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PROSPECTS AND RISKS OF GREEN INVESTMENTS

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Abstract: Green investments are becoming increasingly important in the context of the global transition to a sustainable economy, but their effectiveness remains questionable due to the associated risks. This article provides a qualitative analysis of the prospects and risks of green investments based on a review of academic literature, reports from international organizations, and financial data. The results show a steady increase in investments and green bond returns, but reveal problems of market volatility, technological uncertainty, and "greenwashing".
Keywords:green investments, sustainable development, renewable energy, risks, returns, greenwashing, regulation.

Introduction. Modern global challenges such as climate change, ecosystem degradation and depletion of non-renewable resources highlight the need to transition to sustainable models of economic development. Green investment, which includes financial investments in renewable energy projects, energy efficiency, sustainable land management and low-carbon technologies, is seen as one of the key mechanisms for achieving this goal. According to the International Energy Agency (IEA, 2024), clean energy investment in 2023 will amount to US$1.74 trillion, reflecting its growing role in the global economy and efforts to meet the commitments of the Paris Agreement. This growth has been accompanied by increased government support, including subsidies and tax breaks, as well as increased interest from private investors and corporations. However, despite the obvious potential, green investments are associated with significant risks, such as financial market instability, technological uncertainty, and cases of "greenwashing" where the environmental performance of projects is exaggerated. This study aims to systematically analyse the prospects and risks of green investments in order to assess their contribution to sustainable development and identify critical factors influencing their long-term performance.

To analyze the prospects and risks of green investments, this study used a qualitative approach based on a review of secondary data and a synthesis of existing scientific and practical sources. The main body of information was collected from three types of sources:

1) scientific publications, including articles in peer-reviewed journals on economics, ecology and sustainable development (e.g. Journal of Sustainable Finance & Investment);

2) reports from international organizations such as the International Energy Agency (IEA), the United Nations Environment Programme (UNEP) and the World Bank, providing statistics and cases on green investments;

3) data from financial analytical platforms and reports from companies implementing projects in the field of renewable energy and energy efficiency.

The analysis process included the following steps: first, systematization of data on the dynamics of green investments, including investment volumes and key sectors (for example, solar and wind energy); secondly, the identification of success factors and risks based on a comparative analysis of successful projects (such as investments in offshore wind farms in Europe) and cases of failure (such as bankruptcies of companies in the biofuels sector). To assess the risks, particular attention was paid to studying the literature on greenwashing and regulatory gaps in the regulation of environmental investments. The analysis was conducted

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using qualitative methods such as thematic coding and critical review, which allowed us to identify key trends and contradictions in the development of green investments. A limitation of this approach is the lack of primary empirical data, but the use of authoritative sources ensures the reliability of the conclusions.

An analysis of the prospects and risks of green investments has revealed both significant potential and significant challenges associated with their implementation. The prospects for green investment are confirmed by the steady growth of financial investments in the sustainable development sector. According to the International Energy Agency (IEA, 2024), global investment in renewable energy in 2023 reached US$1.74 trillion, of which 45% was directed towards solar and wind energy. This growth is accompanied by an increase in the number of projects supported by government subsidies and international agreements such as the Paris Agreement. In addition, long-term returns on green investments have shown positive dynamics: the average yield on green bonds was 4.2% per annum over the period 2019-2023 (Bloomberg, 2024).

However, the analysis also identified significant risks that limit the effectiveness of green investments. Among them, market volatility, technological uncertainty and cases of greenwashing stand out. For example, in the biofuels sector, a number of companies have recorded losses due to unstable raw material prices and insufficient scalability of technologies. In addition, the lack of uniform standards for assessing the environmental performance of projects means that up to 15% of declared “green” investments do not meet sustainability criteria (UNEP, 2023).

The results of this study highlight the dual nature of green investment, combining significant promise with significant risks. The rise in global renewable energy investment to US$1.74 trillion in 2023 (IEA, 2024) confirms the findings of previous studies such as Smith and Jones (2022), which noted a sustained expansion of the green finance market in the wake of global climate commitments. However, the observed yield on green bonds at 4.2% per annum (Bloomberg, 2024) is lower than expectations described in earlier works (e.g. Lee et al., 2020), which predicted yields of 5–6% for similar instruments. This divergence may be related to increased market volatility and tougher competition in the sustainable investment sector.

Among the risks, the problem of “greenwashing” deserves special attention, when up to 15% of projects do not meet the declared environmental standards (UNEP, 2023). This result is consistent with the findings of Chen and Wang (2021), who pointed to the lack of transparency in green project certification as a key barrier for investors. In contrast to their work, which focused on corporate responsibility, the present study highlights the role of regulatory gaps, as illustrated by examples of instability in the biofuels sector. A comparative analysis of successful projects, such as offshore wind farms in Northern Europe, and unsuccessful cases, such as bankruptcies in the biofuel industry, shows that the success of green investments depends largely on technological maturity and government support.

The data obtained indicate the need for an integrated approach to the development of green investments. First, strengthening international certification standards, such as the EU Taxonomy for Sustainable Activities, can reduce greenwashing risks and increase investor confidence. Second, government subsidies and tax incentives, which cover more than 80 countries, should be complemented by measures to support innovation in less mature sectors, such as hydrogen energy. Finally, investors are encouraged to diversify portfolios, including both high-return projects (such as solar energy) and riskier but more promising areas (such as

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carbon capture). Green investments thus have significant potential to contribute to sustainable development, but their effectiveness depends on the removal of regulatory and technological barriers.

Green investment is a powerful tool for advancing sustainable development, demonstrating significant investment growth and eco-efficiency potential. However, their success is limited by risks, including market volatility, technological uncertainty and instances of greenwashing. This study confirms that realising the promise of green investment requires strong regulation, innovation and transparency. In the long term, their contribution to the economy and the environment justifies the efforts to overcome current challenges.

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