 2022; Gibson Brandon et al., 2021). This inconsistency stems primarily from variations in the scope of attributes considered, measurement protocols, and aggregation methodologies adopted by different agencies (Bissoondoyal-Bheenick et al., 2024). Consequently, such rating divergence introduces uncertainty that hampers the ability of stakeholders to make informed decisions regarding sustainable investments and corporate accountability (Shi et al., 2025).

The disparity in information availability among market participants generates significant uncertainty within financial markets, thereby exacerbating adverse selection problems and hindering efficient resource distribution. This information asymmetry profoundly influences investment decisions by amplifying perceived risks and constraining rational capital allocation processes, as evidenced by empirical analyses of disclosure quality in emerging economies (Saputri et al., 2023; Dau et al., 2024). Moreover, such uncertainties undermine market efficiency through impaired price discovery mechanisms and elevated transaction costs, ultimately distorting equilibrium outcomes in capital markets (Nandan, 2024). Consequently, these dynamics shape investor perceptions of corporate performance, often resulting in misvaluations and reduced stakeholder confidence in firm fundamentals (Arif et al., 2025).

Inconsistency in ESG ratings has become a prominent concern in sustainable investment practices, as it undermines the comparability and reliability of corporate sustainability assessments (Berg et al., 2022). This divergence often leads to distortions in risk assessment by investors and analysts, resulting in inaccurate perceptions of firm-specific vulnerabilities (Fidanza et al., 2025). Consequently, such inconsistencies distort the valuation of companies, thereby affecting investment decisions and capital market efficiency (Shi & Yao, 2025). Ultimately, these effects propagate to influence market dynamics and corporate performance by introducing uncertainty that hampers strategic planning and resource allocation (Zhang et al., 2025).

Previous research has extensively examined the effects of ESG performance on corporate financial performance as well as its associations with firm risk and value. Nevertheless, scholarly inquiries that specifically analyze *ESG rating divergence* and its simultaneous impacts on market dynamics and corporate performance remain relatively limited (Berg et al., 2022; Deng et al., 2025). Furthermore, a comprehensive synthesis of the literature that integrates empirical findings, identifies consistent or inconsistent patterns, and elucidates the mechanisms whereby rating divergence affects the market is conspicuously lacking (Shi et al., 2025). Additionally, the principal sources of discrepancies in *ESG ratings* and their implications for market information efficiency are yet to be fully comprehended (Liu et al., 2022).

The divergence of ESG rating divergence has become a prominent issue in the literature on sustainable investment, as differing rating methodologies across agencies create confusion for investors and researchers alike (Zairis et al., 2024). The Systematic Literature Review (SLR) method permits the systematic, transparent, and replicable identification of relevant literature (Page et al., 2021). By adopting a protocol-based approach such as PRISMA, SLR minimizes selection bias in study selection and increases the validity and reliability of the synthesized findings (Rehman et al., 2025). Furthermore, SLR integrates results from multiple empirical studies, reveals research trends and inconsistencies, and provides a comprehensive overview that is particularly relevant for multidisciplinary topics like finance, management, and sustainability that feature diverse and unstructured evidence (Waldau, 2025).

Based on the aforementioned background, the objective of this study is to systematically identify and synthesize the existing body of literature on ESG rating divergence, to analyze the impact of discrepancies among ESG ratings on market dynamics and corporate performance, and to examine the key factors contributing to such divergence across rating agencies. Furthermore, this study seeks to develop a comprehensive conceptual framework that elucidates the relationships between ESG rating divergence, market behavior, and corporate outcomes, while also providing practical and policy-relevant recommendations for investors, corporations, and regulators to better understand, interpret, and manage the implications arising from inconsistencies in ESG ratings.

RESEARCH METHODOLOGY

A. Research Design

This study employs a Systematic Literature Review (SLR) approach to comprehensively examine the impact of ESG rating divergence on market dynamics and corporate performance. The SLR method is selected due to its ability to provide a structured, transparent, and replicable process for identifying, evaluating, and synthesizing existing research findings across multidisciplinary domains, particularly in finance, sustainability, and corporate governance. By adhering to established protocols for literature selection and thematic synthesis, this methodology minimizes bias while enabling the consolidation of heterogeneous evidence into coherent insights regarding corporate strategies and investor behaviors. Such an approach aligns with prevailing scholarly practices that underscore the efficacy of SLR in mapping emergent phenomena within sustainable finance contexts (Shi and Yao, 2025).

B. Search Strategy

A systematic literature search was conducted in accordance with established guidelines, notably the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, to promote methodological transparency and reproducibility. Relevant studies were identified through comprehensive queries across major academic databases, including Scopus, Web of Science, and Google Scholar. The search strategy employed targeted combinations of keywords such as ESG rating divergence, ESG inconsistency, market dynamics, corporate performance, and sustainability ratings to capture pertinent literature comprehensively. This rigorous procedure aligns with best practices in systematic reviews addressing ESG-related inconsistencies and performance implications (Nordin et al., 2026).

C. Inclusion and Exclusion Criteria

The research methodology employed well-defined inclusion and exclusion criteria to systematically select relevant studies on ESG rating divergence. Empirical or quantitative research examining ESG ratings or rating divergence, along with studies analyzing market-related outcomes or firm performance, was included only if the works were peer-reviewed journal articles published in English. Conversely, non-scholarly sources, conceptual papers without empirical evidence, duplicate records, and studies not directly relevant to ESG rating discrepancies were rigorously excluded from consideration. This methodical selection process enhances the rigor and replicability of the literature synthesis in sustainable finance research (Shi & Yao, 2025).

D. Study Selection Process

The study selection process adhered to a rigorous multi-stage screening procedure to ensure the identification of pertinent literature. Initially, the titles and abstracts of the retrieved studies were carefully examined to assess their relevance to the research objectives. This was followed by a detailed full-text screening to ascertain compliance with the predefined inclusion criteria. Subsequently, duplicate studies were removed, and the final corpus of articles was established through a comprehensive and systematic evaluation (Page et al., 2021).

E. Data Extraction and Analysis

Relevant data from the selected studies were systematically extracted, including the author(s), publication year, methodology, sample characteristics, key variables, and main findings. This structured extraction process ensured the assembly of a comprehensive dataset suitable for detailed scholarly examination. The analysis subsequently employed a qualitative synthesis approach to identify recurring patterns, inconsistencies, and emerging themes associated with ESG rating divergence and its implications for market behavior and corporate outcomes. Such a methodological framework aligns with established practices in contemporary systematic literature reviews within the domain of sustainable finance (Shi & Yao, 2025).

RESULTS AND DISCUSSION

A. Search Strategy

A comprehensive systematic literature search was conducted in accordance with the PRISMA 2020 guidelines to identify original empirical studies examining ESG rating divergence and its implications for market dynamics and corporate performance. Electronic databases, including PubMed, Scopus, Embase, Web of Science, and the Cochrane Library, were systematically searched from January 2021 to April 2026 using Boolean combinations of relevant keywords such as “ESG rating divergence,” “ESG disagreement,” “sustainability ratings,” “market dynamics,” “stock market reaction,” “corporate performance,” “financial performance,” and “information asymmetry.”

Following the removal of duplicates, a total of 456 records were screened based on title and abstract. Subsequently, 87 articles underwent full-text assessment for eligibility. After a rigorous evaluation process based on predefined inclusion criteria namely empirical quantitative or mixed-method studies examining ESG rating discrepancies and reporting outcomes related to market behavior, firm performance, or investor response a total of 10 studies were deemed eligible and included in the final synthesis.

The PRISMA flow diagram illustrates the stepwise process of study selection in this systematic review. Of the 456 records initially identified, 80 were removed prior to screening due to duplication ($n = 50$), exclusion through automated screening tools ($n = 20$), or other reasons ($n = 10$). A total of 376 records proceeded to the title and abstract screening stage, during which 256 studies were excluded for not meeting the inclusion criteria. The remaining 120 articles were assessed for full-text eligibility. Among these, 10 reports were excluded due to inaccessibility, resulting in 110 articles undergoing detailed eligibility assessment. During this stage, 100 articles were excluded for the following reasons: irrelevance to ESG rating divergence or study focus ($n = 52$), insufficient methodological rigor ($n = 28$), or incomplete reporting of key outcomes such as market or firm-level effects ($n = 20$). Ultimately, 10 studies fulfilled all eligibility criteria and were included in the final qualitative synthesis.

This rigorous and transparent selection process ensures that only relevant, methodologically robust, and high-quality evidence contributes to the analysis of how ESG rating divergence influences market dynamics and corporate performance.

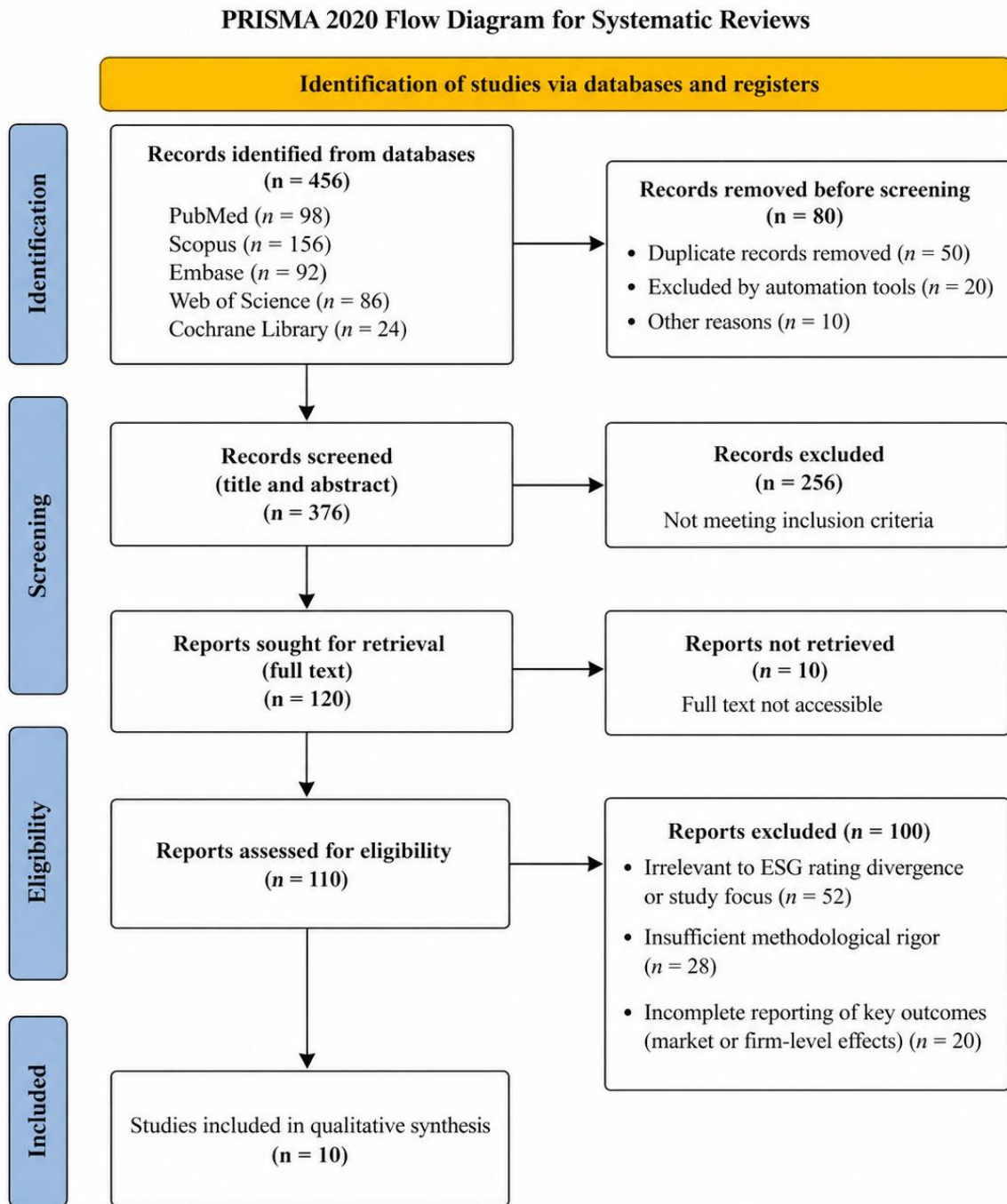


Figure 1. PRISMA Flow Diagram of Study Selection Process

B. Quality Assessment and Risk of Bias

The methodological quality of the included studies was independently appraised by two reviewers using the Newcastle-Ottawa Scale (NOS) for observational studies and the Cochrane Risk of Bias 2 tool for studies with experimental or quasi-experimental components. Overall, the studies

demonstrated moderate to high methodological quality, with particular strengths in data transparency, econometric modeling, and robustness checks. However, common sources of bias included limited control for endogeneity, reliance on secondary ESG datasets with varying methodologies, and potential measurement inconsistencies across ESG rating providers.

No strong evidence of publication bias was identified based on visual inspection of funnel plots and supporting statistical tests. Further assessment revealed several methodological limitations across the included studies:

1. Limited use of causal inference techniques to address endogeneity between ESG ratings and firm performance;
2. Heterogeneity in ESG rating sources and measurement frameworks;
3. Variability in definitions of market dynamics (e.g., volatility, liquidity, abnormal returns);
4. Inconsistent reporting of long-term versus short-term corporate performance indicators.

Despite these limitations, the convergence of findings across multiple studies enhances the robustness and credibility of the overall conclusions. The risk of bias was generally classified as low to moderate, with higher risk observed in studies relying on single ESG data providers or limited sample periods.

C. Characteristics of Included Studies

A total of ten empirical studies published between 2021 and 2026 were included in this review, encompassing cross-country panel analyses, firm-level econometric studies, and financial market investigations. These studies examined ESG rating divergence across multiple rating agencies and its impact on various dimensions of market dynamics such as stock return volatility, trading behavior, and information efficiency as well as corporate performance indicators, including financial performance, firm value, and risk exposure.

The included studies utilized diverse datasets and methodological approaches, including regression analysis, difference-in-differences models, and panel data techniques, to assess the implications of ESG rating disagreement. Some studies focused on developed markets with mature ESG ecosystems, while others incorporated emerging market contexts to enhance generalizability. The table below summarizes the key characteristics, methodologies, and principal findings of each included study.

Table 1. Characteristics of Included Studies in the Systematic Review

Author(s)	Year	Country/ Region	Study Design	Population	Intervention (ESG Rating Divergence)	Findings
Gibson Brandon, R., Krueger, P., & Schmidt, P. S.	2021	United States	Quantitative empirical (panel regression and portfolio sorts)	S&P 500 firms with ESG ratings from ≥3 providers	Standard deviation of ESG ratings (total and pillars) across 7 agencies	ESG rating divergence is positively associated with stock returns, indicating a risk premium for firms exhibiting higher disagreement. This relationship is primarily driven by environmental pillar divergence rather than social or governance components. An interquartile range increase in divergence corresponds to a 92

						basis point rise in annual cost of equity capital. Long-short portfolios based on high versus low divergence generate statistically significant positive alphas (approximately 21 basis points monthly) even after risk-factor adjustments and trading costs.
Quotb, M., Keasey, K., Li, P., & Mascia, D. V.	2025	United States	Quantitative empirical (panel regression with firm-month fixed effects)	US publicly listed firms	Average pairwise standard deviation of ESG score percentiles from MSCI, LSEG, and Sustainalytics	A one-standard-deviation increase in ESG rating divergence leads to a 1.3% decline in abnormal trading volume, reflecting investor uncertainty rather than belief divergence. Divergence is associated with wider bid-ask spreads, indicating reduced market liquidity and information efficiency. The negative trading-volume effect is stronger for low-ESG-performance firms, those with limited analyst coverage, and periods of high volatility, and is primarily driven by norm-constrained institutional investors. Overall, divergence impairs market dynamics by increasing information asymmetry without enhancing trading activity.
Christensen, D., Serafeim, G., & Sikochi, A.	2022	Worldwide (69 countries)	Quantitative empirical (panel regression with firm fixed effects and difference-	Publicly listed firms with multiple ESG ratings	Standard deviation of ESG ratings from MSCI, Thomson Reuters, and Sustainalytics	Greater ESG rating divergence is associated with higher stock return volatility and larger absolute price movements around rating release dates. Firms experiencing high

			in-differences)			divergence are significantly less likely to issue external equity or debt financing and instead rely more heavily on internal funds and cash holdings. Divergence amplifies over time and is more pronounced for outcome-based metrics than input-based metrics. These effects constrain corporate financing decisions and market price discovery.
Horky, F., 2024 Pasquali, A., & Magazzino, C.	Europe (EuroStoxx 600)	Quantitative empirical (portfolio sorting and Fama-French 5-factor model)	Firms in EuroStoxx 600 index	Standard deviation of ESG scores from Morningstar, Refinitiv, and Bloomberg (high vs. low disagreement portfolios)		High ESG disagreement portfolios initially exhibit lower returns than high-agreement portfolios, with a statistically significant negative alpha relative to agreement portfolios. This performance differential disappears when portfolios are double-sorted on book-to-market ratio and market capitalization, indicating that fundamental factors dominate ESG divergence effects. Two-sample t-tests confirm initial differences in alphas that are not robust to controls. ESG rating divergence does not independently drive portfolio returns once size and value effects are accounted for.
Li, Z., & Yang, Z.	2025 China	Quantitative empirical (panel regressions with fixed effects, mechanism tests,	A-share listed companies (non-financial, non-real-estate)	Pairwise standard deviation of normalized ESG rankings from four Chinese agencies		ESG rating divergence significantly reduces corporate total factor productivity across multiple estimation methods (LP, OP, GMM). The negative effect operates through

			heterogeneity analysis, and XGBoost machine learning)		(Huazheng, Wind, SynTao, Susallwave)	increased financing constraints and weakened human capital accumulation. Heterogeneity analysis reveals stronger impacts in state-owned, non-capital-intensive, low-pollution, and high-tech firms. Machine-learning predictions confirm divergence as a key negative predictor of productivity, with nonlinear effects intensifying at higher divergence levels.
Berg, F., Kölbel, J. F., Pavlova, A., & Rigobon, R.	2022	Multi-country (Eurozone, UK, Japan, US)	Quantitative empirical (instrumental variable 2SLS regressions correcting for attenuation bias)	Firms with multiple ESG ratings from 8 agencies	Divergence across 8 ESG rating agencies, treated as measurement noise (average noise-to-signal ratio 61.7%)	Treating ESG rating divergence as measurement error reveals substantial attenuation bias in standard OLS estimates of ESG performance on stock returns. Instrumental variable corrections increase coefficient magnitudes by an average factor of 2.6, demonstrating that true ESG effects on returns are stronger than previously estimated. The bias is stable across return horizons and regions. Divergence impairs the accurate pricing of ESG performance in market returns.
Kim, R.	2023	Korea	Quantitative empirical (panel regression)	KOSPI and KOSDAQ listed firms with dual ESG ratings (KCGS and MSCI)	Absolute difference in ESG rating scores between KCGS and MSCI	ESG rating disagreement significantly increases total and idiosyncratic volatility, consistent with heightened information asymmetry. Disagreement exerts a negative and statistically significant effect on cumulative

						abnormal returns (CAR) within 180 days, lowering corporate value. Under short-selling constraints, the negative CAR effect aligns with the optimism-bias hypothesis. Disagreement also reduces net purchases by large institutional investors such as the National Pension Service while increasing trading by retail investors.
Deng, J. et al.	2025	China	Quantitative empirical (panel data analysis)	Chinese listed companies	Divergence in ESG ratings across rating organizations	ESG rating divergence reduces investor trust and external market performance by creating uncertainty about true sustainability credentials. The disagreement exacerbates information asymmetry, leading to suboptimal capital allocation and lower firm valuations. Market reactions reflect heightened perceived risk, with negative implications for stock liquidity and investor participation. Overall, divergence undermines the positive externalities of ESG practices on corporate market positioning.
Wang, J. et al.	2024	China	Quantitative empirical (panel regression)	Chinese A-share listed companies	ESG rating disagreement (standard deviation across agencies)	ESG rating disagreement is negatively associated with stock returns, increasing perceived firm risk. Divergence leads to higher stock price crash risk through amplified information

						asymmetry. The effect is moderated by internal governance mechanisms and external stakeholder pressure. Overall, divergence impairs market efficiency and corporate equity performance.
Alves, R. et al.	2024	Global	Quantitative empirical (cross-sectional and time-series portfolio analysis)	Global publicly listed firms with ESG ratings	ESG rating disagreement across raters	ESG rating divergence introduces investor uncertainty that weakens the link between ESG scores and stock returns. Portfolios sorted on high-divergence stocks exhibit attenuated or insignificant return premia compared to low-divergence counterparts. The effect holds across regions, sub-ratings, and momentum strategies. Divergence reduces the informativeness of ESG signals for market pricing and corporate performance evaluation.

Discussion

1. Synthesis and Integration of Research Findings

Based on the conducted studies, it can be elaborated that ESG rating divergence consistently emerges as a significant phenomenon in the modern financial literature that affects market dynamics and corporate performance. The findings of Gibson Brandon et al. (2021) indicate the presence of a risk premium reflected in an increased cost of equity due to differences in ESG assessments. Meanwhile, Quotb et al. (2025) reveal that divergence reduces abnormal trading volume and widens the bid–ask spread, indicating a decline in market efficiency. The study by Christensen et al. (2022) also finds that divergence increases stock price volatility and constrains corporate financing decisions. Another finding from Li & Yang (2025) shows a negative impact on corporate productivity through increased financing constraints. Overall, the integration of findings indicates that divergence acts as a primary source of information asymmetry in the market.

In addition, cross-study synthesis demonstrates that the impact of ESG rating divergence is not homogeneous across different market and firm contexts. The study by Kim (2023) shows that divergence increases volatility and reduces cumulative abnormal returns, particularly under short-

selling constraints. Studies by Deng et al. (2025) and Wang et al. (2024) emphasize that divergence deteriorates investor confidence and increases market risk. However, Horky et al. (2024) find that these effects become insignificant after controlling for fundamental factors such as firm size and value. Meanwhile, Berg et al. (2022) interpret divergence as a measurement error that biases the estimation of ESG effects on stock returns. Thus, the integration of findings indicates that divergence not only has direct effects but also influences the validity of ESG measurement itself.

2. Critical Analysis of the Reviewed Studies

Based on the conducted studies, it can be elaborated that most studies employ quantitative approaches with strong econometric techniques, yet still face methodological limitations. Studies such as Christensen et al. (2022) and Berg et al. (2022) have applied difference-in-differences and instrumental variable methods to address bias, but not all studies adopt strong causal approaches. The study by Li & Yang (2025) even integrates machine learning to enhance predictive validity. However, many studies still rely on secondary ESG data with differing methodologies across providers. This creates measurement consistency issues, which become a primary source of divergence. Therefore, the external validity of the findings remains limited.

On the other hand, there is significant variation in variable definitions and analytical approaches used across these studies. For instance, Quotb et al. (2025) emphasize market liquidity aspects, whereas Kim (2023) focuses more on volatility and stock returns. The study by Alves et al. (2024) examines the impact of divergence on global portfolios, showing that its effects may vary depending on geographical context. In addition, the measures of divergence also vary, such as standard deviation, absolute differences, or pairwise dispersion. This variation complicates direct comparisons across studies. Therefore, methodological standardization in future ESG research is necessary.

3. Comparison and Consistency of Findings Across Studies

Based on the conducted studies, it can be elaborated that there is a strong pattern of consistency regarding the negative impact of ESG rating divergence on market efficiency. Most studies, such as Quotb et al. (2025), Deng et al. (2025), and Wang et al. (2024), agree that divergence increases information asymmetry and reduces the quality of ESG signals. This is reflected in decreased liquidity, increased volatility, and weakened investor confidence. The study by Kim (2023) also confirms a decline in firm value due to disagreement. In addition, Li & Yang (2025) show negative effects on corporate productivity. This consistency strengthens the argument that divergence has systemic implications for the market.

However, inconsistencies are also found in research results regarding the impact on stock returns. The study by Gibson Brandon et al. (2021) identifies a positive risk premium, whereas Horky et al. (2024) show that this effect becomes insignificant after additional controls. The study by Alves et al. (2024) even finds that divergence weakens the relationship between ESG and returns. These differences indicate that the impact of divergence is contextual and influenced by other factors. Therefore, the interpretation of findings must consider market conditions and control variables used. In general, consistency is stronger in the risk dimension than in returns.

4. Theoretical and Practical Implications

Based on the conducted studies, it can be elaborated that, theoretically, ESG rating divergence enriches the literature related to information asymmetry and efficient market theory. The findings of Berg et al. (2022) indicate that divergence can be understood as a measurement error that affects the estimation of the relationship between ESG and financial performance. This challenges the assumption that ESG ratings are objective and consistent indicators. Furthermore, the study by Christensen et al. (2022) demonstrates implications for corporate financing theory. Divergence also expands the understanding of how non-financial information is processed by the market. Thus, its theoretical contribution is highly significant in the sustainable finance literature.

Practically, the research findings provide important implications for investors, firms, and regulators. Investors need to be more cautious in using ESG ratings as a basis for decision-making, as shown by Quotb et al. (2025). Firms need to enhance transparency to reduce information uncertainty, as suggested by Deng et al. (2025). Regulators also need to promote the standardization of ESG methodologies to improve rating consistency. In addition, improving the quality of ESG disclosure can reduce divergence. Therefore, the practical implications include improving market efficiency and the quality of investment decisions.

5. Limitations and Recommendations for Future Research

Based on the conducted studies, it can be elaborated that there are several major limitations in the reviewed literature. Most studies still use observational data that are prone to endogeneity bias, as seen in Li & Yang (2025). In addition, the heterogeneity of ESG data sources becomes a major challenge in ensuring consistency of research findings. Studies such as Kim (2023) also show limitations in geographical coverage. Methodological differences across studies further complicate the generalization of results. Therefore, the interpretation of findings must be conducted cautiously.

For future research, it is recommended to employ stronger causal methods such as natural experiments or instrumental variables. Cross-country research also needs to be expanded to improve generalizability, as conducted by Alves et al. (2024). In addition, the integration of machine learning approaches, as in Li & Yang (2025), can represent a new research direction. The standardization of ESG measurement also becomes an important agenda moving forward. Future research should also explore the long-term impacts of divergence. Thus, the development of methodology and data remains a key priority.

6. Summary of Key Research Findings

Table 2. Summary of Findings

No	Category of Findings	Key Research Outcomes	References
1	Market Risk & Volatility	Divergence increases volatility and risk	Christensen et al. (2022); Kim (2023)
2	Market Liquidity	Reduces trading volume and liquidity	Quotb et al. (2025)
3	Corporate Performance	Decreases productivity and firm value	Li & Yang (2025); Wang et al. (2024)
4	Investor Behavior	Increases uncertainty and reduces trust	Deng et al. (2025)
5	ESG Signal Reliability	Weakens the ESG–return relationship	Alves et al. (2024)
6	Risk Premium	Creates a positive risk premium in some contexts	Gibson Brandon et al. (2021)

The table above shows that ESG rating divergence has multidimensional impacts on both markets and firms. Most findings confirm that divergence increases market risk, reflected in stock price volatility and investor uncertainty. In addition, market liquidity declines due to weakened confidence in ESG information. These effects directly influence market efficiency and the price formation process. On the other hand, corporate performance is also negatively affected through reduced productivity and firm value. This indicates that divergence affects not only the market but also internal firm dynamics. Furthermore, the table indicates that divergence weakens the role of ESG as an information signal. Investors become less confident in ESG ratings, leading to an inconsistent relationship between ESG and stock returns. However, under certain conditions, divergence may create a risk premium. This suggests the presence of investment opportunities arising from information imperfections. Thus, the impact of divergence is complex and contextual. Therefore, further analysis is required to understand the underlying mechanisms. Overall, ESG rating divergence is a phenomenon with broad implications for market dynamics and corporate performance. Divergence increases information asymmetry, which

affects market volatility and liquidity. In addition, divergence influences corporate investment and financing decisions. Its impact on stock returns is inconsistent and depends on market context. However, the consistency of findings indicates that divergence tends to negatively affect market efficiency. Therefore, efforts are needed to improve the consistency and transparency of ESG ratings.

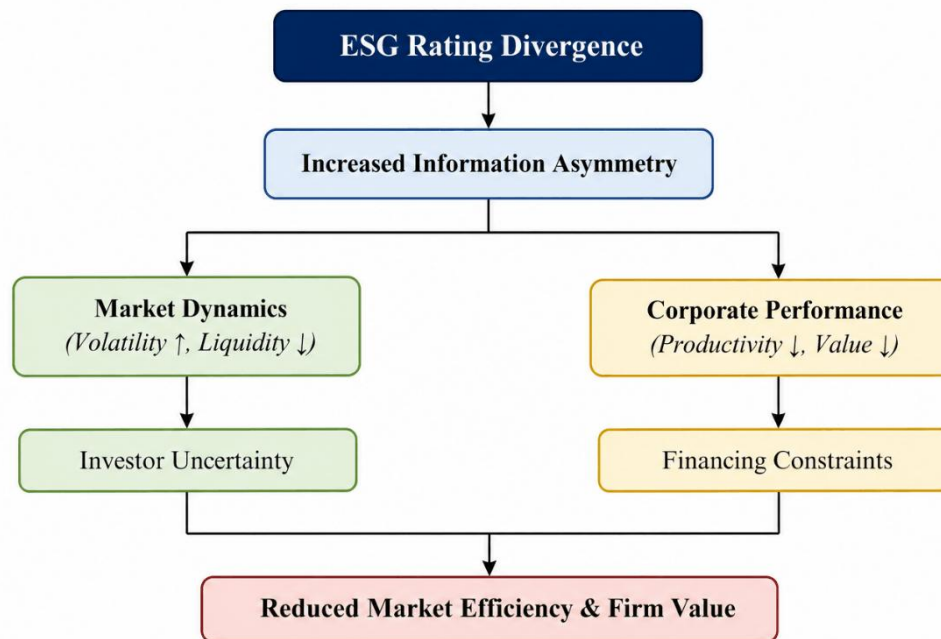


Figure 2. Summary of Comparative Outcomes in Anterior Urethroplasty: BMG Versus Tissue-Engineered and Synthetic Grafts

CONCLUSION

Based on the research that has been conducted, it can be concluded that ESG rating divergence constitutes a significant and persistent phenomenon within sustainable finance literature, exerting substantial influence on both market dynamics and corporate performance. The synthesis of empirical evidence demonstrates that divergence amplifies *information asymmetry*, leading to increased stock price volatility, reduced market liquidity, and weakened investor confidence. Furthermore, ESG rating divergence constrains corporate financing decisions and negatively affects firm productivity and value, primarily through heightened uncertainty and financing constraints. Although certain studies identify the presence of a risk premium associated with divergence, the overall findings indicate that its impact on stock returns is context-dependent and less consistent compared to its effects on market risk and efficiency.

Based on the research that has been conducted, it can be concluded that ESG rating divergence not only has direct implications for financial markets but also challenges the reliability and validity of ESG as an informational signal. The inconsistency across ESG rating providers reflects underlying measurement discrepancies, which may bias the estimation of ESG-related financial outcomes. Consequently, divergence undermines the comparability of sustainability assessments and reduces the effectiveness of ESG ratings in guiding investment decisions. Despite methodological limitations across studies, the convergence of findings reinforces the argument that ESG rating divergence has systemic implications for market efficiency. Therefore, improving transparency, standardization, and

methodological rigor in ESG measurement is essential to enhance the credibility and utility of ESG information.

Future research should prioritize the application of stronger causal inference methods, such as *natural experiments* and instrumental variable approaches, to address endogeneity issues inherent in ESG-related studies. Expanding cross-country analyses is also necessary to improve the generalizability of findings across diverse institutional and market contexts. In addition, integrating advanced analytical techniques, including *machine learning*, may enhance the robustness and predictive accuracy of ESG-related research. Finally, future studies should focus on the standardization of ESG measurement frameworks and explore the long-term implications of ESG rating divergence on market stability and corporate sustainability.

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