

Navigating the Green Frontier through a Comprehensive Review of Sustainable Finance Innovations and Practices

Dr. Madhuchandrika,

*Assistant Professor, Faculty of Management Studies,
CMS Business School, JAIN Deemed to be University,
Bangalore, Karnataka, India.*

Orcid ID: <https://orcid.org/0000-0002-9420-595X>,

Dr. Sireesha Nanduri

*Associate Professor, Faculty of Management Studies,
CMS Business School, JAIN Deemed to be University,
Bangalore, Karnataka, India.*

ORCID: <https://orcid.org/0000-0001-6015-8414>

Abstract

As part of the mitigation efforts to avert global warming and have emissions that are zero, this paper reviews the relationship between green funding and fair development. The study used literary review in research to read scientific papers and articles so as to come up with significant themes, results, and possible futures in green finance. It highlights green and low-carbon investment as essential to mitigate climate change while developing the economy. It focuses on how critical having the right robust legal frameworks is that support a carbon-neutral integration of projects into flows of green funding. The paper also analyzes the prospects of impact investing, where shareholders accept non-monetary gains in green finance as a trade-off for lower financial returns. Institutional ownership is found to be key in helping companies perform better on social and environmental grounds. The study illustrates the threat of environmental risks to financial decisions and elaborates on the relationship between risk management and climate change. Enhanced community support and awareness regarding climate actions may be witnessed as a consequence of effective modes of communication. Within environmentally friendly financing programs, incentives should promote fair growth and a greener future, transparency, and social equity.

Keywords: Green finance, Sustainable development, Climate change, Carbon neutrality, Impact investing, ESG, Greenclimate fund, Regulatory frameworks

1. Introduction

In the rapidly changing global environment, sustainable growth and climate change must be prioritised. Green finance as well as eco-friendly investments and then its activities can help achieve carbon neutrality and green economic growth. Green financing is essential for sustainable growth and environmental protection. This paper focuses on the Green Climate Fund and highlights the relevance of scaling up climate financing initiatives by diversifying funding sources and reducing risks associated with conventional finance. The papers also discuss the effects of green funding on decarbonization projects and highlight the relevance of further research. They emphasize social fairness, standardization, and transparency in green finance. Green finance and sustainable development covers objectives of sustainable growth, the significance of financial institutions, and ecological legislation's impact on funding development and research. The studies show the long-term advantages of environmentally friendly financing for sustainable growth, which requires clear definitions, relevant research, and tax legislation to accelerate its adoption and mitigate the effects of climate change. Impact equity as a sustainable finance accelerator is also thoroughly examined. The articles emphasize the importance of investing in impact and environmentally friendly financing to environmental commitments and the disregard of irresponsible investments. Factors related to the environment, society, and governance, or E affect green finance investment decisions. Studies show that robust ESG disclosure and practices improve risk-adjusted returns. Sustainable investing and green financing are becoming more important, thus ESG considerations must be included while developing investment portfolios. Also studied is the link between risk management and climate change. Investment decisions depend on political uncertainty, particularly in stranded asset sectors. Questions about the environment must be closely monitored and discussed with portfolio enterprises to balance financial benefits with long-term outcomes. The necessity for comprehensive and comparative information on sustainable finance operations as well as challenges is discussed, highlighting green money's crucial role in sustainable economic development.

2 Research methodology

A variety of resources, including academic venues and internet databases, were used to gather pertinent material on the topic. The evaluation found that there were commonalities in the opinions, gaps in the evidence, strategy suggestions, and implications for further study. "Green Finance and Low Carbon Initiatives" and "Green Finance and Sustainable Development" were among the subjects covered in these sections. The narrative summary summarised the overall

conclusions of the chosen literature, emphasising the role that green finance plays in tackling the effects of climate change and attaining environmentally friendly development objectives.

This narrative study illuminates environmentally friendly development, green banking, and its implications on the environment, company, and money. They give helpful data for buyers, thereby strategymakers, and researchers promoting green finance and sustainable investing. We studied a sample of citations to assess this significant topic's study tendencies. We categorised and sub grouped study of keywords by words. This interpretation emphasises keywords' relevance and its effects on the field's research by revealing the distribution of them. By emphasising environmentally conscious development and environmental finance, politicians, shareholders, and stakeholders may make responsible choices to support better environmental outcomes. A complete keyword analysis of articles revealed the main categories in Fig. 1.

The most often used topics in the articles, together with their related frequencies, are highlighted in this graphic depiction. In order to enable a more thorough examination of the topics covered in the works of scholarship, Fig. 2 further provides a word- cloud diagram that graphically represents the first grouping.

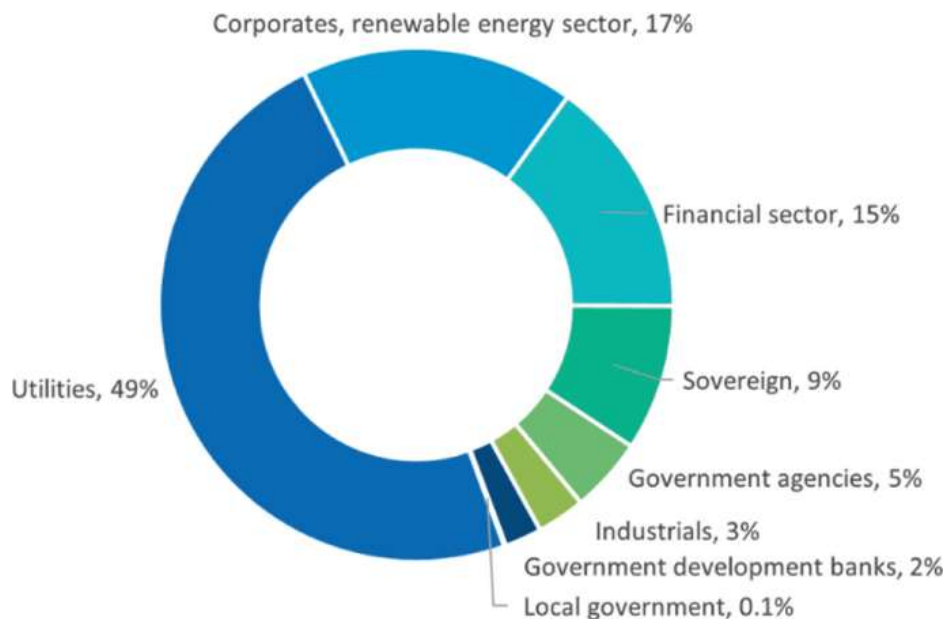


Figure 1: Examination of the Original Keyword Groups



Figure 2: Evaluation of Word Clouds for Initial Phrase Groupings

The environment's urgently demands low-carbon activities and green funding, as the books "Climate Change," "Carbon dioxide emission levels," and "Global Warming" highlight. The "Green Climatic Funds" and "Green Bond." promote green funding of projects. Emphasis on low-carbon and solar power shows that there are increasing issues with making investments in green energy. As proven by CSR and ESG, reactive investment shows how ecological and social factors are becoming more important while investment. The terms "Impact Investing" and "Sustainable Investing" promote socially responsible investments, whereas "Sustainable Development" and "Sustainable Finance" contribute to economic growth and development objectives. Geopolitical threats, primarily associated with "China" and the "Russia-Ukraine Conflict," have an effect on the world's environment. Finance and sustainable development initiatives, which need to be taken into account while preparing for sustainability. The subgroups are described in full in Figure 3.



Figure 3: Word Cloud Investigation of Keyword Groupings and Subgroups

The concentration of terms in certain groupings suggests that green lending focusses a high priority on economic and social dimensions, financial institutions, responsible investment, climate change, and environmental effect. Examining these patterns and interpretations may help stakeholders make educated choices and promote sustainability.

3 Research outlooks and achievements

3.1 Low-carbon and green financing

The combined results from this research help us understand low-carbon activity or green funding. Investment in green and environmentally friendly industries is essential for carbon offsets and warming prevention.

3.1.1 Fostering green finance and low-carbon development

According to Cevik, S., and J.T. Jalles (2022) carbon neutrality is essential to combating climate change. In order to advance carbon neutrality, new energy is required. Creating ecologically acceptable energy sources requires funding green and low-carbon projects. The study looks at China's economic trends and important aspects of green finance. Additionally, by growing sustainable financial services, they want to foster an atmosphere that supports the growth China.offers countermeasures for China's growth while also analysing US low-carbon development ideas and experiences.

3.1.2 The role of the Green Climate Fund

Aragonite, S., and A. Zabai. (2021) discusses the condition of climate finance now and possible future approaches, with a particular emphasis on the Green Climate Fund (GCF). The researchers believe that GCF financing has garnered the most governmental and intellectual attention to detail, but they believe further research is needed on appropriations allocation mechanisms. The authors advise that the GCF route combine public and private capital to de-risk traditional funding in order to increase its efficacy instead of just offering public cash for non-bankable enterprises. According to the creators, the plan would enable the GCF to increase climate financing and increase investor attractiveness.

3.1.3 Assessing the impact of green financing on decarbonization efforts

However, researchers have mostly examined the factors and dynamics behind green finance from an ecological perspective. Suresh, K., Reddy, P. P., & Preethi, P. (2019). aims to evaluate the impact of green money on economies' attempts to lower their carbon footprints, with a focus on the US, the Russian Federation, and the People's Republic of China.The paper looks at green bonds, which are the most widely used green finance instrument for decarbonisation in these nations. The study comes to the conclusion that these nations' attempts to reduce their carbon

emissions have not been significantly impacted by green money. The results of the research do not demonstrate that issuing green bonds lowers the carbon intensity of corporations. Finding strategy is essential, as is comprehending how institutions and governmental organisations adapt to this approach.

3.1.4 The impact of sustainable spending on investmentbehaviour

In their "achieving for yield" model, Bakkensen, L.A., and L. Barrage. (2022) investigate the relationship between sustainable expenditure and "reaching for yield." Sustainable finance, which promotes investments that help the environment while still producing financial returns, is in line with the concept of responsible expenditure, even if the document makes no explicit reference to green finance or environmentally friendly investing. It has additional drawbacks and fails to consider the potential impact of investment in green initiatives on risk-taking.

3.1.5 Investor preferences and sustainable investments

According to Engle, R.F., S. Giglio, B. Kelly, H. Lee, and J. Stroebl.(2020), green finance is essential to reaching the Sustainable Development Goals (SDGs). They perform two field surveys using a pension scheme that lets participants vote on its green investing strategies to see whether consumers are for environmentally friendly assets even if they hurt their budgets. For an environmentally friendly and equitable future, openness, uniformity, and social justice are essential.

3.2 Green finances and sustainable development

This section on environmentally friendly finance and sustainable growth covers a wide range of subjects and research. In the finance industry, regulatory framework affects investments in research and development, banks, climate funding, and equitable development. It is also advised to do further study on climate finance, with an emphasis on abandoned assets, divesting, and extreme weather concerns.

3.2.1 Causal relationship between green finance and sustainable development

Chenet, H., J. Ryan-Collins, and F. Van Lerven.(2021) evaluate the causal link between green finance (GF) and sustainable development (SD) causal association test. The empirical analysis's findings show that GF improves SD over a range of sub-periods. The research must, however, come to a clear result about how sustainable development affects green finance. By conducting a practical examination of the effects of many stakeholders on SD via their relationship between GF and SD in various subsample intervals, the research seeks to close this gap; nevertheless, the direction of this link might be more consistent.

3.2.2 The impact of environmental strategy on R&D investment

The effect of environmental legislation on the R&D expenditures of polluting firms is

examined by Choi, D., Z. Gao, and W. Jiang. (2020) the research demonstrates how tax strategy may encourage technology advancement towards cleaner. Additional study is needed to assess the impact of environmental taxes and study subsidies on investment in technology choices, as well as other legal and institutional factors on investment in research and development and the impact of strategy-induced expenditures on harmful manufacturing emissions in high-pollution firms. Carbon taxes have the potential to stimulate expenditure on ecological finance. This finding highlights how crucial it is to support investments in clean technology, especially in industries that use industrial practices that are detrimental to the natural world.

3.2.3 Enhancing climate finance

Chowdhury, R.H., C. Fu, Q. Huang, and N. Lin. (2021) emphasises the need of carrying out more climate finance research. Additionally covered is local finance, where rating agencies take climate change resilience metrics into account when assigning rating to bonds issued by municipalities. Finally, the paper recommends examining the barriers to climate change-related business and financial innovation, such as the characteristics and effects of green bonds. It is essential to take into account how global warming may impact investments, financial security, and creativity.

3.2.4 The impact of government expenditure on greeneconomic performance

The relationship between government spending and green economic performance in nations taking part in China's Belt and Road Initiative (BRI) is examined by Clancey-Shang, Danjue and Fu, Chengbo, CSR Disclosure, Political Risk and Market Quality: Evidence from the Russia-Ukraine Conflict (July 31st, 2022). A productive green economy is the result of these investments. However, there are several areas in which the research has to be improved. For example, the findings cannot be applied to other areas or countries since the study only looks at BRI countries. Furthermore, the DEA and GMM approaches used in the research ought to adequately represent the complicated link.

3.3 The potential of impact investing for green finance

They investigate affect purchasing, including investor acceptance of lower earnings for non-financial benefits, institutional ownership's role in promoting social and environmental performance, scope indifference in environmentally friendly investing, and institutional shareholder influence on environmentally friendly investments.

3.3.1 Sacrificing returns for environmental and social impact in green finance

The research by Bhatnagar, M., S. Taneja, and E. Özen. (2022) examines whether investors, especially those in dual-objective venture capital (VC) funds, are ready to give up reduced

financial returns in exchange for the non-financial benefits of impact investment. It increases access to funding and opens up growth prospects. The greater WTP of a certain investor type for such effects might serve as a reference. The creation of green finance policies and strategies.

3.3.2 The role of ownership in firms' environmental and social performance

In their Di Giuli, A., and L. Kostovetsky. (2014) investigate the connection between institutional ownership and the ecological and social (E&S) effectiveness of FRMs, with consequences for sustainable investing practices and green finance. The research also highlights how cultural variables impact economic decision-making and how effective green finance efforts may be. Nevertheless, the study's shortcomings include its use of private E&S ratings from sources of information and its disregard for governance processes. The report offers insightful information on how institutional investors support E&S practices. It emphasises how further investigation is required to determine how green finance might use institutional investors to support sustainable company operations.

3.3.3 The impact of institutional shareholders on CSR and sustainability

Edmans, A., and M. Kacperczyk. (2022) look at how portfolio firms' sustainable and corporate social responsibility (CSR) are affected by shareholder institutions. Institutional shareholders have the ability to create genuine social effect via CSR-related initiatives and have a favourable influence on CSR agreements, especially in financial material areas. However, the report provides useful recommendations for asset managers plans. Conclusively, institutional investors will have a greater influence on promoting green finance and sustainable development.

3.3.4 Corporate green bonds' effect on environmental performance

The popularity and effects of business green bonds, whose revenues fund environmentally beneficial initiatives, are examined in Feng, H., Z. Liu, J. Wu, W. Iqbal, W. Ahmad, and M. Marie. (2022) research. Researchers discovered that in sectors where the environment is vital to business operations, green bonds are becoming more and more common. The findings show that business green bonds can improve sustainability, making them more than merely false advertising.

3.4 Corporate social responsibility and governance

The evaluated publications in this area examine administration, impact on the environment, and social responsibility in business (CSR). According to the research, corporate governance, legal foundations, and the political climate all influence CSR activities and policies. The studies together imply that CSR is a crucial component of green finance as integrating environmental variables.

3.4.1 The impact of the political climate on corporate social duty

A research by Mythily, D., Renila, R. H., Keerthana, T., Hamaravathi, S., & Preethi, P. (2020). looks at how social responsibility for businesses (CSR) policies and an organization's political setting interact. Businesses with Democratic founders, CEOs, and directors, as well as those with their headquarters in Democratic states, often get better CSR ratings than their Republican parallels, the investigators discovered. Democratic-leaning firms also devote around 10% more of their net profits to corporate social responsibility than do Republican-leaning firms. Nevertheless, there is little proof that businesses recoup these costs via higher sales. Social responsibility may benefit stakeholders, according to the research. This research emphasises the significance of a company's political context in influencing its commitment to social responsibility practices. The report also highlights how important it is for businesses' CSR programs to take environmental factors into account, particularly for financial sustainability.

3.4.2 Environmental costs and corporate governance

Goel, R., D. Gautam, and M. F. M. Natalucci. (2022) conducted research on the connection among environmental externalities and corporate governance in 2020, with a particular emphasis on the release of greenhouse gases. Research by Houston, J.F., and H. Shan. (2022) indicates that private firms are less likely to pollute and face regulatory fines than public firms. The authors talk about how prosocial behaviour and practicality in lowering greenhouse gas emissions may have to be traded off. Propose that involving financial institutions in dealing with environmental hazards and advancing ethical business practices could aid in shifting the equilibrium state of social behaviour in the direction of more sustainable strategies. According to the article's conclusion, green finance—which includes ESG involvement and adoption—can effectively encourage sustainable business and investment practices.

3.4.3 Corporate social duty and legal roots

Ionescu, L. (2021) investigate the connection among company social responsibility (CSR) ratings and legislative roots. The study emphasises that cross-country variations in CSR ratings are significantly influenced by legal sources. The researchers contend that the increased focus on shareholder rights and social oversight in civil law judiciary systems is the reason why corporations from civil law nations, in particular, get better ratings for corporate social responsibility than those from common law countries. Green finance may be influence by the likelihood that businesses from civil law nations would give ecological concerns top priority and adopt environmentally friendly strategies. Furthermore, businesses from civil law nations could be better able to handle environmental dangers, respond to ecological crises, and advance environmental sustainability. Notwithstanding the study's shortcomings, which include its lack

of causation and possible endogeneity problems, it offers insightful information about the connection between CSR ratings and legal roots. It emphasises how crucial it is to take legal sources into account in assessing a company's dedication to ecological stewardship and sustainability.

3.4.4 Transparency of CSR and Its Effect on Green Finance

The competitiveness of international companies listed on U.S. capital markets in terms of improved corporate social responsibility (CSR) disclosure and the possibility that this openness may provide them a competitive edge over their U.S. contemporaries is investigated by G.A. Karolyi, and J.A. Scheinkman. (2020). Furthermore, compared to comparable U.S. equities, foreign companies show superior liquidity, stronger ownership by institutions, and lower individual volatility—possibly as a result of their greater degree of disclosure regarding CSR. The report emphasises that in order to improve their reputations, visibility, and competitiveness, international companies listed on U.S. investors, the writers point out that in order to stay profitable, they also need to improve the way they explain their governance-related initiatives. For international companies listed on U.S. marketplaces, more transparency in all three main categories of CSR efforts is advantageous.

3.4.5 FRM efficiency, social capital, and CSR

Wang, K.H., Y.X. Zhao, C.F. Jiang, and Z.Z. Li. (2022) investigate the connection between social capital, corporate social responsibility (CSR), and financial crisis performance between 2008–2009. Businesses with strong social capital—as indicated by CSR intensity—performed at least four percentage points better throughout the crisis than businesses with inadequate social capital. Developing firm-specific social capital via CSR helps shield investors and the economy during times of uncertainty. The results also point to situations in which CSR might be advantageous and show that social and financial capital can be significant factors in determining success. From the standpoint of green finance, the research emphasises how crucial CSR initiatives that support environmental sustainability are to a firm's capacity.

4 CSR performance's effect on market quality

In reaction to the Russia-Ukraine conflict, Khatibi, F.S., A. Dedekorkut-Howes, M. Howes, and E. Torabi. (2021) examine the research, which employs an event-study methodology, finds that improved CSR performance mitigates the decline in market quality linked to the conflict

breakout for international firms that are listed in the US. The research also finds that compared to their U.S. counterparts, overseas firms suffer from a more severe decline in market quality. The results corroborate the hypotheses and observations that stronger CSR performance improves market volatility and lessens. This research lends credence to the notion that businesses with robust ESG policies and transparency could appeal more to investors looking to fund environmentally conscious and sustainable businesses. ESG disclosure and practices may see an improvement in stock market performance and an increase in investor demand.

5. Analysis and interpretation

Green finance has been analyzed to bring to the forefront key insights and patterns, providing evidence of its growing importance in driving global economic growth while mitigating environmental risks. The research highlights numerous challenges and opportunities to address in the sector, including an increase in data and governance structures and greater understanding about the link between financial incentives and long-term sustainability outcomes.

Green Finance and Economic Growth: Green finance is highly significant in allowing for economic growth while preserving the environment. In pursuit of climate goals, there is a need for sustainable investment promotion; however, it requires further research on clearer links between financial incentives and long-run environmental impacts. There is an urgent need for more detailed and comparable data to help make investment choices and reduce the carbon emission and climate change-related risk.

Geopolitical Risks and Green Finance: Politically, geopolitical risks indeed have a huge impact on green finance in relation to various regions like China. The analysis of geopolitical events in relation to investments in green technologies indicates that policies regarding the environment and geopolitical stability are fundamental factors in influencing the flow of sustainable financial flows. Research is, however limited, by its scope of short-term ends and regional considerations that could limit wider application.

Oil Prices, Trade, and Green Finance: The Impact of Oil Prices on Labor Investments in China and the Relationship between Trade Openness and Natural Resource Use highlights these interplays between economic variables and green finance. This knowledge is of utmost significance for optimizing green finance strategies and improving resource utilization in an environment-friendly way.

Future Prospects and Recommendations: Future research in green finance should focus on further efforts in developing economies, better harnessing the role of technology, and ensuring

that financial benefits trickle down to underprivileged groups. Integrating blockchain and fintech into green finance systems may offer new avenues to improve transparency and efficiency in sustainable investments.

Considerable support to the planks of sustainability in economic growth and environmental risk mitigation. Green finance, especially through instruments like green bonds has dramatically grown from 2015 until 2023, and so underscores the growing demand for sustainable investment opportunities. Despite the volatility in the stock market, the steady increase in green bonds indicates high confidence in sustainable financial instruments, with \$500 billion issuance in 2022. The relationship between carbon emission and stock performance has a multifaceted nature, where increased carbon emissions can help escalate the risks in the financial sector, hence boosting the value of the companies. However, it is not always straightforward and implies that other influential factors, including market conditions and geopolitical risks, also come into play. The geopolitical risks, as evidenced by China's case, put more importance on stable international relations and green policies to encourage green finance investments. Indeed, trade openness and fluctuations in oil prices further complicate the map, revealing how environmental policies must be made in the wider context of economics and geopolitics. Data comparability and the regulative framework need to be improved, combined with the adoption of new technologies, including blockchain and fintech for transparency and efficiency. It is underpinned by the need for a deeper understanding of green finance's impacts on socioeconomics in underserved populations and the integration of climate adaptation and mitigation strategies to ensure sustainability over time. Thus, though green finance has significantly advanced, there are opportunities for far-reaching growth in integrating green finance with broader economic policies and dealing with the social dimensions of sustainability. The numerical data and figures presented provide a compelling analysis of the trends in green finance and its relationship with economic growth, carbon emissions, and sustainable development. The growth of green bonds, the impact of carbon emissions on stock performance, and the integration of sustainable practices into investment strategies highlight the critical role of green finance in mitigating climate risks and driving economic sustainability. Moving forward, research should focus on improving data comparability, fostering regulatory frameworks, and addressing the complexities of implementing green finance in diverse economic contexts. The use of digital technologies like blockchain and fintech can enhance transparency, while expanding research into the socio-

economic impacts of green finance will help create more inclusive and effective solutions for global sustainability challenges.

Conclusion

The examined papers emphasise the benefits of green financing for decarbonisation initiatives and urge further investigation to deepen our knowledge of its efficacy. Risk management and the environment, investor preferences and environmentally friendly investments, and social and governing. The growth of green finance requires many suggestions. Promoting green financial regulation via regulations, marketing, and information exchange is crucial. Assessing carbon-neutral green finance initiatives and the Green Climate Fund's work may improve climate finance solutions. Examining how green finance affects decarbonisation initiatives across nations and how sustainable expenditure influences investment choices is also crucial. Incorporating ESG factors into investment choices, resolving implementation issues, and enhancing data gathering in green finance initiatives are other crucial factors. Supporting environmentally friendly finance, healthy economic growth, and threat reduction requires collaboration, stakeholder participation, and legislative measures. The investors, legislators, and scholars may all benefit from the article's insightful recommendations. The potential of green financing to support equitable economic growth may be realised with the support of market-driven ecological legislation, financial incentives aligned with environmentally friendly results, and proactive tracking of environmental problems.

References

1. Al Mamun, M., S. Boubaker, and D.K. Nguyen. 2022. Green finance and decarbonization: evidence from around the world. *Finance Research Letters* 46:102807.
2. Amighini, A., P. Giudici, and J. Ruet. 2022. Green finance: An empirical analysis of the Green Climate Fund portfolio structure. *Journal of Cleaner Production* 350: 131383.
3. Bansal, R., D. Wu, and A. Yaron. 2022. Socially responsible investing in good and bad times. *The Review of Financial Studies* 35 (4): 2067–2099.
4. Barber, B.M., A. Morse, and A. Yasuda. 2021. Impact investing. *Journal of Financial Economics* 139 (1): 162–185.

5. Dyck, A., K.V. Lins, L. Roth, and H.F. Wagner. 2019. Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics* 131 (3): 693–714.
6. Sujithra, M., Velvadivu, P., Rathika, J., Priyadharshini, R., & Preethi, P. (2022, October). A Study On Psychological Stress Of Working Women In Educational Institution Using Machine Learning. In 2022 13th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 1-7). IEEE.
7. Brown, J.R., G. Martinsson, and C. Thomann. 2022. Can environmental strategy encourage technical change? Emissions taxes and R&D investment in polluting firms. *The Review of Financial Studies* 35 (10): 4518–4560.
8. Caldara, D., and M. Iacoviello. 2022. Measuring geopolitical risk. *American Economic Review* 112 (4): 1194–1225.
9. Campbell, J.Y., and R. Sigalov. 2022. Portfolio choice with sustainable spending: a model of reaching for yield. *Journal of Financial Economics* 143 (1): 188–206.
10. Cevik, S., and J.T. Jalles. 2022. This changes everything: Climate shocks and sovereign bonds*. *Energy Economics* 107: 105856.
11. Aramonte, S., and A. Zabai. 2021. Sustainable finance: trends, valuations, and exposures. Azar, J., M. Duro, I. Kadach, and G. Ormazabal. 2021. The big three and corporate carbon emissions around the world. *Journal of Financial Economics* 142 (2): 674–696.
12. Suresh, K., Reddy, P. P., & Preethi, P. (2019). A novel key exchange algorithm for security in internet of things. *Indones. J. Electr. Eng. Comput. Sci*, 16(3), 1515-1520.
13. Bakkensen, L.A., and L. Barrage. 2022. Going underwater? Flood risk belief heterogeneity and coastal home price dynamics. *The Review of Financial Studies* 35 (8): 3666–3709.
14. Engle, R.F., S. Giglio, B. Kelly, H. Lee, and J. Stroebel. 2020. Hedging climate change news. *The Review of Financial Studies* 33 (3): 1184–1216.
15. Chenet, H., J. Ryan-Collins, and F. Van Lerven. 2021. Finance, climate-change and radical uncertainty: towards a precautionary approach to financial strategy. *Ecological Economics* 183: 106957. <https://doi.org/10.1016/j.ecolecon.2021.106957>.
16. Choi, D., Z. Gao, and W. Jiang. 2020. Attention to global warming. *The Review of Financial Studies* 33 (3): 1112–1145.

17. Chowdhury, R.H., C. Fu, Q. Huang, and N. Lin. 2021. CSR disclosure of foreign versus US firms: Evidence from ADRs. *Journal of International Financial Markets, Institutions and Money* 70: 101275.
18. Clancey-Shang, Danjue and Fu, Chengbo, CSR Disclosure, Political Risk and Market Quality: Evidence from the Russia-Ukraine Conflict (July 31st, 2022). Available at SSRN: <https://dx.doi.org/10.2139/ssrn.4181022>.
19. Bhatnagar, M., S. Taneja, and E. Özen. 2022. A wave of green start-ups in India—The study of green finance as a support system for sustainable entrepreneurship. *Green Finance* 4 (2): 253–273.
20. Di Giuli, A., and L. Kostovetsky. 2014. Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics* 111 (1): 158–180.
21. Edmans, A., and M. Kacperczyk. 2022. Sustainable finance. *Review of Finance* 26(6): 1309–1313.
22. Feng, H., Z. Liu, J. Wu, W. Iqbal, W. Ahmad, and M. Marie. 2022. Nexus between government spending's and green economic performance: Role of green finance and structure effect. *Environmental Technology & Innovation* 27:102461.
23. Mythily, D., Renila, R. H., Keerthana, T., Hamaravathi, S., & Preethi, P. (2020). Iot based fisherman border alert and weather alert security system. *International Journal of Engineering Research & Technology (IJERT)*.
24. Flammer, C. 2021. Corporate green bonds. *Journal of Financial Economics* 142(2): 499–516. Goel, R., D. Gautam, and M. F. M. Natalucci. 2022. Sustainable finance in emerging markets: evolution, challenges, and strategy priorities (No. 2022–2182).
25. Houston, J.F., and H. Shan. 2022. Corporate ESG profiles and banking relationships. *The Review of Financial Studies* 35 (7): 3373–3417.
26. Ionescu, L. 2021. Leveraging green finance for low-carbon energy, sustainable economic development, and climate change mitigation during the COVID-19 pandemic. *Review of Contemporary Philosophy* 20: 175–186.
27. IMF Working Paper No. 2022/182. Retrieved from: <https://www.imf.org/-/media/Files/Publications/WP/2022/English/wpica2022182-print-pdf.ashx>. Hong, H., G.A. Karolyi, and J.A. Scheinkman. 2020. Climate finance. *The Review of Financial Studies* 33 (3): 1011–1023.

28. Wang, K.H., Y.X. Zhao, C.F. Jiang, and Z.Z. Li. 2022. Does green finance inspire sustainable development? Evidence from a global perspective. *Economic Analysis and Strategy*. 75: 412–426.
29. Wang, K.H., Y.X. Zhao, C.F. Jiang, and Z.Z. Li. 2022. Does green finance inspire sustainable development? Evidence from a global perspective. *Economic Analysis and Strategy*. 75: 412–426.
30. Xu, Q., and T. Kim. 2022. Financial constraints and corporate environmental policies. *The Review of Financial Studies* 35 (2): 576–635.
31. Jagannathan, R., A. Ravikumar, and M. Sammon. 2017. Environmental, social, and governance criteria: Why investors are paying attention (No. w24063). NBER Working Paper Series No. 24063. Retrieved from: <http://www.nber.org/papers/w24063>
32. Khatibi, F.S., A. Dedekorkut-Howes, M. Howes, and E. Torabi. 2021. Can public awareness, knowledge and engagement improve climate change adaptation policies? *Discover Sustainability* 2: 1–24.
33. Kong, F. 2022. A better understanding of the role of new energy and green finance to help achieve carbon neutrality goals, with particular reference to China. *Science Progress*, 105(1). <https://doi.org/10.1177/00368504221086361>
34. Li, Z., T.H. Kuo, W. Siao-Yun, and L.T. Vinh. 2022. Role of green finance, volatility, and risk in promoting the investments in Renewable Energy Resources post-covid-19. *Resources Strategy* 76: 102563.
35. Liu, T.Y., Lee, C.C., 2020. Convergence of the world's energy use. *Resour. Energy Econ.* 62, 101199. <https://doi.org/10.1016/j.reseneeco.2020.101199>.