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Impact of ESG Activities on the Innovation Development and Financial Performance of Firms

Yury Dranev

PhD, Leading Research Fellow,

National Research University Higher School of Economics, Moscow, Russia,

ydranev@hse.ru, [ORCID](#)

Abstract

In the technology-driven economy, a firm's sustainable financial performance is significantly influenced by its efficiency in research and development (R&D) and broader innovation initiatives. Conversely, while embracing ESG-related activities can potentially open up a broader spectrum of funding, it may also impose challenges on companies as they strive to meet the escalating demands for sustainability practices and contend with increasing ESG-related risks. Hence, businesses are confronted with the imperative of making prudent ESG-related investments while simultaneously maintaining a strong track record in innovation performance. The findings of numerous studies suggest that investments in ESG projects can yield both positive and negative outcomes for innovation performance. However, recent trends within the ESG industry have amplified concerns regarding the trade-offs between ESG considerations, innovation endeavors, and overall financial performance

Keywords: ESG, social responsibility, R&D investments, innovation performance, information asymmetry, ESG rating

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Introduction

In the past few decades, businesses worldwide have significantly expanded their focus on ESG (Environmental, Social, and Governance) considerations. This shift towards greater social and environmental responsibility has substantially influenced resource allocation strategies within companies. This strategic shift, however, appears to be in conflict with the predictions of standard economic theory, famously articulated by Milton Friedman: “The social responsibility of business is to increase its profits” [1]. The substantial transformation in business practices and the underlying reasons for this transformation have garnered considerable attention from scholars. This paper seeks to provide a comprehensive overview of the academic discourse surrounding the relationship between ESG practices and company innovation activities, shedding light on potential risks to R&D performance arising from the growing prominence of ESG agendas.

Initially, the proliferation of ESG practices was often linked to various benefits for businesses, including a positive influence on long-term financial performance and the advancement of R&D initiatives. However, recent literature has documented diminishing benefits for firms engaging in social responsibility practices as well as raising concerns about the synergistic effects of ESG and innovation activities.

A critical question for financial scholars pertains to whether adherence to ESG criteria generates added value for investors [2–4]. The discussion regarding market reactions to ESG-labeled assets and the drivers behind the substantial surge in ESG investments is explored in the first section of this paper.

The environmental, social, and governance dimensions of ESG practices are frequently cited as factors that could potentially enhance a firm’s innovation performance [5; 6]. However, several authors have posited that a trade-off may exist between social responsibility and R&D projects [7; 8]. The literature examining the relationship between ESG and innovation and its implications for a firm’s R&D performance is examined in the second section.

While ecological innovations and improvements in HR management and social governance practices are generally regarded as catalysts for technological advancement, the benefits of social responsibility have led to the rapid and often unregulated proliferation of ESG activities. This, in turn, has given rise to the phenomenon of “greenwashing” and an information asymmetry between businesses and various stakeholders [9; 10]. Consequently, the diversity in ESG practice standards, coupled with economic instability, introduces additional risks that may undermine the positive outcomes of ESG activities on R&D development. These risks are explored in the third section of this paper, which is followed by a concluding summary.

ESG and Financial Performance

The significant growth in the ESG-labeled assets market has prompted a crucial question in contemporary finance research: What motivates investments in ESG? On the one

hand, portfolio theory posits that investors are rational, aiming to optimize risk-return ratios; therefore, the pursuit of green investments should be driven by superior returns, effectively transforming investors’ social responsibility into a quest for profitability [11]. Nonetheless, numerous studies have found that ESG-labeled assets often fail to deliver higher returns [3]. An examination of equity mutual funds in the U.S. market from 2004 to 2012 showed the existence of financial rewards from socially irresponsible investments [12]. Country-level analyses highlight the significance of the economic environment and financial stimuli in emerging countries, where the ESG aspects of investments are frequently overlooked [13]. On the other hand, the nonpecuniary utility of investors suggests an alternate behavior pattern [14]: investors may be willing to sacrifice some returns if they have strong preferences for ESG investments [15]. Some research challenges the positive relationship between ESG performance and market returns. For example, B.R. Auer and F. Schuhmacher [16] found that ESG investors achieved market-level returns in the Asia-Pacific region and the U.S., while ESG assets often underperformed in the European market.

Despite decades of research, predicting the market’s reaction to ESG-related news remains challenging. Several authors have focused on analyzing the financial market’s response to the emergence of ESG-related news and its impact on company value. However, while there is some consistency in the negative effects of bad news, the connection between positive news and company performance remains unclear. P. Krüger [17], who collected data on 2,116 corporate events categorized as positive or negative, revealed that the market reacts negatively to both good and bad corporate social responsibility-related news, although the effect of positive news is smaller, and linked the negative effect of positive news to the agency problem. In contrast, G. Capelle-Blancard and A. Petit [18], who studied a sample of 33,000 ESG news items about public companies, found that negative news from the media decreased a firm’s market value by 0.1%, while the impact of positive news was insignificant. Consequently, while “being good” and taking steps toward social and environmental responsibility does not pay, the market penalizes companies for “being bad” [19]. Recent studies by G. Serafeim and A. Yoon [20; 21], in contrast to prior literature, found that positive (negative) news led to positive (negative) stock price reactions.

Although empirical research on the market’s reaction to firms’ ESG activities yields mixed results, various meta-analyses aggregating empirical research have concluded that, in general, socially responsible investing and ESG considerations can be associated with higher returns compared to conventional instruments (e.g., [4; 22; 23]). Firms with good ESG performance can achieve higher long-term and short-term returns (e.g., [24–26]), as well as improved return on assets (ROA) [24; 27] and return on equity (ROE) [28]. Most empirical literature also supports the view that good ESG performance is usually associated with lower risk and a lower cost of capital [2]. ESG investing has an indirect impact and serves as a marketing tool,

increasing customer satisfaction and demand for the firm's products [29]. Given the potential benefits of ESG projects, poor ESG performance and negative media coverage increase the likelihood of CEO dismissal [30].

It is also essential to note that the rapid growth of ESG assets has not been limited by the overall growth of the financial market itself; rather, there has been a shift towards ESG investing and a diversion of funds from conventional assets. For instance, a significant study analyzed the impact of the launch of Morningstar sustainability ratings in the mutual fund industry in 2016. This natural experiment resulted in statistically significant increases in fund inflows for highly rated ESG assets, while low sustainability ratings were associated with net outflows [31].

Nevertheless, it is noteworthy that market reactions to ESG assets can change over time. A case in point is the important and widespread ESG practice of green bond issuance. Green bonds have been negatively perceived up until recently due to higher associated costs, lower returns, and increased risk [32; 33]. Green bonds, as financial instruments, resemble conventional bonds but aim to finance environmental projects. Recent studies, however, show a changing landscape: the index of green municipal bonds slightly outperformed the closest S&P index in the secondary market from 2014 to 2018, and the introduction of a "green" premium in the primary market also holds promise [34].

ESG and Innovation Performance

The previous section delved into the effect of ESG on financial performance and value creation. Equally significant in the ESG literature is the exploration of the relationship between social responsibility and a company's innovation activity. The allocation of limited resources has always been a major topic of interest for economists [35]. In today's rapidly evolving business landscape, efficient utilization of innovations and new technologies significantly influences both financial and overall firm performance [36]. Therefore, it is crucial to investigate the connections between ESG activities and R&D development. Modern economic growth, in the Schumpeterian sense, is fundamentally rooted in a continuous flow of innovations [37; 38]. Leveraging new technologies is a critical competitive advantage not only for R&D-intensive industries. The consequences of deciding not to invest in innovations and the inability to adapt to changes often outweigh the inherent risks associated with R&D activities [39–41]. However, a fundamental issue with the ESG agenda must be kept in mind: ESG encompasses a broad and often inconclusive spectrum of environmental, social, and governance practices, while the impact of E, S, and G factors on a firm's R&D performance varies significantly [42]. Academic literature describes scenarios of both synergy and trade-offs in the direct relationship between ESG activities and a firm's R&D performance [43; 44].

The synergy effect is particularly significant when ESG activities and R&D projects overlap [5; 6; 45]. For instance, many ecological innovation programs enhance the effi-

ciency of core business processes, offering innovators a competitive advantage, especially when implementing successful proactive environmental strategies [6; 46]. As an example of gains from ESG-driven innovations, several authors have discussed cost reductions due to efficient resource utilization [47; 48]. Recent research has shown that ecological innovations in the Chinese market from 2014 to 2019 typically improved a company's overall ESG profile, with the enhancement of the ESG rating playing a pivotal mediating role between green innovation and financial performance [49].

However, outside of overlapping R&D – ESG projects, most environmental practices introduce additional risks for firms, insofar as the latter tend to perceive the choice between ESG and R&D as a trade-off [7]. Nevertheless, green subsidies and direct government regulations remain significant instruments for promoting green development [50; 51]. Some scholars have revealed a positive link between R&D intensity and CSR specialization [52]: R&D-intensive firms tend to be more focused in their selection of ESG activities and avoid resource-related trade-offs between processes [53]. Another study found that higher R&D investments are usually associated with better green innovation performance measured by the number of green patents [54]. Given that the environmental aspect of the ESG agenda implies increased efficiency in energy and materials usage and promotes a sustainable, low-emission economy, some scholars have emphasized sectoral differences in the ESG – R&D relationship and identified synergistic effects from environmental practices in the industrial sector [55]. Implementing any ESG practice requires additional internal resources, and firms often face resource constraints [8]. Moreover, as several studies have emphasized, despite the importance of ecological and social investments, such investments are generally less attractive than R&D development in terms of returns [8; 56]. As a result, some scholars have discussed the role of society in supporting ESG initiatives and improving environmental quality through regulatory enhancements and subsidies [57].

Excluding the synergistic potential of green projects, the link between social practices and R&D performance is usually perceived as a trade-off between labor costs and labor productivity. However, R&D performance also correlates positively when ESG activities improve labor conditions, staff motivation, and organizational structure [58]. To a large extent, the individual innovativeness and creativity of key knowledge employees determine the efficiency of R&D investments [59; 60]. Empirical research demonstrates that fostering social values and social capital formation within R&D teams often yields positive outcomes for innovation performance [61].

Regarding the assessment of ESG impact on corporate profitability, several studies have emphasized the crucial role of corporate governance practices and the ability to establish efficient management systems aligned with the interests of the firm's shareholders [62]. The relationship between R&D investments and corporate governance has been explored at both firm and country levels [63]. Inno-

vation-oriented companies tend to rely on equity financing and typically have a higher proportion of activist institutional investors [64], while lower leverage and the presence of activist investors are often associated with greater levels of R&D investments [65]. Good corporate governance, meanwhile, sets the stage for efficient investments in environmental and social projects, creating value for shareholders and other stakeholders [66]. Overall, corporate governance plays an integrating role, as unagile management has limited capacity to benefit from investments in environmental and social projects and foster technological development. In contrast, good governance implies greater discipline and a focus on long-term sustainability [67].

ESG-related Risks and Innovation Performance

For several decades, the implementation of ESG activities did not prioritize high returns, not counting innovative firms with overlapping R&D and ESG specialization. Nevertheless, businesses have undeniably benefited from the ESG agenda, as all stakeholders, including investors and consumers, have exhibited a growing demand for it [68; 69]. ESG disclosure practices, in particular, have helped compliant firms attract additional financial resources on financial markets and increase revenues due to product differentiation and heightened customer attention [69]. Thus, common ESG practices have aimed to enhance company reputation and attract investors and customers. Firms tend to report only such ESG information that demonstrates regulatory compliance [68]. ESG practices have evolved into useful business tools with a positive impact on core business activities, with innovation playing a mediating role in this process [70]. Nevertheless, for a number of reasons the benefits of ESG-enhanced innovation may significantly diminish in the future.

Firstly, due to the growth of the ESG industry, firms are compelled to allocate more resources to compete with other ESG-compliant enterprises. In other words, when everyone is socially responsible, being socially responsible no longer gives a competitive advantage. As the new generation of investors may be hesitant to invest in firms with poor ESG performance [69], every business will be obligated to allocate resources to ESG merely to maintain its presence in the market. For companies with average ESG records, this increased spending can lead to additional financial constraints, potentially crowding out R&D investments and reducing financial efficiency. Scholars are already discussing the potential effects of mandatory ESG disclosure, which, in addition to the direct costs of report preparation and certification, could involve proprietary costs and litigation expenses [71].

Secondly, a growing body of literature on regulatory practices asserts that the ESG field requires additional regulation to assure greater transparency and coverage [72; 73]. Information asymmetry is one of the primary challenges in ESG investments. Companies typically provide non-standardized reports on ESG, often emphasizing their own

achievements. The costs associated with processing this information, along with news from the media, are exceedingly high and typically require a certain level of professional expertise, thereby biasing investment decisions and diminishing financial market efficiency.

To some extent, information asymmetry can be mitigated by professional intermediaries. Over the last decade, various rating agencies have attempted to make ESG performance more transparent. However, the use of ESG ratings as a proxy for socially responsible business practices still faces significant limitations. One of the main problems is that raters from different providers frequently disagree about a firm's ESG profile [74]. The industry suffers from a lack of standardized rankings, resulting in inconsistent information being available to investors [75]. For example, F. Berg et al. [76] reported that the average correlation between five different ESG raters ranged from 0.42 to 0.73, whereas the correlation between the credit ratings of leading agencies is often close to 1. Furthermore, ESG ranking can be subject to bias, with several researchers noting that large companies with more resources may gain advantages in corporate sustainability assessments (e.g., [77; 78]). Each ranking system aggregates the three pillars, yet these aggregations differ substantially and typically do not capture sectoral distinctions [79]. Consequently, while ESG investors differentiate among environmental, social, and governance issues, the ESG score has limited implications for the academic discussion of the factors directing the modern financial market [80]. Disagreement about a firm's ESG profile is positively correlated with equity risk, while the lack of reporting standards diminishes the potential benefits of ESG investments, as it remains unclear which practices matter to rating agencies and influence investor decisions [81]. From an investor's standpoint, mixed information about ESG profiles increases uncertainty, with the perspectives for above-market returns depending on the choice of ranking provider [10]. This may pose even greater challenges for firms actively engaged in innovation activities.

Finally, the global crisis has introduced additional risks to ESG-related markets. Some investors have considered ESG investing as a strategy to reduce portfolio risks [82]. However, the market downturn caused by COVID-19 provided a critical examination of the sustainability of ESG investments. The high level of uncertainty resulted in a surge of fund flows into low-ESG-risk assets [83]. However, some scholars pointed out that ESG assets displayed mixed financial performance [84; 85]. While investors sought safer investment strategies to mitigate downside risks [86], ESG assets did not prevent financial losses during severe economic shocks [87; 88]. The reasons behind instances of poor risk mitigation by ESG assets may be linked to the failure of ranking systems to capture what genuinely matters in ESG practices. Moreover, the pursuit of higher ESG ratings can incentivize "greenwashing" and ineffective ESG procedures rather than real actions toward sustainable development, with the consequences only becoming apparent during a crisis [9]. The volatile behavior of investors with regard to ESG-related risks during economic down-

turns can increase the cost of capital and negatively impact the innovation performance of firms.

Conclusion

The proliferation of ESG practices has been driven by society's inclination to reward socially responsible firms. Nevertheless, the absence of standardized reporting norms, discrepancies in ranking systems, the inability to effectively mitigate downside risks, and fragmented regulations have given rise to substantial information asymmetry and uncertainty regarding the true ESG profiles of firms. Consequently, as ESG practices become commonplace, company expenditures on social responsibility no longer confer competitive advantages and diminish the potential for synergy between ESG and R&D projects.

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