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# *The ESG Validity Controversy*

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***Abstract.*** Environmental, social, and governance (ESG) investing has experienced rapid global growth yet faces significant challenges, including volatile performance, regulatory divergence, and methodological inconsistencies. This study systematically examines the effectiveness and limitations of ESG strategies through a comprehensive review of recent academic research and empirical cases—such as Tesla's rating discrepancies and Volkswagen's "Dieselgate"—revealing that ESG can enhance risk management and reduce capital costs for firms with robust sustainability practices. However, its ability to generate alpha remains contested due to factor overlap, greenwashing, and strong dependence on policy contexts and industry sectors. For instance, ESG outperforms in stringent regulatory environments like the EU but underperforms in regions resisting sustainability mandates. The study further identifies key solutions, including dynamic ESG ratings, AI-enhanced monitoring, and industry-tailored metrics, to improve assessment accuracy and strategic applicability. Ultimately, ESG investing is not universally effective but functions within critical boundaries shaped by policy, sector characteristics, and temporal cycles. Investors and policymakers must adopt nuanced, adaptable approaches to leverage ESG's benefits while mitigating its inherent constraints.

***Keywords:*** ESG Investing, Policy Dependence, Greenwashing, Dynamic Assessment.

## 1.Introduction

In recent years, environmental, social, and governance (ESG) investing has experienced significant growth globally, while also facing increasingly complex market volatility and policy divergences. According to the Global Sustainable Investment Alliance, ESG assets under management expanded rapidly from $23 trillion in 2016 to $41 trillion in 2023, achieving a compound annual growth rate of 9.8%, reflecting the growing acceptance of sustainable finance concepts within the mainstream investment community [1]. However, this development has not been without challenges. Between 2022 and 2023, ESG investing experienced a significant pullback. For example, US ESG equity funds experienced a massive net outflow of $30 billion in 2022. Factors contributing to this decline include a rebound in traditional asset returns driven by rebounding energy prices, weak short-term performance of ESG strategies, and a crisis of confidence stemming from "greenwashing" practices.

The policy environment is also polarized. The European Union, through the Sustainable Finance Disclosure Regulation, has established the world's most stringent disclosure framework, promoting

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the legalization and standardization of ESG. Conversely, some US states, such as Texas, have passed legislation explicitly excluding the use of ESG factors in public investment, highlighting the political and cultural resistance ESG faces in its global promotion.

Whether ESG investing can generate excess returns persists in both academic and practical circles. Supporters argue that companies with high ESG ratings tend to achieve more stable financial returns due to their superior risk management, operational efficiency, and long-term resilience. For example, MSCI research shows that between 2018 and 2023, companies with high ESG ratings achieved an annualized return that was 2.3% higher than those with lower ratings [2]. However, opposing views are equally noteworthy: during the 2022 energy crisis, BlackRock's ESG-themed ETFs fell significantly more than the broader market, raising questions about their defensive capabilities.

Against this backdrop, this study systematically reviewed key academic literature and case studies from the past five years, including empirical research published in top journals like the Journal of Finance, as well as representative cases such as Tesla's conflicting treatment by different rating agencies, in an attempt to comprehensively assess the effectiveness and boundaries of ESG investing. The study aims to reveal the mechanisms by which ESG factors operate in diverse market environments, identify the core factors influencing their effectiveness, and provide theoretical foundations and practical advice for investors and policymakers, thereby advancing ESG investing from theoretical advocacy to scientific decision-making.

## 2.Theory and empirical support for ESG effectiveness

The effectiveness of ESG investing has been widely supported both theoretically and empirically, with its mechanisms primarily manifesting through risk aversion and capital costs. From a risk aversion perspective, companies with higher ESG ratings typically face lower regulatory and litigation risks. This can be explained by the "social contract theory"—that companies that actively fulfill their environmental and social responsibilities are able to establish stronger relationships with stakeholders, significantly reducing the likelihood of conflict [3]. Volkswagen's 2015 "Dieselgate" scandal is a prime example. Following the revelation of the emissions cheating scandal, its ESG score plummeted from 68 to 32, followed by a 37% drop in its stock price within six months, resulting in a loss of over €30 billion in market value. In contrast, Toyota, with its more robust ESG performance, saw its stock price decline by only 8% during the same period, demonstrating greater resilience.

On the other hand, good ESG performance also helps companies secure funding at lower costs. This mechanism aligns with the predictions of "signaling theory"—that ESG advantages can send a positive signal to the market regarding a company's long-term sustainability capabilities, thereby reducing the risk premium demanded by investors [4]. Apple's 2022 green bond issuance is a compelling example. The bond, valued at $4.7 billion, carried a coupon rate of 2.85%, 50 basis points lower than conventional bonds of the same period, and was oversubscribed by three times, demonstrating the market's strong recognition and preference for ESG assets.

Empirically, ESG strategies have demonstrated consistent excess returns across both individual stocks and funds. For example, Unilever's "Sustainable Living Plan," implemented from 2016 to 2021, saw its stock price rise by 89% during that period, significantly outperforming its competitor, Nestlé, which saw a 57% increase. This outperformance can be attributed to ESG-driven accelerated product innovation, improved operational efficiency, and enhanced brand value. Its sustainable product line grew at twice the rate of its traditional counterparts, energy conservation and emission reduction measures resulted in cumulative cost savings exceeding €1 billion, and brand preference

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among young consumers increased by 15%. Similarly, at the fund level, the long-established Parnassus Core Equity Fund in the United States achieved a total return of 480% between 2005 and 2023, outperforming the S&P 500 by 130 percentage points over the same period. The primary sources of this excess return include overweighting in ESG-friendly sectors, mitigating share price shocks from governance scandals through ESG screening, and superior risk management. For example, during the 2008 financial crisis, the fund's decline was 12 percentage points less than the overall market, demonstrating superior drawdown management.

## 3.Theoretical and empirical evidence questioning the effectiveness of ESG investing

Although ESG investing has garnered widespread market attention in recent years, its effectiveness remains subject to numerous theoretical and empirical skepticism. From a theoretical perspective, a key challenge stems from the issue of factor overlap. A 2021 study by Pedersen et al. in the Journal of Financial Economics found that after controlling for traditional quality factors such as return on equity (ROE) and leverage, the excess returns of ESG factors themselves became statistically insignificant. This finding challenges the independence of ESG factors and suggests that the so-called "ESG premium" may simply be another manifestation of the effects of traditional factors. Another theoretical controversy concerns opportunity costs and liquidity constraints. For example, the Norwegian Sovereign Wealth Fund disclosed in its 2021 annual report that it had lost approximately $4 billion in potential returns due to its ESG policy of excluding coal investments, equivalent to a 0.23 percentage point reduction in the fund's average annual return, highlighting the potential financial costs of ESG constraints.

Empirical research further reveals inherent contradictions within the ESG rating system. For example, Tesla, while included in the S&P 500 ESG Index in 2020, received a downgrade of its ESG rating to CCC by MSCI. This phenomenon reflects significant disagreements among rating agencies regarding weightings and assessment criteria, leading to widely varying evaluations of the same company. Furthermore, "greenwashing" practices have severely undermined the credibility of ESG products. In 2023, the US Securities and Exchange Commission fined Deutsche Bank's DWS Group $19 million for claiming 100% ESG integration in its fund, when 34% of its holdings had not undergone ESG assessments. Such incidents not only expose methodological inconsistencies but also highlight the real-world challenges of verification challenges and prominent agency problems.

The effectiveness of ESG investing also exhibits strong environmental dependence and contextual limitations. Research shows that in regions with strong policy support, such as when the EU carbon price is above 80 euros per ton, the explanatory power of ESG factors on stock returns increases significantly. In contrast, in policy-restricted regions, such as Texas, traditional energy stocks perform better, making the policy environment a key moderating variable for ESG excess returns. Furthermore, industry characteristics also influence ESG effects: in highly sensitive industries (such as utilities and materials), the positive correlation between ESG performance and financial performance is more pronounced; in less sensitive industries, such as technology, this correlation is weaker. This evidence suggests that ESG investing is not universally applicable; its effectiveness is highly dependent on external policies, regional market structure, and industry attributes. Investors should carefully assess its applicability and potential limitations.

## 4.The root of the controversy: conflict between methodology and reality

The current controversy and challenges facing ESG investing stem largely from methodological flaws in its ratings system and their incompatibility with real-world scenarios. A prominent issue is

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the diverging standards among rating agencies. Take Amazon's 2022 ratings, for example: MSCI gave it an AA rating, specifically recognizing its environmental performance, while Sustainalytics classified it as "high-risk." This conflict stems from multiple methodological differences, including the varying weightings assigned to the three key dimensions of E, S, and G—MSCI assigns a 45% weight to environmental factors, while Sustainalytics prioritizes social factors. Data sources also differ, with MSCI relying primarily on voluntary disclosures by companies, while Sustainalytics relies more on third-party monitoring. Furthermore, inconsistent scoring criteria lead to widely varying assessments of the same issue, such as labor conditions. This ratings confusion not only complicates investor decision-making but also severely undermines the overall credibility of ESG assessments.

Furthermore, the choice of research timeframe significantly influences the judgment of ESG effectiveness, further highlighting methodological sensitivity and instability. Brooks and Oikonomou, based on data from 2015–2020, concluded that ESG funds outperformed traditional funds by an average of 2.1 percentage points annually [5]. However, Morningstar reversed this conclusion after incorporating the 2022 energy crisis into their analysis, showing that ESG funds underperformed by an average of 1.8 percentage points annually [6]. This strong dependence on time periods reflects the significant cyclicality of ESG factors, which are particularly disadvantaged during periods of rising energy prices. Furthermore, existing research often fails to fully incorporate extreme market scenarios, resulting in a widespread "survivorship bias." The homogeneity of strategies also exacerbates the risk of collective drawdowns during market style shifts.

Unexpected events in real-world situations further test the adaptability and consistency of the ESG framework. The outbreak of the Russo-Ukrainian war is a prime example. According to the Financial Times, several European ESG funds adjusted their strategies in 2022, increasing their holdings of military-industrial companies such as BAE Systems, despite the company's low ESG rating of C [7]. The logic behind this behavior lies in the fact that rating agencies reclassified "national defense and security" as "social responsibility," attempting to reconcile the conflict between values and practical needs during a unique period. This case not only reveals the rigidity and lag of ESG standards in responding to geopolitical crises, but also reflects the lack of transparency in rating adjustments, which has left investors caught in a dilemma between ethics and returns, ultimately undermining the credibility of the ESG assessment system in the complex realities of the world.

## 5.Solutions and future directions

To address the current challenges facing ESG investing, improving rating systems and optimizing investment strategies are becoming key development directions. In terms of rating methodologies, the industry is gradually shifting from static assessments to more dynamic measurement systems. For example, S&P Global's 2023 rating adjustment for Saudi Aramco (2222.SR) reflects this trend: based on the company's actual 40% reduction in carbon emissions intensity between 2020 and 2023, its ESG score was raised from 10 to 45 [8]. This assessment mechanism, which focuses on measurable improvements and tangible results, significantly enhances the objectivity and incentive effect of ratings. At the same time, new technologies such as artificial intelligence are reshaping ESG risk monitoring capabilities. Truvalue Labs, as highlighted in the MIT Sloan Management Review (2021), cites a case study: by analyzing satellite imagery data, its system identified a tailings dam hazard at Vale in Brazil six months in advance, significantly preempting the response of traditional rating agencies [9]. This type of real-time, data-driven analytical approach not only significantly improves the timeliness of risk warnings but also provides a more powerful tool for

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identifying and preventing "greenwashing." At the investment strategy level, innovative approaches are constantly emerging to enhance the effectiveness of ESG integration. One such approach is the "ESG momentum" strategy, which focuses on companies with the fastest-improving ESG scores, rather than simply those with currently high scores. MSCI's 2023 research shows that portfolios employing this strategy can achieve an annualized excess return of 2.3% [10]. Ford Motor Company is a case in point. Its accelerated electrification transition led to an ESG rating upgrade in 2023, and its stock price rose 27% over the same period. Furthermore, establishing differentiated assessment standards for specific industries is becoming a consensus to improve the precision of ESG application. For example, the standards released by the Sustainability Accounting Standards Board clearly stipulate that for the banking industry, the focus should be on governance (G) dimensions, such as board independence and the robustness of anti-money laundering systems; while for the manufacturing industry, environmental (E) indicators, including carbon intensity and circular economy practices, are more critical [11]. This refined framework, tailored to industry characteristics, greatly enhances the relevance of ESG assessments and the practicality of investment strategies.

## 6.Conclusion

The effectiveness of ESG investing has significant boundary conditions, and its performance is highly dependent on the external policy environment and the company's own characteristics. The strength of policy support is a key factor. For example, data from the EU Emissions Trading System (EU ETS) for 2023 shows that when the carbon price exceeds 80 euros per ton, the explanatory power of ESG factors on stock returns increases significantly. In policy-restricted areas such as Texas, where legislation explicitly excludes ESG investing, traditional energy stocks have actually achieved a 20% excess return compared to ESG funds. This stark contrast demonstrates that the effectiveness of ESG investing is closely linked to the institutional context, and discussing its effectiveness without considering the policy environment is often biased.

At the same time, the industry and business characteristics of a company also constitute important boundary conditions. In highly sensitive industries such as energy management, ESG factors often directly affect a company's financial performance. Schneider Electric (SU) is a typical example. Driven by carbon tax policies, its energy efficiency solutions achieved a 19% profit margin in 2023, significantly higher than its traditional business. In contrast, the influence of ESG factors in sectors like technology is relatively limited: although Meta (META)'s ESG score improved in 2022, its stock price fell 64% that year, indicating that its valuation remains largely dependent on traditional drivers such as earnings growth and the competitive landscape.

These findings collectively indicate that ESG is not a universal investment framework, and its effectiveness is strictly constrained by multiple factors, including policy cycles and industry attributes. The healthy development of ESG investing in the future urgently requires strengthening data consistency and dynamic assessment in rating science, enhancing industry sensitivity and cyclical flexibility in investment strategies, and improving adaptability to diverse institutional environments in policy integration. Only by fully understanding these boundaries and making corresponding adjustments can ESG truly become a reliable investment tool in a sustainable financial system.

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