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Review

Sustainable Finance and ESG Importance: A Systematic Literature Review and Research Agenda

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Abstract: Over the last decade, sustainable finance has appeared to be capturing a high level of interest as a crucial pillar of sustainable development. The process of taking environmental, social, and governance (ESG) considerations into account when making investment decisions in the financial sector is expected to play a key role in this framework, and although it has attracted the attention of many scholars and academics, a lack of understanding of the nature of the phenomenon remains. Therefore, on the basis of a systematic literature review of 80 studies, we examine, in detail, the subject areas and emphasize the main points in the existing literature. The findings reveal that there are four main thematic areas attracting research interest, as follows: (1) A shift in value creation; (2) green bonds; (3) ESG ratings and performance; and (4) sustainable finance, banking, and financial risks. Finally, this study outlines future research avenues in the field.

Keywords: environmental, social, and governance (ESG); sustainable finance; ESG importance; financial sector; sustainability

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1. Introduction

The financial sector provides a fairly wide variety of investment products, but the degree to which ESG factors are integrated differs greatly [1]. It appears that defining sustainable finance is not an easy task, as no consensus has yet been reached. This can be attributed to the numerous similar terms that are related to sustainable finance and the aforementioned lack of clarity and boundaries [2]. To date, international organizations and financial institutions have exhibited a tendency to create definitions based on their underlying motivations, which has resulted in the creation of heterogeneous terminologies [3]. However, most definitions of sustainable finance include "broad general statements, market-led standards and official criteria for policy, regulatory, fiscal or statistical purposes" [4] (p. 5).

According to the OECD [5], attempts to define sustainable finance should not be too ambitious in terms of scope. In addition, the ways of contributing to sustainable development, from a financial perspective, are considered so diverse [6] that the practice of investing in the context of sustainability has been characterized as a daunting task [7]. Nonetheless, although finance has long been regarded as the main culprit in many injustices and as an obstacle to a better world, it remains the key sector in the transition to a greener and more sustainable economy [1].

The increased recognition of sustainable finance is closely related to the international awareness of the whole sustainability agenda, with a specific focus on climate- and social-related aspects. From a historical point of view, the term sustainable finance evolved from the terms "responsible investment", which was used in the 1990s and 2000s, and "ESG investing", which replaced the former in the 2010s. Although sustainability has become a mainstream consideration in the financial sector and despite the plethora of principles and

reporting standards published, the market remains confused, lacking specific terminology, as well as limited in regulation. In addition, terms such as "sustainable", "green", "climate", "impact", and "social" are often used interchangeably, and although they are interrelated, distinctions should be drawn as they are not synonyms or interchangeable. Sustainable finance has a broader environmental, social, economic, and governance approach, whereas the other terms take narrower ones. To be more precise, sustainable finance is the widest notion that incorporates them. Climate and green finance are concerned only with environmental issues; social and impact finance refer to social issues and outcomes; and stakeholder finance and ESG investing deal with governance issues [4,8–10].

Drawing upon the above, there is increasing research interest in sustainable finance and ESG standards. This study provides a critical analysis of the existing research on sustainable development from a financial perspective. It adds to the existing literature by enhancing our knowledge of the field and identifying the current trends, challenges, and subthemes of the topic, which also serve as promising thematic areas for future research, through an examination of studies from 2011 to 2021.

2. Theoretical Background

Early research on sustainable finance focused on its role and how the implementation of decisions related to sustainability affected financial processes in firms' decision making [11–16] and climate-related financial policies [17]. Studies show that corporate green bonds contribute to both environmental and financial performances (i.e., higher environmental ratings and lower CO2 emissions), which also lead to an increase in ownership by long-term and green investors as issuers state their commitment to the environment [18,19]. Furthermore, it appears that investors can rely on market attention as a practical tool to predict the performances of green bonds [20]. Agliardi and Agliardi [21] argued that, despite their impressive growth, the supply of green debt remains limited. This makes it challenging for investors to distinguish between sustainable initiatives that create value and misleading information and false impressions regarding a company's environmental and social impacts (i.e., greenwashing) [22–24]. Banking policies and regulations should, therefore, take into account the required transition to a green and low-carbon economy while, at the same time, evaluating the environmental dimension of bank riskiness without disrupting the overall banking system [25,26].

The importance of sustainable finance essentially revolves around the following three interconnected concepts: Sustainability, risk, and efficiency. From a sustainability viewpoint, sustainable finance is aimed at closing the financing gap and assisting in the transition toward a more sustainable future. This requires the redirection of public and private capital toward resilient investments and economic activities that have a positive environmental impact (e.g., sustainable forestry/agriculture, renewable energy sources, energy efficiency, and sanitation). If asset owners and managers consider these investments as business opportunities, they will align their capital flows accordingly [27]. On the other hand, sustainability risk is defined as "an ESG event or condition that, if it occurs, could cause an actual or potential material negative impact on the value of the investment" [28] (p. 13). These risks could affect the economic performance of any player in the value chain. It is, therefore, essential that they be identified, assessed, and managed in coordination with sustainability goals. They particularly refer to extreme weather events or health issues, such as the outbreak of COVID-19. These threats can be physical risks (i.e., damage to property, land, or infrastructure), transition risks (i.e., economic costs due to the transition process), reputational risks (i.e., fear of becoming socially unacceptable when disregarding ESG considerations), and liability risks (i.e., for those responsible for environmental damage or violation of other ESG criteria). Efficiency refers to the transparency of information, which is crucial for participants to make well-informed decisions [27]. Furthermore, in their review, Cunha et al. [2] (p. 4) state that the framework of sustainable finance consists of the following four key players: Providers (i.e., investors and financial institutions), recipients (i.e., companies), supporters (e.g., governments, NGOs, consulting groups), and

beneficiaries (i.e., society and the environment). Their ultimate purpose is the promotion of positive environmental and social impacts through funding and investment activities. However, each player implements specific strategies and measures different results to achieve their goals. Companies, for example, vary in terms of motivations and initiatives, as well as in their trust that a shift from "business as usual" to a sustainability orientation will add to long-term growth prospects. Nonetheless, in a highly interconnected financial system, these actions require the commitment and coordination of all players [29].

3. Methodological Approach and Results

This systematic review consists of research on sustainable finance and ESG criteria. It draws on scholarly work from across the fields of business, management, economics, and finance. After determining the key variables and setting the boundaries of sustainable finance and ESG criteria, we built on reviews by Munoz and Cohen [30], Doherty et al. [31], Ansari and Kant [32], and Webster and Watson [33]. The research database Scopus was chosen for this study, and a list of predefined keywords was applied. The search was delimited to studies published between 2011 and 2021. The stepwise process is presented in Figure 1. Our initial research aimed at gathering studies from primary and secondary subject areas and, thus, included the following keywords: "sustainable" and "finance" OR "sustainability" and "finance" OR "finance" and "ESG". Following the review by Munoz and Cohen [30], the key terms were separated at first, because the researchers may have used them without combining them into a pair-word form. The primary search generated 7646 documents, which provided the opportunity to look at articles from a wide range of fields (e.g., management, social sciences, environmental science, energy, engineering, and decision sciences).

The results were then limited to the covered period, which provided 5218 studies. On the basis of the focus of the review, which is sustainable finance and ESG importance, we narrowed the search to primary areas and combined the keywords as follows: "sustainable*finance", "sustainability*finance", "ESG*finance", "ESG*importance", and "sustainable*business". The second evaluation resulted in 517 documents. In the third and fourth steps, we excluded articles that did not focus on sustainable finance or that emphasized only environmental issues (e.g., climate change).

In the final stage, we manually selected studies that explicitly investigated sustainable finance, and only 77 were deemed relevant. Table 1 presents the number of sustainable finance studies published by journals during the period 2011–2021. The growing recognition of the subject is depicted in Figure 2. More specifically, between 2011 and 2017, the number of publications ranged from one to three per year, reaching 31 in 2021. Furthermore, it has to be mentioned that in the early period of the decade under investigation, the research was broader, and as we move into the late period, the articles investigate more specific factors of ESG. In addition, the research interest increases. In terms of the methodologies adopted in the reviewed studies (Table 2), the majority was divided equally between qualitative and quantitative (from approximately 35%), followed by smaller percentages of purely theoretical (16.9%) and mixed methods (13%). The subject areas of the journals (Table 3) included in the research mainly cover (as expected because of the subject matter and the set criteria) the fields of business, management, and accounting (41.6%) and economics, econometrics, and finance (35.1%). Table 4 details the top 10 cited topics based on the keywords.

An analysis of the geographic locations of the reviewed studies (Table 5) revealed that a greater proportion (nearly 60%) drew evidence from European countries. It is worth mentioning that the researchers were classified according to the source of empirical evidence. For theory-only or conceptual studies, the institutional location of the first author was used. This can be attributed to Europe's strong political interest in sustainable finance and the overall financial policy in support of the European Green Deal, as well as its international commitments on climate change and sustainability objectives. Europe was followed by Asia–Pacific (20.8%) and North America (13%). In Europe, the proportion of

qualitative and quantitative studies was similar (34%). However, in the Asia–Pacific region, most of the studies were quantitative (44%), whereas in North America, the majority (50%) were theoretical. In the rest of the world, most of the studies were qualitative (60%).

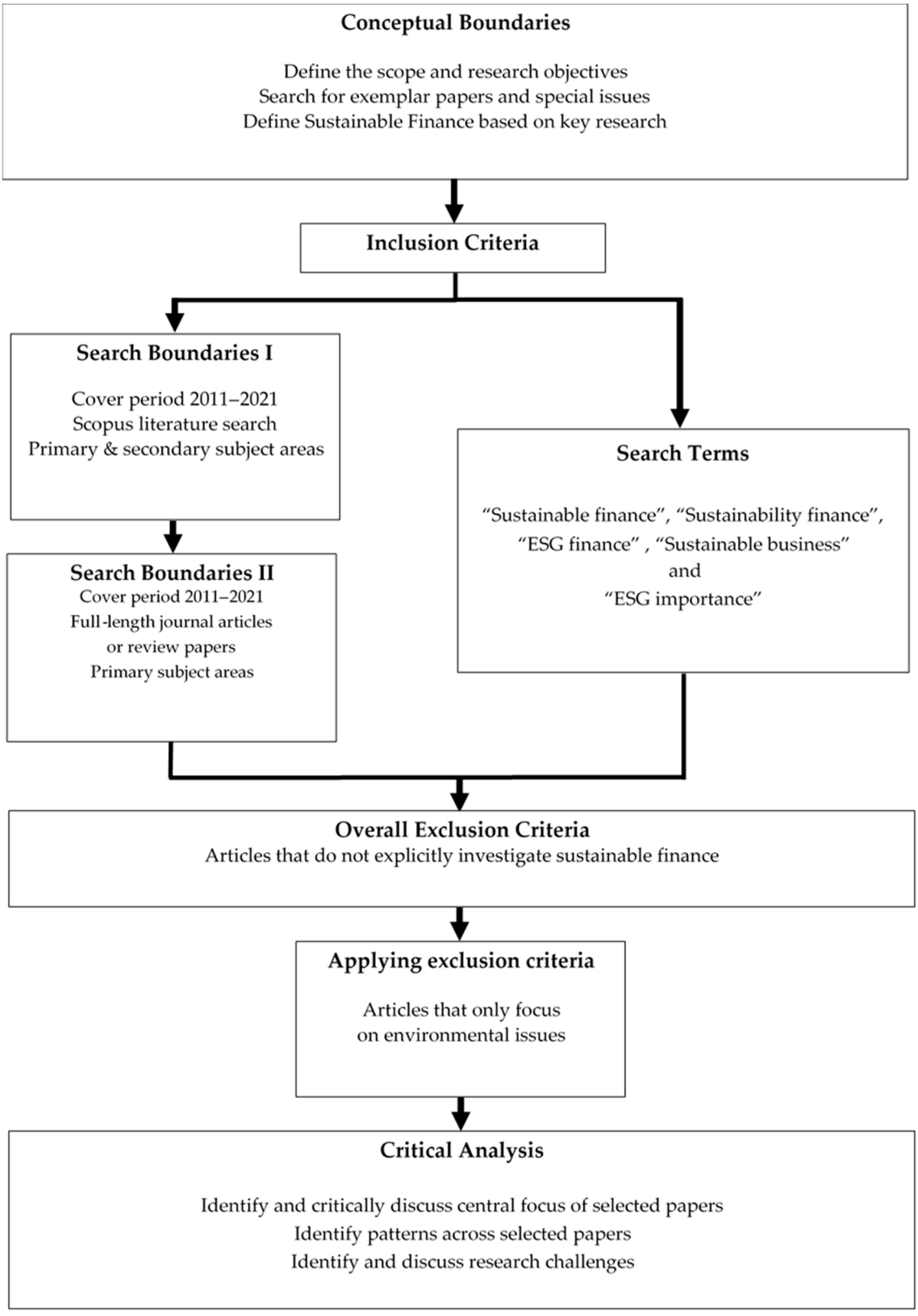

Figure 1. Study selection process.

Table 1. Sustainable finance studies published by journal during the period 2011–2021.

Journal	Number of Studies (N)
Academy of Accounting and Financial Studies Journal	1
Accounting, Economics and Law: A Convivium	2
ACRN Journal of Finance and Risk Perspectives	1
Business and Human Rights Journal	1
Business Strategy and Development	1
Business Strategy and the Environment	5
Climate Policy	1
Corporate Social Responsibility and Environmental Management	1
Credit and Capital Markets	1
Ecological Economics	2
Economics, Management, and Financial Markets	1
Ekonomiaz	1
Entrepreneurship Research Journal	1
Environment and Development Economics	1
Environment, Development and Sustainability	2
European Business Organization Law Review	1
Finance Research Letters	2
Gender in Management	1
Global Economic Review	1
Global Finance Journal	1
International Journal of Business Communication	1
International Journal of Energy Economics and Policy	1
International Journal of Financial Research	1
International Journal of Law and Management	1
Journal of Asian Finance, Economics and Business	1
Journal of Business Economics	1
Journal of Business Economics and Management	1
Journal of Cleaner Production	6
Journal of Energy Markets	1
Journal of Financial Economics	1
Journal of Financial Stability	2
Journal of Risk Finance	1
Journal of Sustainable Finance and Investment	27
Management and Accounting Review	1
Public and Municipal Finance	1
Rivista di Studi sulla Sostenibilita	1
South Asian Journal of Business and Management Cases	1
Total	**77**

Table 2. Research methodologies.

Number of Studies (N)	Qualitative (%)	Quantitative (%)	Theory/Conceptual (%)	Mixed Methods (%)
77	35.1	35.1	16.9	13.0

Table 3. Subject areas.

Subject Areas	%
Business, management, and accounting	41.6
Economics, econometrics, and finance	35.1
Social sciences	10.4
Environmental science	5.2
Energy	3.9
Engineering	2.6
Decision sciences	1.3

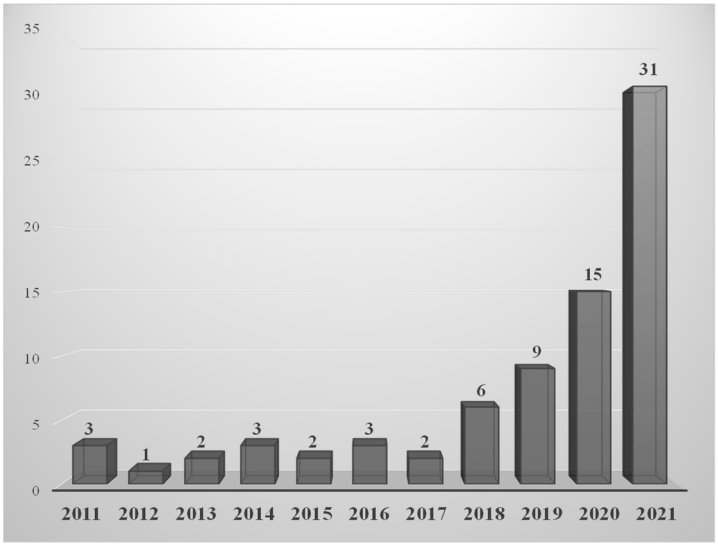

Figure 2. Reviewed publications by year.

Table 4. The 10 most popular topics.

Subject Area	%
Sustainable development	21
Climate change	16
Green bonds	13
Sustainability	12
Sustainable Development Goals	7
Investments	5
Financial performance	5
Finance	5
Sustainable investment	4
Social finance	4

Table 5. Geographic locations.

Number of Studies (N)	Europe (%)	North America (%)	Asia–Pacific (%)	Rest of the World (%)
77	59.7	13.0	20.8	6.5

The research on the Asia–Pacific region was equally divided between developed and developing countries. In the case of emerging economies, analyses of sustainable finance focused on the key challenges that arise mainly in the MSMEs (micro-, small, and medium-sized enterprises) sector regarding sustainable funds, impact investment, and microfinance [34], as well as the difficulties in the effective implementation of sustainable finance [35]. Confusion was observed in the specification of a "green project", the submission of action plans, and sustainability reports, which was mainly due to limited regulatory oversight [36]. In addition, special references were also made to sustainable banking in specific economies [25,37,38], venture capital [39], and firms' financial performances [40,41]. Similarly, academics were interested in the banking issues of developed economies and matters regarding sustainability in relation to commercial [42] and central banks [43], as well as the financing of renewable energy through green bonds [44]. The role of policies and regulations in scaling up sustainable finance in Japan [45] was also studied. By specializing their research in particular areas, some authors focused on sustainable urban development in China [46] and the creation of a protected area system in the Solomon Islands [47]. Moreover, the policy frameworks of sustainability in Asia and Africa were analyzed [48]. European studies were not dominated by a single subject, focusing on the

energy field and the assessment of financial risks due to the energy transition [49] and the carbon market [50]. The development of a sustainable framework and principles [16,51,52] was analyzed, as well as the role of sustainability in the growth of the fintech industry [53]. In addition, the concept of de-risking [54] was deemed important. Evidence regarding the state of nonfinancial reporting in the USA and reasons for the different approach compared with other governments around the world were presented [55]. Furthermore, the field of sustainable energy in Canada was described [56]. In Africa, scholars concentrated on the matters of SMEs [57], default risk [58], and access to finance [59]. It should also be noted that one study focused on the subnational level of the Basque region and issues related to financing green projects that depend on regional government decisions [60].

4. Discussion

4.1. A Shift in Value Creation

The role of capital markets was further underlined, as well as their initial inability to efficiently understand the importance of sustainable development, either because they did not reward good behavior or because investors did not need to worry about the very long-term costs of market failures, as they fell outside of their investment timeline [61]. The new reality and international regulations inevitably entailed a shift in focus, whereby the traditional paradigm of investor wealth maximization and corporate environmental performance should be replaced by a sustainable value-creation model [62–70]. Research on the positive contributions of social bonds [71] and impact investments on the advancement of sustainable development also worked in this direction [72]. Benijts [73] suggested that stakeholders could advance their campaigns' targeting by choosing financial institutions with a high level of socially responsible investment activeness, as they were more likely to respond to stakeholder requests. In relation to seeking funding from traditional capital providers, crowdfunding was proposed as one possible solution [74], as well as technological innovations in fundraising that would be observed in the initial coin offerings (ICOs) market [75]. According to the above, researchers proposed new long-term value-creation models that would support sustainability strategies [62,76,77]. The contribution and value of the EU taxonomy were also underlined in directing investments into low-carbon technologies by helping investors make more informed decisions, although in the so-called transition sectors, development mainly depends on the stringency of the technical performance thresholds that the EU applies to economic activities that are not yet considered "green" [78]. However, there is also a different point of view that argues that sustainable finance has been wrongly used as a public relations tool that primarily promotes financial activities that belong to the neoliberal market model instead of providing alternative solutions, shifting responsibility to the government, companies, and citizens to fight climate change [79]. In their study, Weston and Nnadi [80] found no substantial evidence that ethical ETFs (exchange-traded funds) outperform conventional ETFs. On the other hand, companies following the principles for responsible investing (PRI) outperform those that do not.

4.2. Green Bonds

The term (positive) green finance refers to investing in companies that provide the science and technology to help slow climate change and reduce human impacts on the natural environment, such as solar or carbon capture technologies, circular economies, renewable energy, energy efficiency, pollution prevention and control, green buildings, and clean transportation. Likewise, this includes financing companies dealing with the environmentally sustainable management of natural resources. Debt products of the green finance market (i.e., green bonds) were introduced in 2007 as a financing option for sustainable investments [9,81]. According to the ICMA [81], a green bond is "any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible green projects". They can be described as being

similar to corporate bonds. However, the "green" label derives from using the proceeds for environmentally friendly purposes that are in accordance with sustainability standards.

The green bond market has witnessed explosive growth and is increasingly attracting the attention of investors. They are more prevalent in the US, China, and Europe and in industries that affect the environment [35,82]. A positive global effect of green bonds was observed on the carbon market (in both high- and low-volatility regimes), whereas conventional bonds and energy commodities decreased in the carbon markets of high-volatility regimes, pointing to the significance of green bonds in determining the course of the carbon market, in addition to the greater persistence of low-volatility regimes [50]. Azhgaliyeva et al. [44] analyzed the critical challenges that green bond issuers and investors face in countries with membership in the Association of Southeast Asian Nations (ASEAN), concluding that despite the increase in both the issuance of green bonds and the number of countries issuing them, policies did not prove effective in promoting renewable energy projects, as most proceedings were used for green buildings. Researchers also focused on the nature of the "greenium" (a compound of green premium), which refers to the difference between the yield on a green instrument that is lower, compared to a conventional instrument with the same characteristics, in exchange for a sustainable impact and the formation of green bond prices. According to Agliardi and Agliardi [83], the "greenium" depends on multiple factors such as tax rates (negative relationship), asset volatility, the effectiveness of green technology, and a parameter that measures the sustainability advantage (positive relationship). Moreover, an improvement in credit quality due to the green label resulted in a lower cost of capital for green bond issuers. However, the need for policy action to prevent the risk of greenwashing was also highlighted [84].

4.3. ESG: Ratings and Performance

The research showed disagreement among rating agencies in terms of ESG scores. The heterogeneity in the ESG rating criteria can lead to rating agencies having opposite opinions, even regarding the same evaluated companies; at the same time, "rating addiction" could have a potentially negative effect on the field [85]. Furthermore, the majority of corporations disclose ESG factors when publishing sustainability reports, and the quality of data (if published) varies significantly. Nonetheless, larger companies tend to publish more in-depth information about their sustainable initiatives. Although their validity is questioned, studies show that it depends both on the industry type and the country of domicile [86]. Concerning the issue of ESG performance, Husse and Pippo [87] pointed out that ESG factors exhibit superior financial performances mostly as a result of significantly lower market risks, and ESG factors become insignificant once multiple factors are introduced as explanatory variables. They concluded that although ESG represents a pricing anomaly, it does not act as an independent risk factor.

4.4. Sustainable Finance, Banking, and Financial Risks

A starting point on the sustainable finance spectrum was to avoid investing in (or lending capital to) alleged "sin companies", which have very negative impacts (e.g., tobacco, waste dumping, and child labor). The next level shifts from an "avoidance" strategy (i.e., unsustainable companies), which holds significant risk, to an "opportunity" approach, which involves investing in sustainable projects (e.g., healthcare and green buildings,) [9]. Part of the literature is devoted to banking's role in promoting sustainable finance. The previous belief that banks have a neutral role in the concept of sustainability has been replaced by the view that they should be as environmentally responsible as other "polluting industries" because some investments are related to climate change. Galetta et al. [88] examined the environmental performances of banks and the selection of banks at which to keep their savings by depositors. Previous studies have proved that the main determinants of an increase in deposits by customers were a bank's pricing policy and the cost of switching. These seem to be affected by the negative relationship between customers' deposits and banks' environmental performances. Furthermore, it was observed that banks

with high sustainability performances pay lower interest rates on customer deposits. In terms of central bank influence (especially in the Asia–Pacific region), research shows that it could strengthen sustainable finance through improvements in the regulatory framework, the inclusion of climate change goals in their overall policies (e.g., banking risk), and an increase in green finance [43]. A very particular case study was examined by Bidabad and Sherafati [37], who attempted to connect a form of sustainable finance that embraces a scientific and technological approach with Islamic teachings, ethical economics, and Rastin banking. This different approach presupposes that banks should (or are obliged) not spend their resources recklessly (i.e., "squandering") and promote practices that, ultimately, lead to cost reductions in investment fields. The same applied regarding the compatibility of sustainable finance projects with Sharia rules [38].

Another important issue covered in the literature was climate-related risks (physical or transition) because they could strand assets in different economic sectors. Additionally, structural models for defaultable bonds should incorporate the uncertainty in corporate earnings due to climate-related risks [89,90]. More specifically, climate-related financial risks (CRFRs) that can produce unexpected crucial reductions in asset values often have no differential effects on "green projects" compared to conventional or "brown projects", although transition risks likely determine different effects. Furthermore, although a green label does not suggest an enhancement in credit rating, it could indirectly contribute to reducing systemic risk and, therefore, improve stability in the bond market [21]. Chenet et al. [91] proposed that the existing policy framework for managing CRFRs, which has focused on measures that attempt to reduce perceived information gaps, such as through transparency, disclosure, scenario analysis, and stress testing, should be replaced by one that incorporates the precautionary principle and modern macroprudential policy. Coeslier et al. [92] suggested the possibility of optimizing a stock index "to create a portfolio with very low tracking error while simultaneously significantly minimizing its direct carbon emissions intensity". Regarding the matter of financial risks due to carbon reduction policies and the energy transition, Cormack et al. [49] pointed out that aggressive climate mitigation policies have consequences for net profit margins and the required rate of capital expenditure. Roncoroni et al. [93] recommended that existing financial risk metrics need to be enhanced to include forward-looking climate risks.

5. Conclusions

In general terms, the fundamental function of finance is to use available funds productively. On the sustainability spectrum, it is positioned to promote strategic decisions regarding the tradeoffs of sustainable goals. Although not all decisions in a sustainable strategy are based on finance, funding is an absolute and multilevel necessity. In the banking sector, for example, banks can decide on their lending strategy and distinguish which sectors of the economy will be financed and which will be surpassed. The same applies to investment funds in determining their policy on which assets to invest, and, similarly, to investors, who can influence the companies they finance while directing corporate bonds. The financial sector can also assist in the transition to a low-carbon and circular economy by funding sustainable sectors, companies, and projects and helping accelerate the shift. It is the area of finance that allocates and mobilizes the required capital to achieve this transition.

There has been a substantial rise in scholarly research on sustainable finance over the past decade due to increased interest in sustainability in different societal and economic contexts. The growing recognition of the subject has resulted in an academic boom, from three studies published in the Scopus database in 2011 to thirty-one in 2021. In alignment with previous research, the literature on sustainable finance seems extremely fragmented. This makes it difficult to identify the characteristics of the field and the features that differentiate it from traditional investment. Amidst increased climatic disasters and rising concern about climate change, the study attempted to close the gap between environmentally friendly financing and strong financial performance and highlighted the integration of sustainability principles into financial decisions. Sustainability creates novel financing needs, as well as

new and, sometimes, underestimated financial risks for investors. Although all key players (i.e., providers, recipients, supporters, and beneficiaries) try to promote positive economic, social, and environmental impacts through investment activities, there is no substantial evidence that portfolios that screen for ESG factors perform better than traditional ones. It appears that the sustainability approach remains challenging for the core of the financial industry and that a unified classification framework for sustainable finance seems far from being achieved.

6. Future Research Avenues

Future research needs to consider various sources to understand the factors influencing sustainable investment strategies and the integration of sustainability principles into financial decisions. To achieve this, in-depth and alternative approaches should be pursued in the study of both green bond markets and sustainable banking practices. As organizational practices should align with sustainability, research should also focus on ways to add value to financial decision making and the use of innovation to improve efficiency and transparency, especially with the advantages and challenges of artificial intelligence (AI), which already represents a large question mark for both researchers and market participants. Therefore, the integration of ESG factors into firms' sustainable business models should also be further evaluated. In addition, future analyses should emphasize government policy issues and the various ways to implement reforms that would shape a solid sustainable financial system, especially in developing countries.

In future examinations of sustainable finance, a crucial aspect deserving further scrutiny also lies within the realm of cash flows. Understanding and testing how sustainable practices impact cash flows within financial institutions, corporations, and investment portfolios is paramount to the assessment of their long-term viability and resilience. More in-depth investigations into the dynamics of cash flows can illuminate the financial implications of sustainable investments, providing valuable insights for investors, policymakers, and stakeholders alike as they navigate the transition toward a more sustainable future.

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