EVALUATING THE EFFECTIVENESS OF ESG INVESTING: A REVIEW OF FINANCIAL PERFORMANCE, REAL-WORLD IMPACT, AND MEASUREMENT CHALLENGES

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Abstract

Environmental, Social, and Governance (ESG) investing has become a central feature of modern financial markets, yet its effectiveness remains the subject of intense academic debate. This review synthesizes key findings from influential studies across three core dimensions of ESG effectiveness: financial performance, real-world impact, and measurement quality. The evidence on financial performance reveals a divide between empirical studies reporting neutral-to-positive risk-adjusted returns and theoretical models suggesting that strong investor demand may lower future expected returns. Real-world impact literature shows that active ownership can influence corporate behavior, whereas ESG fund flows exert limited effects on firms' cost of capital or environmental outcomes. Finally, research on ESG measurement highlights significant rating divergence and methodological inconsistencies, raising concerns about the reliability of ESG metrics used for capital allocation. By focusing on the most impactful contributions, this review clarifies the major points of convergence and contradiction within the ESG literature and provides a concise foundation for future research and policy discussion.

Key words: ESG Investing, financial performance, real-world impact, ESG ratings, rating divergence, sustainable finance

Introduction

Environmental, Social, and Governance (ESG) investing has grown from a niche segment of responsible investment into a mainstream financial practice influencing global capital markets. Institutional investors, asset managers, and regulators increasingly view ESG factors as essential components of investment analysis, motivated by rising concerns about climate risks, social inequality, and corporate accountability. As sustainable investing has expanded, so too has academic research exploring its financial implications, real-world impact on corporate behavior, and the reliability of ESG measurement systems. Yet despite substantial scholarly attention, the effectiveness of ESG investing remains deeply contested.

The academic debate can be broadly grouped into three fundamental questions. First, does ESG integration enhance or diminish financial performance for investors? Early empirical studies and meta-analyses suggest that ESG may improve long-term risk-adjusted returns, whereas newer equilibrium models argue that strong investor demand for green assets could lower their expected returns. Second, does ESG investing generate meaningful real-world impact by altering firms' environmental and social behaviors? Evidence on this channel is mixed: engagement-based mechanisms show promise, but recent work highlights that ESG fund flows may have limited influence on corporate cost of capital or environmental outcomes. Third, how reliable are the ESG ratings that guide investment decisions? The increasing divergence among ratings providers raises concerns about whether ESG scores accurately reflect sustainability performance or inadvertently facilitate greenwashing.

Given the rapid growth of ESG investing and the policy relevance of these debates, a concise synthesis of the most influential findings is essential. This review focuses on the main themes and biggest contrasts within the literature, rather than attempting an exhaustive survey. By concentrating on high-impact papers across finance, accounting, and sustainability research, the review aims to clarify where evidence converges, where it diverges, and what this implies for the future of ESG investing and corporate sustainability.

Methodology

This review employs a targeted, theme-driven synthesis of the academic literature on ESG investing effectiveness. Rather than conducting a broad systematic review—which often results in overwhelming volume but limited conceptual clarity—this paper uses a selective yet rigorous approach focused on the most influential empirical and theoretical contributions. The objective is to highlight the strongest evidence and the deepest contradictions across three core dimensions: financial performance, real-world impact, and measurement quality.

Paper selection criteria

The papers included in this review were selected based on the following criteria:

1. Scholarly influence and citation impact
    - Preference was given to highly cited articles published in leading finance, management, and accounting journals (e.g., *Journal of Finance*, *Review of Financial Studies*, *Management Science*, *Journal of Financial Economics*, *Strategic Management Journal*).
    - Seminal and widely referenced conceptual papers were included even if newer.
2. Relevance to the three core themes
    - Financial risk and return implications of ESG
    - Real-world corporate behavioral or environmental impact

- ESG measurement, disclosure, and rating divergence

Papers directly addressing these debates received priority.

3. Methodological diversity

To reflect the breadth of approaches in ESG research, the review includes:

- Empirical asset pricing studies
- Corporate finance and real-effects analyses
- Shareholder engagement and stewardship research
- Measurement and ratings studies
- Theoretical models of sustainable investing equilibrium

4. Recency

- Particular attention was paid to papers published in the last 5–10 years, reflecting how ESG has evolved with greater investor demand and regulatory scrutiny.
- Landmark earlier papers (e.g., Derwall et al. 2005) were included where historically foundational.

Search and screening approach

Papers were identified through searches in Google Scholar, JSTOR, SSRN, and Web of Science using keywords such as "ESG performance," "sustainable investing," "impact investing," "active ownership," "ESG ratings divergence," and "financial materiality." Reference lists of highly cited papers were also used to identify additional influential studies through backward and forward citation tracking.

Articles were screened based on whether they directly addressed the effectiveness of ESG investing along one of the three central dimensions. Purely conceptual discussions without empirical or theoretical rigor, corporate case studies, and practitioner reports were excluded unless they provided foundational insights cited by the academic literature.

Scope and limitations

Because the objective of this paper is to provide a concise synthesis of key themes and contrasts, the review does not attempt to catalog every empirical finding or industry report. Instead, it prioritizes conceptual clarity and representativeness of evidence over breadth. The conclusion of this approach is a targeted framework that captures the dominant lines of argument within ESG scholarship, while acknowledging that other specialized sub-areas (e.g., impact investing in private markets, ESG in emerging markets) fall outside the scope of this review.

Financial performance and ESG: risk–return effectiveness

The relationship between ESG characteristics and financial performance is one of the most extensively debated areas in sustainable finance. The literature presents two broad perspectives: studies suggesting that ESG can enhance risk-adjusted returns and resilience, and those arguing that ESG preferences increase asset prices and thereby reduce future expected returns. The contrast between these two views reflects differences in methodology, time horizons examined, and the conceptualization of ESG—whether as a value driver, risk factor, or investor preference.

A large body of empirical work finds that higher ESG performance is associated with equal or superior financial outcomes. The meta-analysis by Friede, Busch and Bassen (2015) synthesizes over 2,000 empirical studies and concludes that the majority report a neutral-to-positive relationship between ESG and corporate financial performance. This aggregate evidence suggests that ESG factors may contribute to long-term value creation, particularly through mechanisms such as reduced downside risk, improved stakeholder relations, and enhanced resource efficiency. Supporting this view, Khan, Serafeim and Yoon (2016) demonstrate that firms scoring well on *financially material* ESG issues—those identified by SASB as relevant for specific industries—significantly outperform on both stock returns and accounting measures. This materiality lens implies that ESG contributes to valuation when it captures risks that markets are slow to price or when ESG practices strengthen competitive advantages.

Other empirical studies reinforce the notion that ESG can function as a risk-mitigation tool. Derwall et al. (2005) show that “eco-efficient” firms outperform less efficient peers, while Statman and Glushkov (2009) find that socially responsible investing screens result in modest differences in returns but meaningful reductions in portfolio risk. Collectively, these studies support the perspective that ESG-oriented firms may be better managed, more resilient to shocks, and less exposed to controversy-related losses.

In contrast to these findings, a growing theoretical and empirical literature questions whether ESG leads to superior returns going forward. Pastor, Stambaugh and Taylor (2022) argue that in equilibrium, investor demand for sustainable assets raises their prices and lowers their expected future returns. In their model, investors receive non-financial utility from holding “green” assets, and as a result, the green premium compresses green asset yields. This implies that historical outperformance of ESG portfolios may reflect a repricing effect rather than a persistent alpha. Similarly, Pedersen, Fitzgibbons and Pomorski (2021) show that strong ESG preferences can constrain diversification and shift the efficient frontier, leading to potential return trade-offs for investors prioritizing sustainability.

More critical views also highlight the possibility that ESG investing may impose implicit constraints. For example, Berk and van Binsbergen (2022) argue that strict ESG screening reduces the available investment universe, thereby limiting diversification and creating mechanical drag on risk-adjusted performance. Although this effect may be small for broad ESG strategies, it becomes more pronounced for exclusion-heavy or thematic ESG portfolios.

Overall, the literature does not offer a single unified conclusion. Instead, two perspectives coexist: one emphasizing ESG as a source of long-term value and risk reduction, supported by extensive empirical evidence, and the other emphasizing ESG as a priced preference, suggesting lower future expected returns once markets adjust. The balance between these views may depend on the type of ESG metrics employed, the degree of investor demand for sustainability, and the extent to which ESG captures material risks rather than non-financial value signaling.

In summary, while early literature and meta-analyses identify ESG as broadly beneficial or at least non-detrimental to financial performance, recent theoretical work argues that ESG's financial benefits may diminish as sustainability preferences become fully priced. This tension sets the stage for the broader debate on whether ESG creates real economic impact or merely reshuffles capital based on investor preferences.

Real-world impact: does ESG investing change corporate behavior?

While much of the ESG literature focuses on financial performance, a central question is whether ESG investing produces real economic and environmental change. This involves assessing whether investor preferences, capital flows, or stewardship efforts lead firms to reduce externalities, increase green investments, or improve social outcomes. The evidence is sharply divided, with one body of research documenting meaningful corporate responses to ESG pressures, and another concluding that ESG flows generate minimal real-world impact.

A prominent strand of literature highlights the role of shareholder engagement as a mechanism through which ESG investors can influence corporate behavior. Dimson, Karakaş and Li (2015) provide one of the most influential empirical examinations of active ownership. Using a global dataset of engagement campaigns, they find that successful ESG engagement leads to improvements in corporate governance, environmental practices, and ultimately financial performance. This suggests that investor voice—rather than capital reallocation alone—can meaningfully shape firm behavior. Similar results are found in studies of CSR innovation: Flammer (2015) shows that firms adopting sustainability-oriented policies increase their innovation output, indicating that ESG pressures may stimulate productive organizational changes.

A related literature examines whether firms adjust their cost structures or investment profiles in response to ESG considerations. Krüger (2015) documents that the market reacts positively to "good" CSR events and negatively to "bad" ones, implying that investors recognize and reward genuine improvements in firm conduct. Such findings support the view that ESG can align managerial incentives with broader stakeholder interests.

However, the strongest critiques of ESG's real-world effectiveness come from recent studies showing that capital flows into ESG funds do not significantly influence corporate environmental performance. The most important contribution is Hartzmark and Shue (2023), who argue that sustainable investing suffers from low "impact elasticity." Their analysis demonstrates that large capital flows into ESG funds tend to reallocate ownership among investors without altering firms' cost of capital sufficiently to induce meaningful behavioral changes. In other words, green firms already enjoy low financing costs, leaving little room for ESG-driven improvements, while brown firms face only weak penalties that do not materially affect investment decisions. This finding directly challenges the assumption that ESG investing, as currently practiced, creates substantial environmental benefits.

Further skepticism arises from the role of rating divergence in weakening ESG's transmission mechanisms. Berg, Kölbel and Rigobon (2022) show that different ESG rating agencies disagree considerably in their assessments, which means that capital flows responding to ESG signals are diluted and inconsistent. Without clear and unified metrics, investors struggle to direct capital toward firms that truly improve environmental or social outcomes. A complementary conceptual analysis by Kölbel, Heeb, Paetzold and Busch (2020) argues that only specific channels—mainly shareholder engagement and capital allocation that materially alters financing conditions—can generate real impact. They conclude that many popular ESG strategies, particularly those based on simple screening or index-based reallocation, are unlikely to produce substantive change.

Empirical studies of firms' financing conditions reinforce this skepticism. For instance, Chava (2014) finds that environmentally harmful firms face only modestly higher financing costs, suggesting that markets do not impose strong penalties on negative externalities. Without substantial cost-of-capital effects, the ability of ESG investing to shift corporate decision-making remains limited.

Taken together, the literature reveals a sharp divide. On one side, engagement-focused research documents that investor voice can influence corporate policy, particularly in governance and innovation. On the other side, capital-based studies show that ESG fund flows produce weak incentives for firms to change, due to small financing effects, rating divergence, and the labeling nature of ESG portfolios. The real-world impact of ESG therefore seems highly dependent on the mechanism used: engagement and active ownership appear effective, whereas passive reallocation and preference-driven capital flows are far less so.

Measurement and ratings effectiveness: reliability, divergence, and implications for ESG investing

A defining challenge in evaluating ESG investing effectiveness is the quality and consistency of the underlying ESG metrics. Unlike financial accounting standards, ESG measurement lacks universally accepted definitions, methodologies, and disclosure requirements. As a result, ESG ratings often vary substantially across providers, raising concerns about whether investors are directing capital based on accurate assessments of firms' environmental and social performance. The literature on ESG measurement overwhelmingly points to significant limitations in current rating systems, with important implications for both financial performance studies and real-world impact evaluations.

The most influential critique of ESG ratings comes from Berg, Kölbel and Rigobon (2022), who document large disagreements across major ESG rating agencies. Their analysis decomposes rating divergence into three components: scope divergence (differences in what each agency measures), measurement divergence (differences in how metrics are quantified), and weight divergence (differences in how indicators are aggregated). They find that measurement divergence is the dominant source of disagreement, implying that even when agencies consider similar underlying issues, their scoring approaches differ dramatically. Such divergence weakens the ability of investors to interpret ESG scores as objective indicators of sustainability performance and introduces substantial noise into capital allocation decisions.

Expanding on this theme, Christensen, Serafeim and Sikochi (2022) argue that sustainability assessments are inherently subjective because corporate disclosures vary in quality and because different raters emphasize distinct dimensions of ESG. Their work shows that more extensive disclosures do not necessarily reduce rating disagreement. In some cases, increased disclosure can even amplify divergence because agencies interpret complex information differently. This suggests that mandating more ESG reporting, without standardization, may not improve the comparability or reliability of ESG metrics.

A related concern is whether ESG ratings reflect *actual sustainability performance* or simply firm characteristics correlated with good disclosure practices. Several studies show that firms with sophisticated reporting frameworks often receive higher ESG ratings regardless of their underlying environmental outcomes. This raises the risk of greenwashing, where firms appear sustainable on paper but do not materially reduce negative externalities. Rating noise also means that ESG fund flows may not target firms with the greatest need for improvement, thereby diluting the intended impact of sustainable investing strategies.

Despite these critiques, some studies provide evidence that ESG ratings can still be informative when they capture *material* issues. Khan, Serafeim and Yoon (2016), while primarily a performance study, show that ratings focusing on financially material ESG factors predict future financial performance and improve risk-adjusted returns. This suggests that part of the divergence problem stems from overly broad rating frameworks that include immaterial or weakly related ESG indicators. When ESG measures are more focused and aligned with industry-specific risks, their predictive and informational value improves.

Still, the broader implication of the measurement literature is that rating inconsistency undermines the effectiveness of ESG investing, both as a risk-management tool and as a mechanism for driving corporate change. Investor attempts to allocate capital toward sustainable firms are limited by the lack of a unified measurement standard, while firms face inconsistent signals about which ESG practices actually matter to markets. This creates a feedback loop where ESG investing may reinforce disclosure rather than environmentally or socially beneficial action.

In sum, the literature highlights a significant measurement challenge at the heart of ESG investing. ESG ratings are often noisy, inconsistent, and reflective of subjective methodological choices. While materiality-based frameworks offer a partial solution, the absence of standardized measurement limits the reliability of ESG ratings and weakens the linkage between ESG capital flows and real-world sustainability outcomes. Improving ESG measurement is therefore essential for the credibility and effectiveness of sustainable investing strategies.

Conclusion

The academic literature on ESG investing presents a complex and often contradictory picture of its effectiveness. Across the three central dimensions reviewed—financial performance, real-world impact, and measurement quality—clear patterns emerge that highlight both the potential and the limitations of ESG as it is practiced today.

On financial performance, decades of empirical evidence suggest that ESG integration does not systematically harm returns and may enhance long-term risk-adjusted performance through mechanisms such as improved stakeholder relations and reduced downside risk. At the same time, recent equilibrium models caution that increased investor demand for sustainable assets may compress their expected returns going forward. This tension suggests that ESG's financial benefits may be contingent on market conditions, investor preferences, and the materiality of the ESG factors considered.

In terms of real-world impact, the most effective channel appears to be active ownership. Engagement-based studies provide compelling evidence that investors can influence corporate behavior, strengthen governance, and support sustainability-oriented innovation. However, capital-allocation approaches—particularly those relying on ESG scoring and passive fund flows—show limited ability to shift firms' cost of capital or induce meaningful environmental change. The finding that ESG flows often reshuffle ownership without altering corporate incentives is a critical challenge to the premise that sustainable investing alone can drive systemic transition.

Underlying both debates is the issue of measurement. Significant divergence among ESG ratings undermines the reliability of ESG assessments and weakens the transmission of investor preferences into corporate behavior. Without standardized, consistent, and materially grounded measurement, ESG investing risks rewarding disclosure quality over actual sustainability outcomes and may allow persistent greenwashing.

Taken together, the literature suggests that ESG investing holds promise but remains constrained by methodological inconsistencies and weak causal mechanisms in its current form. Its effectiveness appears strongest when ESG practices are financially material and when investors actively engage with firms rather than relying solely on capital reallocation. The measurement challenge, however, remains foundational, and addressing it is essential for enhancing both the financial and real-world impact of ESG strategies.

Future research should focus on improving measurement frameworks, identifying conditions under which ESG capital flows influence corporate behavior, and exploring how regulatory interventions might enhance the credibility and impact of ESG investing. As global demand for sustainable finance continues to grow, resolving these challenges is critical for aligning financial markets with real-world sustainability goals.

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