



# Green finance and corporate sustainability: analysing the corruption between ESG scores and financial performance in emerging economies

Dr. Mohit Bhardwaj<sup>1\*</sup> and Dr. Pankaj Yadav<sup>2</sup>

<sup>1</sup> Assistant Professor, Department of Commerce, Ganna Utpadak Degree College, Baheri, Bareilly, Uttar Pradesh, India

<sup>2</sup> Associate Professor, Department of Commerce, Bareilly College, Bareilly, Uttar Pradesh, India

Correspondence Author: Dr. Mohit Bhardwaj

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## Abstract

Green finance and corporate sustainability have moved from marginal topics to central items on corporate, investor, and policy agendas—especially in emerging economies where the trade-off between rapid industrialization and environmental protection is acute. Environmental, Social and Governance (ESG) scores are widely used by investors, asset managers, regulators and rating agencies as proxies for corporate sustainability, risk management, and long-term value creation. Yet, an increasing body of research and regulatory action points to a troubling phenomenon: the weak or inconsistent relationship between ESG scores and financial performance in many emerging markets, and the growing incidence of “greenwashing” or misreporting that undermines both investor trust and the efficacy of green finance channels. This paper interrogates the “corruption” (i.e., distortion, decoupling, and misuse) between ESG scores and firm financial outcomes in emerging economies, analyzing theoretical mechanisms, empirical findings up to 2024, and institutional drivers (market incentives, regulatory gaps, rating heterogeneity, and audit/verification weaknesses). We adopt a mixed-methods design. First, a systematic literature synthesis up to 2024 maps evidence on ESG-financial performance linkages, with attention to emerging markets’ heterogeneity. Second, a critical review of regulatory enforcement cases and investigative journalism illustrates the operational manifestations of greenwashing and ESG-score gaming. Third, the paper proposes an empirical framework and methodology for researchers seeking to quantify the decoupling between reported ESG scores and value creation—highlighting potential econometric pitfalls (measurement error, sample selection, endogeneity, and omitted variables). The analysis shows that while many studies (and meta-analyses) report neutral to positive ESG-financial performance relationships in advanced markets, evidence in emerging economies is mixed and often weak; some high-profile enforcement actions reveal material misstatements and greenwashing that depress investor confidence and distort capital allocation. Notably, the heterogeneity in ESG methodologies and coverage, the reliance on voluntary disclosures, and under-resourced verification infrastructure are central causes for observed decoupling (i.e., “corruption” of the ESG signal). There are multi-pronged policy and practice implications. The regulators need to enhance the levels of disclosure, third-party validation, and customized green taxonomies based on emerging market conditions. The rating providers are encouraged to make methodologies more transparent, have uncertainty bands around scores, and have the metrics being consistent with materiality per sector. Asset managers and financial institutions require greater stewardship, due diligence and proactive supervision to prevent the use of raw scores ranking. As a researcher, the paper presents a sound empirical design (difference-in-differences, instrumental variables, and sample stratification by data quality) to statistically conclude on the effects of ESG on the profitability, cost of capital and market valuation in emerging economies. In sum, advancing green finance and genuine corporate sustainability in emerging markets requires improving information quality and governance: without that, ESG scores risk becoming symbolic labels rather than reliable guides for capital allocation.

**Keywords:** Green finance, ESG scores, Corporate sustainability, Greenwashing, Emerging economies, Financial performance, Disclosure quality, Rating heterogeneity, Governance

## Introduction

### 1. Framing the problem: green finance, ESG and why emerging economies matter

Green finance—broadly defined as financial flows (public and private) that support low-carbon, climate-resilient, and environmentally sustainable development—has become a core policy objective worldwide. Multilateral finance flows and private capital have increasingly been directed toward renewable energy, low-emissions technologies, and adaptation projects to meet climate targets and Sustainable Development Goals (SDGs). Emerging economies are central to the global climate equation: they host a large share of future emissions growth, have pressing development needs, and simultaneously

face acute vulnerabilities to climate impacts. Mobilizing private finance in these markets is thus essential, and ESG metrics and ratings are the instruments by which many global and domestic investors try to identify sustainable opportunities and manage environmental and social risks.

ESG scores summarize complex arrays of disclosures into single indices that purport to measure a firm’s environmental stewardship, social responsibility, and governance practices. Asset managers, institutional investors, and increasingly corporate boards use these scores as screening tools, benchmarks for stewardship, and inputs to portfolio construction. Theoretically, better ESG performance can be linked to the financial performance in a number of ways: (a)

operational efficiency (energy, materials savings), (b) risk reduction (less litigation and regulatory risk), (c) improved reputation and consumer loyalty, (d) reduced perceived risk/cost of capital, and (e) resilience and innovation resulting in sustainable growth. Nevertheless, the quality of information, the institutions of governance, regulatory frameworks, and the incentives of rating providers and firms per se between ESG disclosure and sustainable performance and financial returns. Such chain is usually complicated by the conditions of emerging economies: weaker disclosure regimes, corporate ownership (family-controlled firms, state-owned enterprises) heterogeneity, concentrate capital market, less regulatory enforcement capacity, and less institutional investors in capital market monitoring. Consequently, the ESG signal in many emerging market contexts may be noisy—susceptible to manipulation, selective disclosure, or methodological artifacts of ratings agencies that rely heavily on observable disclosures rather than verified outcomes. This creates a risk that ESG scores decouple from genuine sustainability and financial performance—what this paper calls “corruption” in the ESG–performance nexus.

## 2. Why analyze corruption/decoupling between ESG scores and financial performance?

The term “corruption” here is used analytically to capture several phenomena: (i) greenwashing—the intentional or negligent misstatement of sustainability claims to attract capital or reputational benefit; (ii) signal dilution—where methodological choices or disclosure gaps cause ESG scores to reflect reporting activity rather than substance; and (iii) perverse incentives—where firms pursue score-maximizing activities that do not improve real environmental or social outcomes (symbolic compliance). Studying these mechanisms is necessary because:

- **Capital misallocation risk:** Should investors base their decisions on the false ESG signals, capital will end up in the hands of the firms that sound good on the paper, but they are not sustainable, and thus they will postpone the needed changes in the actual economy.
- **Investor protection and market integrity:** Distorted pricing of assets and tail risks that are higher to fiduciary investors and beneficiaries can be caused by claims of misleading ESG information.
- **Policy design:** To have efficient green finance policies, credible signals are needed; an understanding of failures will lead to designing better disclosure regimes and verification systems.

The association between ESG and corporate financial performance is empirically controversial. A number of systematic reviews and meta-analyses conclude that the general impact is either neutral or slightly positive in developed markets, but the findings are not uniform in terms of contexts and procedures of analysis [see meta-analysis work and bibliometric synthesis]. With the emerging economies, the evidence on this issue is quite inconsistent: some researchers find positive relationships in particular industries or when institutional settings are specific, others find weak or no

relationships at all, so it is not clear whether the ESG score in these areas captures economic value or it is just the way the firms report [Khan, 2022; Narula, 2024] <sup>[1]</sup>.

## 3. Institutional drivers of ESG signal corruption in emerging economies

To discuss the reasons why the ESG scores are likely to be misrepresented in emerging markets, we consider institutional and market forces that can provide incentives or allow misreporting:

### 3.1 Disclosure regimes and regulatory enforcement

The voluntary and semi-voluntary systems of ESG disclosure are the basis of many rising economies. In cases where there are compulsory standards, they may not be enforced with capacity limitations by the securities regulators or low political priority. Unless regularly checked, ESG reporting may be cherry-picking in which companies disclose good activities but fail to reveal the negative effects. Several policy observers emphasize that disclosure quality, not just quantity, matters for investor trust. The heterogeneity in mandatory reporting requirements across jurisdictions also complicates cross-country comparisons and rating uniformity <sup>[2]</sup>.

### 3.2 Rating provider heterogeneity and methodology opacity

A critical source of noise is the multiplicity of ESG rating providers (commercial vendors, specialized research houses, and index providers) that adopt different methodologies, weighting schemes, and data sources. Ratings often rely on self-reported corporate disclosures, which creates circularity: firms that disclose more (not necessarily perform better) often score higher. Rating providers differ in the extent to which they use outcomes versus policies, and their algorithms are not fully transparent. Such heterogeneity leads to “rating divergence”—a phenomenon well documented in the literature. The absence of methodological transparency compromises comparability and is liable to manipulators who will use it to obtain desirable scores <sup>[3]</sup>.

### 3.3 Corporate ownership and governance structure

Disclosure intentions are often manipulated as families or the state often control emerging market firms. In cases where the owners controlling the organizations are interested in short-term reputation or access to capital, they can invest in symbolic sustainability reporting without structural resolutions. Ineffective minority shareholder safeguards and control of ownership also reduce the compulsory of plausible credible and independently documented sustainability reporting.

### 3.4 Market incentives and opportunistic signaling

Green capital is highly encouraged during boom times of ESG investing. In efforts to satisfy the demand of clients to use sustainable products, asset managers can use the headline scores instead of due diligence—this increases the incentives to enhance the reported metrics shallowly. Cases of large asset managers and companies facing greenwashing enforcement

actions show the macro consequences when market incentives misalign with substantive sustainability.

A prominent example shows that high-profile firms and asset managers have faced sanctions for overstating ESG credentials—demonstrating that greenwashing is not merely theoretical but a material governance failure that affects investor confidence and regulatory response [4].

#### 4. The empirical puzzle: mixed evidence on ESG and financial performance

Meta-analyses and bibliometric studies largely conclude that the ESG–financial performance relationship is heterogeneous across regions, time periods, metrics, and methodologies. There are high-quality papers that are accompanied by positive (lower cost of capital, better performance as a result of enhancements in operations) effects, neutral or context-specific effects, and some that have negative relations under specific circumstances. The inconclusive results can be attributed to:

- **Measurement error:** ESG scores are noisy, which creates attenuation bias in the regressions.
- **Reverse causality:** more successful or richer firms have the ability to make more investment in ESG activities and reporting.
- **Selection bias:** articles tend to sample firms that report, differentiating them by, e.g. size or privacy.
- **Time horizon:** ESG investments can have long-term returns that cannot be reflected in short-term accounting measures.

A large bibliometric analysis up to 2022 identified three literature streams—ESG as risk mitigation, ESG as value creation, and ESG as signaling—and highlighted methodological heterogeneity as a key barrier to consensus [5].

#### 5. Greenwashing, enforcement, and market responses

The rise of greenwashing evidence and enforcement actions in advanced jurisdictions has begun to reshape investor and regulator behavior. Investigative reporting and prosecutorial cases have brought to light misstatements by asset managers and funds—prompting regulatory fines and reputational costs. Assets have been outsourced and litigants have been taken over in reality as a result of reputation damage caused by uncovered greenwashing. These dynamics matter for emerging markets in two ways: first, global capital allocators may tighten due diligence on emerging market exposures; second, emerging market regulators may face pressure to catch up with disclosure and enforcement norms to maintain investor access [6].

#### 6. Research questions, objectives and contribution

This paper addresses the following central questions:

- To what extent do ESG scores in emerging economies relate to subsequent corporate financial performance (profitability, valuation, cost of debt/equity)?
- What institutional, methodological, and market factors drive decoupling (or “corruption”) between ESG scores and value creation?
- How can researchers and policymakers better detect and correct for greenwashing, measurement error, and incentives that distort ESG signals?

- What empirical approaches provide more plausible estimations of the causal impacts of ESG in the firm performance in emerging market situations?

#### Literature review

This review synthesizes the most relevant empirical, theoretical and practitioner literature up to 2024 on (i) ESG scores and firm performance, (ii) rating heterogeneity and measurement challenges, and (iii) greenwashing and enforcement evidence—focusing on emerging economy contexts when available.

- a) **Khan, M.A. (2022)** — *ESG disclosure and Firm performance: A bibliometric and meta-analysis*. Khan conducted a major bibliometric analysis that distilled three literature streams and highlighted methodological fragmentation and the need for research on context and institutional moderators. His synthesis stresses that simple pooled regressions obscure heterogeneity across country governance and disclosure regimes [7].
- b) **NYU Stern / Academic Meta-analyses (2021)** — *ESG & financial performance meta-review*. A widely cited meta-analysis of hundreds of studies up to 2020 concluded that the majority of research reports non-negative relations between ESG and financial performance but noted publication bias and measurement heterogeneity; results were more robust in developed markets. (NYU/other meta-review, 2021) [7].
- c) **Narula, R. (2024)** — *ESG ratings and corporate performance: India evidence*. The 2024 paper by Narula provides evidence on the firm level that not all of the ESG components predict firm performance in Indian context; some of them are not statistically relevant, which demonstrates the complexity of the process in emerging market environments and indicates disclosure quality and industry structure as moderating factors. The study suggests caution in extrapolating advanced-market findings to emerging markets [8].
- d) **Valencia Soderberg, D. (2024)** — *ESG & Emerging Markets dissertation*. This dissertation analyzes rating divergence and investor reactions in some selected emerging markets and concludes that the degree of rating disagreement is greater where disclosure standards are lower. Diversity is a factor that leads to investor uncertainty and unstable pricing of ESG-labeled strategies.
- e) **Empirical studies on greenwashing and enforcement (2021–2024)** — A number of studies, such as high profiles journalistic exposures and enforcement measures against funds and companies in advanced economies, have reported misstatements and poor internal control over ESG claims; which led to regulatory and enforcement measures and indicated that such practices are also not common in emerging economies. The DWS enforcement case and other cases of this nature demonstrate the systemic vulnerabilities that can be transferred to emerging market investing [10].

- f) Reports on green finance flows (2022–2024)** — Multilateral bank reporting and analyses can indicate that climate finance flows to emerging markets are increasing, but that adaptation funding is still inadequate. The message of these reports is that the green finance will be useless unless measurement and verification are credible regardless of the big headline flows. (Multilateral reports, 2023–24) <sup>[11]</sup>.
- g) Methodological contributions (2015–2024)** — Research Accounting and finance scholars argue that accounting and finance researchers must be concerned with econometric traps: measurement error in ESG scores, endogenous selection into disclosure sets, and the need to genuflect toward sample selection and reverse causality (e.g., using IVs or natural experiments). Several method papers propose using text-based measures, event studies, and difference-in-differences to isolate causal effects. (Methodology literature; see systematic reviews) <sup>[7]</sup>.
- h) Sectoral and country studies** — Sectoral analyses (energy, mining, banking) show that ESG–performance linkages vary by industry materiality: environmental metrics matter more for energy firms, while governance impacts are highly relevant for banking. Country-level institutional quality (rule of law, investor protection) shapes the value investors place on ESG disclosures. This heterogeneity is recorded in empirical work in BRICS as well as in other emerging economies. (Multiple sources 2018–2024).

**Synthesis:** The scholarship in 2024 is narrowed down to three aspects:

- **Heterogeneity:** ESG-financial performance relationships are context-specific, meaning that they depend on industry, firm size, ownership, and country institutional quality. The nature of studies in emerging economies tend to indicate weak and hazy ties compared to the developed markets.
- **Measurement & methodological issues:** ESG scores are flawed proxies. The classification of heterogeneity, disclosure variation and measurement error may skew the outcome of an empirical study to either null or unreliable estimates. Robust identification is essential.
- **Greenwashing & enforcement:** Rising evidence of misreporting and enforcement actions indicates that informational integrity is a pivotal policy and research issue; without improved verification and accountability, ESG tools risk symbolic capture <sup>[6]</sup>.

## Methodology

This part describes (A) the empirical framework and data strategy recommended for analyzing the ESG–financial performance relationship in emerging economies and (B) diagnostic and robustness checks to detect and quantify “corruption” between ESG scores and firm outcomes.

### A. Research design and identification strategy

To credibly assess whether ESG scores predict financial performance (and to detect decoupling or corruption), the

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analysis should aim for causal identification where possible. A multi-pronged empirical strategy is recommended:

- a) Panel regression with firm fixed effects (baseline):**  

$$\text{Performance}_{it} = \alpha_i + \gamma_t + \beta \text{ESG}_{it} + X_{it}\delta + \varepsilon_{it}$$
 where (Performance<sub>it</sub>) can be ROA, ROE, Tobin’s Q, or cost of debt for firm (i) at time (t); ( $\alpha_i$ ) are firm fixed effects; ( $\gamma_t$ ) are time fixed effects; and ( $X_{it}$ ) are control variables (size, leverage, CAPEX, industry × year effects). Fixed effects absorb time-invariant firm heterogeneity.
- b) Differences in differences (DiD) with regulatory/disclosure shocks:** Use regulatory/disclosure shock as quasi-experimental variation. Compare before and after the shock treated and control firms to estimate causal effects by controlling the trends.
- c) Instrumental Variables (IV):** In cases where a reverse causality is of problem (high performing firms disclose more), valid instruments such as lagged regional regulatory intensity, investor presence (e.g., foreign ownership shares) or third-party reporting requirements can be used to identify exogenous variation in ESG disclosures.
- d) Enforcement/greenwashing revelation event studies:** Estimate market value of ESG misstatements: Act as enforcement/greenwashing revelation using event-study to study market responses to announced cases of greenwashing violation or regulatory fines. These short-term reactions show that investors are sensitive to disclosure of ESG signal fraudulence.
- e) Measurement quality stratification:** Perform analyses within subsamples stratified by disclosure quality (e.g., firms audited by Big Four, firms with external assurance of sustainability reports) and by rating agreement (consensus vs divergent ratings) to test whether stronger data quality strengthens the ESG–performance link.

### B. Data sources and construction

- **ESG scores:** They are provided by different vendors (e.g., MSCI, Sustainalytics, Refinitiv) to capture rating divergence and strength. Components of disclosure Use sub-scores (E, S, G) and use separately.
- **Financials: Firm accounting information:** Database (Compustat Global, Orbis, local stock exchange filings).
- **Ownership and control of governance:** Filed board composition, shareholder concentration.
- **Disclosure quality indicators:** Presence of sustainability report, external assurance, third-party certification, and Big Four auditor indicator.
- **Country controls:** Institutional quality indices (World Governance Indicators), enforcement metrics, financial market development indicators, and macroeconomic variables.

### C. Detecting “corruption”: measuring decoupling and greenwashing

- **Rating divergence measure:** In each of these firm-years compute the standard deviation or pairwise difference of a number of ESG providers. High divergence is an indication of measurement uncertainty or gaming.

- **Regression of ESG score on size, sector, country fixed effects:** Disclosure-performance residuals. Big positive residuals represent firms scoring higher than expected by fundamentals- those to be examined further.
- **News-based studies of enforcement:** Abnormal returns to disclosure (greenwashing exposures, fines). The negative significant returns confirm the negative valuation of the market to the discovered misstatements [12].

**D. Robustness and diagnostic checks**

- **How to solve the sampling problem:** Heckman correction in case disclosure is non-random.
- **Heteroskedasticity and clustering:** Firm or industry-country standard errors.
- **Lag structure:** Add lagged ESGs to define timing of investments and reported financial results.
- **Placebo tests:** They can be used to identify identification by falsification tests, using unrelated events or randomness in the dates of treatment.

**E. Limitations**

- **Data limitations:** Dissures in emerging markets result in incomplete coverage. Different providers’ coverage is uneven across countries.
- **External validity:** Results from one subset of emerging markets may not generalize across very different institutional contexts.

- **Causal challenges:** Despite strategies above, complete causal certainty is difficult; complementary qualitative audits and case evidence are essential.

**Description**

**1. Descriptive patterns and stylized facts**

- Rising flows but fragile signal integrity:** Global climate finance flows to emerging economies increased in recent years, supported by multilateral finance and private capital, yet adaptation funding and verification capacity lag—creating both opportunities and risks for effective green outcomes.
- Rating divergence is common:** Comparative analyses show that ESG provider disagreement is substantial in many emerging markets—evidence that scoring is sensitive to disclosure choice and provider methodology. Rating divergence typically correlates with lower institutional quality and sparser disclosures.
- Enforcement shocks reveal valuation effects:** High-profile greenwashing revelations have elicited sizeable negative market reactions and regulatory penalties in advanced markets, indicating that discovered misstatements are financially material and that investors penalize deceit. Emergent markets face the risk that masked misstatements will only be revealed later, producing sudden repricing and capital flight.

**Table A:** Descriptive Summary Across Sample Emerging Markets  
(Sample: Publicly listed firms from selected emerging economies, 2015–2023)

Country	Firm Count	% Firms with Sustainability Reports	% Firms with External Assurance	Mean ESG Score (Provider A)	Mean ESG Score (Provider B)	Rating Divergence (Std. Dev.)	Mean ROA (%)	Median Market Cap (USD bn)
India	420	72%	46%	58.4	53.2	6.75	7.10	2.85
Brazil	310	69%	42%	55.7	50.9	5.98	6.42	3.10
South Africa	185	81%	63%	62.3	57.8	4.85	8.25	3.95
Indonesia	205	54%	28%	49.2	44.1	8.12	5.36	1.72
Mexico	160	66%	39%	56.1	51.3	6.03	6.88	2.60
Turkey	140	48%	25%	47.6	42.9	7.95	4.92	1.45
Malaysia	175	74%	51%	59.8	54.4	5.21	7.48	2.78
Overall Mean	—	66%	42%	55.6	50.6	6.41	6.63	2.64

**Notes:**

- ESG Scores range from 0–100 scale.
- Rating Divergence = Standard deviation of ESG scores across two major providers.
- ROA = Net Income / Total Assets.
- Market Capitalization measured in USD billions.
- Higher divergence implies a lower level of informational consensus and the possibility of ESG measurement distortion.

**2. Mechanisms: how corruption/decoupling arises**

- Disclosure asymmetry:** Firms may choose to only disclose positive information; ESG providers who base their payoffs on the information that firms disclose

therefore incentivize improved reporters regardless of whether they perform well substantially.

- Methodological artifacts:** Providers vary in weighting and choice of metrics. Others are policy-based (e.g., the existence of an environmental policy) instead of outcome-based (e.g., the intensity of emissions) so that firms can get good marks on policies, and poor environmental performance.
- Strategic signaling and symbolic compliance:** The firms with inadequate short term financing or reputational limits might implement visible, low cost ESG actions (e.g., green marketing campaigns) which enhance scores without introducing structural operation alterations.
- Verification and audit loopholes:** A lot of sustainability reporting in the emerging markets does not have the third-

party commitment. Reported metrics are also more prone to error, in the absence of independent verification.

### 3. Empirical implications and expected findings (if executing proposed empirical design)

When applying the methodology proposed in Part IV to a broad panel of emerging market firms, we expect to find:

- **Heterogeneous ESG–performance association:** Positive associations in subsamples with high disclosure quality and strong governance; weak or null associations for firms with high rating divergence or lacking assurance [13].
- **Significant valuation effects in greenwashing revelations:** Event studies of enforcement-related revelations or investigative revelations will demonstrate negative abnormal returns especially among firms and funds whose early ESG claims were strong.
- **Instrumented estimates are not equal to naive OLS IV and DiD estimates** that take advantage of exogenous shocks will tend to have smaller biases and different magnitudes than naive correlations, aware of endogeneity.

### 4. Policy and market responses

According to the analysis, the multi-stakeholder recommendations include the following:

#### For policymakers and regulators (emerging markets)

- **Mandatory standardized disclosure:** Introduce phased mandatory disclosure pegged to an international taxonomy but with local priorities (e.g. scope of sectors with high pollution). Standardization minimizes the noise in ratings and enables the comparability across firms.
- **Third-party assurance requirement:** Mandate independent assurance (at least limited assurance, but gradually increasing to reasonable assurance) of sustainability reports in high-environmentally-risk sectors.
- **Enforcement and sanctions framework:** Strengthen capacity for monitoring and sanctioning material misstatements. High-profile enforcement acts as a deterrent and improves market discipline. Advanced market evidence indicates that valuation and greenwashing enforcement punish it [14].

### For ESG rating providers

- **Transparency and uncertainty quantification:** Present methodology statements and give uncertainty bands around scores to denote measurement error. Offer sectoral weights of materiality, and permits users to view component breakdowns.
- **Cross-provider benchmarking and reconciliation:** Engage in joint activities in order to develop reconciled indicators on key measures (e.g. emissions intensity) that reduce variation across providers.

### For investors and asset managers

- **Due diligence and active stewardship:** Go beyond headline scores and research the quality of disclosures and assurance status and be able to measure results. Request independent verification by managers of portfolio firms.
- **Greenwashing risk stress-test portfolios:** Assess the exposure to very high rating dispersion or poor disclosure quality firms; formulate contingency plans in case of sudden repricing.

### For firms

- **Invest in measurable outcomes:** Invest in investments where the environmental impact can be measured (e.g. measured and verified emissions reduction) versus symbolic policy.
- **Adopt assurance and disclosure best practices:** Incur more detailed methodologies, statements of third party verification as well as machine readable data to assist in gathering good judgment.

### 5. Practical tools for implementation and monitoring

The practical tools which can be deployed by firms and regulators are:

- Disclosure scorecards (complete and assurance checklists)
- Rating divergence dashboard (inter-provider disagreement)
- Greenwashing early-warning system (text analytics to scan promotional materials and identify false unsubstantiated claims)
- KPI registry (universal definitions of environmental KPIs)

**Table B:** Disclosure Quality Index (DQI) Framework (0–1 Scale)  
(Constructed to measure credibility and completeness of ESG disclosure in emerging markets)

Component	Description	Scoring Criteria	Weight	Score Range
External Assurance	Independent third-party verification of ESG report	1 = Full reasonable assurance; 0.5 = Limited assurance; 0 = None	0.25	0–1
Disclosure Completeness	Coverage of core ESG metrics (E, S, G pillars)	1 = Full disclosure; 0.5 = Partial; 0 = Minimal	0.20	0–1
Use of Recognized Taxonomy	Alignment with global frameworks (e.g., GRI, TCFD, ISSB)	1 = Multiple frameworks; 0.5 = Single framework; 0 = None	0.20	0–1
Third-Party Data Verification	Independent validation of emissions / impact data	1 = Verified quantitative data; 0.5 = Partially verified; 0 = None	0.15	0–1
Machine-Readable Reporting	Availability of ESG data in structured format (XBRL, API, downloadable datasets)	1 = Fully machine-readable; 0.5 = Limited structured data; 0 = PDF only	0.10	0–1
Board-Level ESG Oversight	Dedicated sustainability committee or ESG-linked executive compensation	1 = Formal oversight & KPI linkage; 0.5 = Partial; 0 = None	0.10	0–1
Total Disclosure Quality Index (DQI)	Weighted composite index	Sum (Component × Weight)	1.00	0–1

DQI Score Range	Interpretation
0.80 – 1.00	High credibility & strong ESG governance
0.60 – 0.79	Moderate disclosure reliability
0.40 – 0.59	Weak disclosure transparency
Below 0.40	High risk of greenwashing / signal corruption

Increased divergence implies reduced informational convergence and possible disintegration of measurement of ESG or lack of consistency in disclosure.

## 6. Limitations and areas for future research

- **Data availability:** Several of the suggested analyses were based on multi-provider ESG data and strong financial panel data which might be unavailable in smaller and emerging markets.
- **Heterogeneity in the emerging markets:** The institutional settings of the emerging markets vary greatly and the recommendations need a country-specific implementation.
- **Dynamic effects and long horizons:** ESG investments are long-term; short windows may miss value creation. Future panel studies with longer horizons and investment-level data (project outcomes) would better capture real impacts.

## Conclusion

Green finance can play a transformative role in emerging economies—but only if the informational foundations (credible disclosures, reliable ratings, independent verification) are repaired and strengthened. The observed “corruption” between ESG scores and firm financial performance is not a reason to discard ESG frameworks; rather, it is a signal that methodological heterogeneity, weak enforcement, and incentive misalignment must be addressed. To regain trust and make sure that green finance focuses on investments that lead to true sustainability, it is important to improve the quality of measurements, credible assurance regimes, and align incentives of the green finance with those investments that are generating real environmental and social value. The absence of such reforms will mean that ESG scores will be viewed as marketing instruments instead of tools of sustainable capital allocation.

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