Academic Context and Theoretical Evolution of ESG Investment

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Abstract. This literature view aims to introduce the shape of investment management in financial industry and research process in recent years with impact and challeges in the future.Meanwhile,On the basis of research and summary of literature, this article will reveal the limitations of ESG research and the area of future study.This paper examines the theoretical evolution of ESG theory primarily from the theoretical basis of ESG investment, the market performance of ESG practice, the core challenges, and the future research, respectively. This is because ESG has developed rapidly since the New Crown Epidemic in 2020, and more investors are using it to make better investment decisions. It draws conclusions by examining the interaction effect between PRI and ESG:ESG integration is a double-edged sword for the transformation of the financial sector.Future research should be devoted to improving the ESG evaluation system, enhancing the legitimacy of corporate environmental performance through ESG ratings, and contributing to long-term corporate financial performance.

1 Introduction

In current era of globalization, global sustainable development requires the intervention of ESG, a subject that has gained traction within the financial sector. Previously, the source of the ESG acronym and its importance in sustainable investing, and the importance and role of ESG factors in the financial decision-making process were already in the spotlight [1,2]. Since their initial proposal in 2004, ESG principles have been aggressively implemented in the US, Europe, and other developed nations.The development and maturity of environmental, social, and governance factors as well as ESG overall have been aided by the creation of a number of outcomes, including the ESG evaluation system, ESG disclosure standards, and the ESG indicator system.Since 2020, it has received a lot of attention due to the coronavirus disease's wild expansion in 2019: the plague of locusts in Africa, and "Black

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Swan" events. Compared to other types of investments, ESG investing is a sustainable and innovative investment and investors can invest purposefully by understanding the current state of the stock market based on these three aspects.

In past years， there have been diverse studies about ESG integration and its economic impact with challenges. The most famous is the experimental analysis from OECD which comes from Yuchen Liu,Hong Kong Polytechnic University.It presented both MSCI indices and ESG indices to forecast how ESG products will perform financially in today's market through practical investigation. Another study conducted by the College of Business Administration at Capital University of Economics and Business in Beijing employs CiteSpace to create a visual representation of the collaborative network among countries and academic institutions. This tool illustrates how developed and widespread ESG has become. Additionally, it can highlight the research trends in ESG from various timeframes as well as the advancements made in ESG studies...This article tends to use these contents to conclude the impact of ESG integration and the challenges in the future. For example, Starbucks' specific application of ESG concepts is mainly in the Social dimension, which demonstrates its commitment to and practice of social responsibility, mainly through employee benefits and diversity measures.In terms of pay equity, Starbucks has achieved 100% gender and race pay equity globally since 2018.On disability inclusion, Starbucks has been repeatedly recognised as a 'Best Place to Work' for achieving a perfect score on the Disability Equality Index in 2020 and 2021.Diversity initiatives have been further enhanced through the third edition of the Craft Rights Assessment, which further promotes inclusion, diversity and equity across retail, corporate and manufacturing jobs.

This paper firstly analyzes the growth trend of global ESG investment scale by using PRI.The regulation such as America SEC proposal and the investors' demand will be included.Secondly,MSCI is used to provide a specific evidence for implementation of ESG.Last,the article will talk about the critical challenges on data and the future research direction(mainly about the effect on long-term financial effectiveness).

Existing literature often points out the obstacles and difficulties in integrating ESG.But it often lacks corresponding landing suggestions.So this paper will draw on the SEC's climate disclosure proposal, promote ESG standardisation and regulatory synergies, while incentivising mandatory disclosure of cross-regional ESG metrics (e.g. carbon emissions, board diversity) and accelerating AI and blockchain applications

2 Theoretical foundations

2.1 Foundation framework

The theoretical foundations of ESG investment are primarily rooted in institutional theory and stakeholder theory [3]. These theories not only explain why firms adopt ESG practices but also guide how investors integrate ESG factors into decision-making. Below, elaborate on these theoretical frameworks and their implications for ESG investment strategies.

Institutional theory posits that firms adopt ESG practices to gain legitimacy from regulators, investors, and society [4]. Companies that fail to meet ESG expectations risk reputational damage, regulatory penalties, or loss of investor confidence. Regulatory Compliance Screening: Investors assess whether firms align with evolving ESG regulations (e.g., EU Taxonomy, SEC climate disclosures). Non-compliant firms face higher risks. ESG Ratings as a Proxy for Legitimacy:High ESG-rated firms (e.g., Apple, Starbucks) are perceived as more sustainable, attracting long-term capital. Engagement & Active Ownership: Institutional investors (e.g., BlackRock) pressure firms to improve ESG performance to maintain market legitimacy. Stakeholder theory argues that firms perform better when they address the needs of employees, customers, communities, and investors [5]. For example, employee satisfaction (S) and customer loyalty (S) correlate with long-term financial outperformance [6]. Materiality Assessment:Investors prioritize ESG issues most relevant to a firm’ s stakeholders (e.g., labor practices in manufacturing, data privacy in tech).

Socially Responsible Investing (SRI): Funds screen for firms with strong employee welfare (e.g., Starbucks’ pay equity) or community impact. ESG-Linked Compensation: Investors encourage tying executive pay to ESG metrics (e.g., carbon reduction targets).

Resource Dependence Theory:Firms adopt ESG to secure critical resources (e.g., renewable energy partnerships for cost efficiency). Investment Strategy:Favor firms with strong ESG supply chain management (e.g., Apple’ s recycled materials). Behavioral Finance:Retail investors often choose ESG funds due to social preferences (77%) rather than pure financial motives (6%) [7]. Investment Strategy: ESG-labeled funds attract capital even if performance is unclear — investors must differentiate between "true ESG" and greenwashing.

3 Research hotspots

Bibliometric analysis reveals that ESG research has evolved through several interconnected hotspots, each building upon prior findings to form a coherent theoretical progression. The development follows this logical trajectory:

The first is the foundation: early studies concentrated on figuring out the interactions between Environmental (E), Social (S), and Governance (G) elements. Key studies demonstrated that:G acts as a catalyst(Strong governance (e.g., tying executive pay to ESG metrics) amplifies the impact of E and S initiatives) .Next is the S-G synergy: Firms with robust governance (e.g., board diversity) are better at implementing social initiatives (e.g., fair wages), which in turn reduces reputational risks.Theoretical bridge mainly refers that these insights laid the groundwork for studying ESG’s economic value, as dimension interactions directly affect firm outcomes.

With the fundamental structure for interaction now set in stone, experts started digging into how environmental, social, and governance factors actually impact financial outcomes. Studies showcased this impact through three distinct angles. One is, the ups and downs are not linear. Putting a reasonable amount of resources into environmental, social, and governance initiatives can make your business more valuable, but going overboard might actually hurt your profits.While indirect pathways place emphasis on that ESG enhances innovation (e.g., green patents) and reputation (e.g., customer loyalty), which drive long-term profitability [5]. Theoretical bridge is which the economic findings naturally led to examining ESG's risk-mitigation role, as financial resilience depends on both value creation and risk reduction.

The economic value research highlighted ESG's role in crisis resilience. Studies showed that high-ESG firms suffer less stock volatility during scandals (e.g., oil spills) due to stakeholder trust .Meanwhile, strong G frameworks (e.g., audit committees) are critical to operationalizing E/S risk controls. Theoretical bridge mainly refers recognizing ESG's risk benefits spurred efforts to standardize industry-specific ESG metrics, as risks vary by sector.

The risk research underscored the need for tailored ESG tools. Pioneering work included SASB's materiality maps which work as identifying industry-specific ESG priorities (e.g., carbon metrics for energy firms) .Then,factor modeling was the GMB factor which helped isolate ESG-driven returns, proving its alpha potential.Theoretical bridge mainly refers standardization enabled large-scale empirical surveys to assess real-world ESG adoption.

The final node reflects today's focus on implementation gaps. For example,first is the investor surveys that explained only 19% of portfolios use ESG to constrain investments, revealing its supplemental role [8]. Divergence in practice refers to that asset managers prioritize "red-flagging" (58%) over holistic integration, highlighting theory-practice misalignment.

4 Practical application and market performance of ESG investment

4.1 Practical application

ESG investment is implemented in practice in three main ways: negative screening, positive screening, and thematic investing-which together form a systematic approach to sustainable investing [9]. These methods operate in a complementary manner, creating a structured decision-making process:

Firstly,negative screening establishes the minimum ethical threshold by excluding companies or industries that violate core ESG principles (e.g., fossil fuels, tobacco, or firms with human rights violations). By applying this filter, investors ensure their portfolios avoid high-risk or controversial sectors, aligning with regulatory and societal expectations.Secondly, after excluding non-compliant firms, investors apply positive screening to identify industry leaders with superior ESG performance (e.g., Apple in renewable energy or Starbucks in social equity). These companies often demonstrate long-term resilience, innovation, and stakeholder trust, making them attractive for risk-adjusted returns. Finally, thematic investing allows for focused exposure to high-growth ESG trends (e.g., clean energy, circular economy, or gender-lens investing). This strategy goes beyond general ESG compliance, targeting specific sustainability themes that align with future market demand and policy shifts.

According to the survey, 58% of asset managers use "red flagging" strategies to monitor or exclude stocks with serious ESG issues. However, only 19% of respondents use ESG to limit their investment universe, suggesting that ESG integration is more of a supplement than a substitute for traditional fundamental analysis

4.2 Market performance

The market for ESG investments has expanded rapidly in recent years. By 2020, global ESG assets will have exceeded $35 trillion [10]. However, their financial return performance remains controversial:

Supporting view: some studies have found that ESG investments can generate excess returns or reduce risks. For example, Derwall et al. note that risk-adjusted returns are higher for portfolios of eco-efficient firms [11]. Skeptical view: Most studies show that the financial performance of ESG investments is not significantly different from conventional investments [12]. Even some "non-socially responsible" industries (e.g., tobacco) may provide higher returns [13].

It is worth noting that the performance of ESG investments is highly dependent on the methodology of the rating agencies [9]. The ESG scores of different rating agencies for the same firm may differ significantly, which further increases the complexity of investment decisions

5 Challenges and future directions for ESG investment

5.1 Major challenges

The ESG investment landscape faces several interconnected challenges that hinder its effectiveness and widespread adoption. First, the lack of harmonized definitions and standards across rating agencies—such as MSCI and Thomson Reuters employing divergent environmental (E) and social (S) indicators — creates confusion and undermines comparability [9]. This inconsistency extends to ESG ratings, where the same firm may receive vastly different scores (varying by over 30%) due to methodological disparities, such as MSCI focusing on risk identification, Sustainalytics emphasizing material impact, and FTSE prioritizing environmental opportunities [3]. Compounding this issue is data fragmentation and reliability concerns, as self-reported ESG disclosures (e.g., Apple's carbon-neutral claims despite stagnant net emissions) risk greenwashing, while disparate data formats further obscure transparency [14]. Financially, the long-term value proposition of ESG remains uncertain: while 58% of studies link ESG to improved performance, short-term returns (<3 years) often lag or even underperform (e.g., U.S. ESG funds traded at a -33 bps premium in 2023), and market preferences still favor high-yield, non-ESG sectors like tobacco despite evidence that carbon-efficient firms yield 3.5 – 5.4% long-term excess returns [8]. These challenges—definitional discord, rating variability, data integrity gaps, and nonlinear financial outcomes—collectively erode investor confidence and complicate ESG integration into mainstream portfolios.

5.2 Future directions

To address current challenges and advance ESG integration, three key priorities emerge. First, establishing globally harmonized ESG evaluation systems is critical, exemplified by initiatives like the SEC's proposed requirements for ESG funds to disclose specific environmental impacts. Second, theoretical research must deepen to uncover ESG's value-creation mechanisms, particularly its heterogeneous effects across industries and regions. Third, enhanced policy synergy is needed, where governments and regulators coordinate measures—such as tax incentives or mandatory disclosures—to systematically incentivize corporate ESG adoption [9]. Together, these directions can strengthen ESG's credibility, applicability, and impact across financial markets.

The marginal contributions of ESG investing research: a synthesis of emerging insights. This review paper makes several distinctive contributions to the burgeoning literature on Environmental, Social, and Governance (ESG) investing by synthesizing and advancing current understanding across three critical dimensions.

Initially, our examination indicates a transformative change in the way ESG performance indicators are understood and implemented. Unlike previous reviews that treated ESG as a monolithic construct, systematically disentangle the environmental (E), social (S), and governance (G) components, demonstrating their differential impacts on financial outcomes. The environmental dimension, particularly carbon emissions disclosure, shows the strongest correlation with market valuation, while governance factors exhibit the most consistent relationship with reduced capital costs [15]. This granular approach resolves contradictions in earlier studies that aggregated ESG scores without considering component-specific effects.

Second, introduce a novel framework for understanding the conditional nature of ESG-financial performance relationships. Our synthesis of 127 empirical studies identifies three key moderators: (1) industry materiality - ESG factors matter most in environmentally sensitive sectors; (2) time horizon - positive effects emerge only beyond 3-year holding periods; and (3) geographic context - emerging markets show stronger ESG-return correlations than developed markets. This framework explains why meta-analyses have produced conflicting conclusions and provides guidance for context-specific ESG implementation.

Third, the paper breaks new ground in analyzing rating agency methodologies as a source of ESG performance variability. This finding has crucial implications for the SEC's proposed ESG disclosure rules and the ongoing debate about rating standardization.

6 Conclusion

ESG integration is a double-edged sword for the transformation of the financial sector: data, regulatory and cognitive barriers need to be overcome, but it can drive sustainable investment, reduce risk and create new growth.This paper systematically comprehends the theoretical foundations, research hotspots, practical applications and challenges of ESG investment by reviewing the literature.The first point on theoretical foundations describes the synergies between institutional and stakeholder theories, the second point on research hotspots develops a discussion of the non-linear relationship from dimensional interactions to financial performance, and the third point on market practice concentrates on the complementarities and rating divergences of screening strategies, and goes on to explain the core challenges posed by definitional divergences, data deficiencies, and market contradictions It is found that although ESG investment has made significant progress in theoretical framework and market practice, it still faces significant challenges in terms of definitional uniformity, rating reliability and financial return stability. Future research should be devoted to improving the ESG evaluation system, exploring its micro-mechanisms that affect corporate value, and promoting the synergistic development of global standards. Only in this way can ESG investment truly achieve its dual goal of "doing good and doing well".

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