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GREEN FINANCE MARKET MECHANISMS AND POLICIES IN ENVIRONMENTAL PROTECTION AND THE "TEN C'S" IN INVESTMENT CLIMATE

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Abstract

South Asia has been an economic engine of global growth over the years, but it is also the region hardest hit by human-caused climate change. Green finance increases the amount of money that goes to public, commercial, and non-profit organisations working on sustainable development projects. Improving environmental and social risk management, snatching up chances that provide a steady return and environmental benefit, and fostering a sense of personal accountability are all essential features. Barriers to green investments and economic policy are also examined, as are market innovations for extending green financing in south Asia. The results suggest that green money could significantly affect environmental protection, societal development, and climate change prevention. The investment climate in south Asia: a summary of consultation results highlighting country-specific issues and opportunities, including the importance of addressing climate change. The development of environmental protection measures has to take into consideration the establishment of a framework for an effective green financial system that coordinates the connection between ecological and money. By utilizing dynamic financial mechanisms, we are able to advance the utilization of renewable energy sources as a means of achieving environmental preservation.

Key words: *green finance, sustainable finance, green investment, climate change, Investment Climate*

INTRODUCTION

The goal of "green finance" is to strike a balance between protecting the environment and fostering economic growth. No one seems to agree on what constitutes "green financing.". Green building construction, efficient energy management, waste management, biodiversity preservation, and related renewable energy initiatives are examples of projects that can qualify for financial support if their primary goal is to contribute to sustainability. Multiple recent studies predict that by 2020, the environment will have suffered catastrophic harm due to climate change and its consequences. Low-income nations need access to considerable financial resources to combat the effects of climate change and meet their development goals. Eco-friendly financial planning is a newer discipline. It has been difficult for economists and international organisations to settle on a single definition. However, many experts in academia, industry and government have come up with definitions that function. Some organisations have devised the intriguing alternative "sustainable financial system" to describe green money. However, their equipment and methods haven't been altered. The Global Environment Facility was established as a fund during the 1992 Rio Earth Summit to combat issues associated with biodiversity loss, land degradation, and global warming. It is a worldwide struggle to reconcile the needs of sustainable development with those of economic

expansion. Most developing Asian economies have a severe problem due to resource- and carbon-intensive growth strategies. Significant outliers include Bangladesh, the Lao People's Democratic Republic, Nepal, Thailand, and Vietnam. However, over the past three decades, the carbon intensity of most developing Asian nations has declined considerably. Despite this, developing Asian nations continue to have a much higher carbon intensity than established economies. Many Asian nations are particularly susceptible to climate-related dangers. Countries like Myanmar, the Philippines, Bangladesh, Vietnam, and Thailand have felt the most devastating effects of climate change over the past two decades (Kreft et al., 2016). The 2017 Global Adaptation Index released by the University of Notre Dame indicated that several nations in South and Southeast Asia are very vulnerable to climate change but are not yet prepared economically, socially, or politically to strengthen their resilience. The financial system significantly impacts the environment by providing funding for environmentally friendly projects and cutting off money to those harmful to the planet. Given the size of the financial commitment required to make the "green transition" to low-carbon growth, this is essential. Increasing numbers of bankers are aware that climate and environmental issues affect the economy.

METHODOLOGY

The Scopus database was used to search for scholarly articles on green finance. Scopus and web of science are among the world's major peer-reviewed social science research databases. Access to and recognition of the repository for empirical and quantitative research. We searched for "Green Finance" in the article's title, abstract, keywords, and body without setting a time limit. To evaluate the studies, the review articles are manually picked. Through a research website, articles are gathered, and a keyword-based analysis is performed on each paper. The main terms are South Asia, green finance, green banks, sustainable finance, the role of sustainable development, green investment, climate change, and climate investment. The Google search engine was used to retrieve practitioner white papers and policy reports to identify the research gap that can be considered for industry practitioner papers and social science research. Review the article's relevant literature to identify research gaps and propose directions for future research.

CONCEPTUAL LITERATURE

To draw the literature review, this section of conceptual literature provides the priorities of variables for further consideration in the field of social science reach. In this section, green finance research in general included

Definitions of green finance Geen finance is a relatively new field of finance. Green finance is the acquisition and use of finances for environmental protection and investor or lender returns (Berensmann and Lindenberg, 2019; Ozili, 2021a). Green finance aims to boost money flows from financial institutions to economic agents engaging in environmentally-friendly projects and activities (Lee and Baral, 2017; Force, 2015). Green finance mixes environmental preservation and economic profits, per Wang and Zhi (2016). Green finance includes investments in ecological goods and services and actions that mitigate environmental and climate damage, according to Lindenberg (2014). In public policy, green finance entails financing measures that support environmental protection or harm reduction (Lindenberg, 2014). Bahl (2012) describes green finance as eco-friendly funding, green technologies, and pollution-reduction initiatives.

Why green finance is important Green financing has many advantages—sustainable urban

development benefits from long-term financial commitments (He et al., 2020). Environmental funding helps people enter the workforce (Wang and Wang, 2020). Green investments lower carbon emissions in the short and long run (Li et al., 2021). The Impact of Green Finance on Investors (Tang and Zhang, 2020; Barber et al., 2021). Green financing allows businesses and governments to diversify their investment strategies (Reboredo, 2018). The use of green funding can reduce support for fossil fuel projects that harm the environment and the climate (Sachs et al., 2019a, Ozili, 2022a).
Green banks Regarding creating environmentally friendly banking practices, China has been among the forerunners. To ensure that environmental risk is considered when determining whether or not to make a loan, the Bangladesh Bank, the country's central bank, established "Policy Guidelines for Green Banking" and "Guidelines on Environmental Risk Management" in 2011. The Bangladesh Bank has implemented a loan credit quota in addition to a green refinancing approach. To promote environmental risk assessment and green lending, Indonesia has published a road map for developing a green banking system (Volz 2015). Sokolova et al. (2019) claim that the Ukrainian government does not care about green economics. Regarding fostering a green economy in Ukraine, NGOs are far more effective than the government. Ukrainian Green Bank "Ukrgasbank" has increased green funding in the country, although it is not a government-led organisation.

Sustainable finance Green central banking fills the financing need. Central banks manage financial, macroeconomic, and environmental risks. By regulating money, credit, and the financial system, central banks may promote green financing models and assure fair pricing of environmental and carbon risk. Central banks and financial regulators can decrease environmental risk by supporting sustainable financing in accordance with economic governance (Dikau and Volz 2018). Green money is one part of sustainable finance for sustainable development, notwithstanding its benefits. Sustainable finance has three more options: social, blue, and digital (Ozili, 2021a). The HKGFA (2020) claims that a government-wide steering body was created to execute climate policy. Any authorized institution can evaluate the "greenness baseline." Hong Kong's securities market offers "green" investing alternatives, and a database platform provides data.

Green investment According to Jeffrey D. Saches et al., decreased renewable energy efficiency investment may slow green energy growth (2019). "Green financing"—banking, financial technology, investments, and initiatives that benefit the environment—must grow rapidly to accomplish sustainable development goals. Sustainable project public and concessional finance reduces risk. Green infrastructure projects need a more systematic approach to identify the best methodologies and technologies and mobilize private investment. Experts build green infrastructure pipelines. Chang discusses Singapore green funding issues and solutions (2019). Issues: Singaporean SMEs cannot issue green bonds for the following reasons: SMEs are unaware of green finance, the Singapore green bond market is limited, and transparency and reporting are important issues in the industry. Chang (2019) suggests these: "Green" means (ii) disclose bond issuers' environmental, social, and governance (ESG) performance; (iii) improve financial instrument quality for green investments; and (iv) create "green pockets" to stimulate demand for green investments. (v) build and exchange knowledge and competence; (vi) initiate green finance markets and investment; and (vii) define green value. Asia is particularly vulnerable to climate change. Thailand, Vietnam, the Philippines, and Myanmar are severely affected by climate change (Kreft et al., 2016). Notre Dame's Global Adaptation Index shows that many countries in South and Southeast Asia lack the economic,

social, and governance infrastructure needed to adapt to climate change (2017). To reduce climate change and greenhouse gas emissions, regions must invest heavily in green and climate-resilient infrastructure. The Asian Development Bank estimates a $26.2 trillion infrastructure gap in rising Asia between 2016 and 2030, or $1.7 trillion annually. (ADB 2017). Climate change adaptation and mitigation require $3,600,000,000,000,000 from ADB's 45 developing nations. Energy receives 56%, transportation 32%, communications 9%, and sanitation 3%. Figure 1. Southeast Asia's 2015–2025 infrastructure investment needs were USD 110 billion, according to the ASEAN Investment Report. ASEAN Secretariat/UNCTAD. Volz (2017) examined how central banks build sustainable financial systems. Volz (2017) suggests ways governments and central banks can "green" the financial system. They use discount policy, reserve requirements, capital requirements, open market operations, foreign currency intervention, macroprudential policies, risk guidance, supreme bank communication, and international coordination. Swap lines, interest rate ceilings, and other methods are discussed. Ozili examined how central banks reduce climate risk and boost the green economy (2021b). Optional: I creating a climate bank, (ii) mandating that financial institutions relocate vital assets to areas less at risk from climate change events, (iii) imposing a fixed-rate risk capital based on Tier 2 capital, (iv) restricting lending to industries that harm the environment and climate, and (v) imposing a climate change capital surcharge.

Tools, Policy Instruments, Intermediate Targets and Policy Goals, Challenges of green finance and Sustainable Development Role of Central Banks Economic policy should aim for high employment, stable prices, and rapid expansion, says Milton Friedman (1968: 1). Fewer people think these goals can be changed for one another or are compatible. If Friedman is serious about economic and social sustainability, he must priorities these issues. The best strategies to attain these aims, whether they are compatible, and who should lead are still points of contention. Until recently, the public had a general grasp of the importance of central banks and monetary policy. According to most economists, inflation should be kept low and stable because doing so is in the best interest of society as a whole. The so-called inflation targeting paradigm was economics' dominant school of thought in the 1990s. One of the three primary functions of central banks is to ensure financial stability (Goodhart, 2010). However, in recent years, there has been a shift toward inflation targeting and a corresponding increase in the delegation of financial supervisory functions to specialized financial regulatory agencies. Inflation targeting has been accused of ignoring financial stability during the Global Financial Crisis despite its ease of implementation and reliance on a few simple criteria. Since the crisis, financial stability has become a top priority for central banks. Whenever a central bank has had to choose between maintaining price stability (or macroeconomic stability) and maintaining systemic financial stability, that bank has "rediscovered financial stability with a passion," as Buiter puts it (2012). In any scenario, maintaining a secure financial system is more important than maintaining low prices or steady growth. Because of this, the effectiveness of central banks' attempts to control inflation is called into question. According to Frankel (2012), inflation targeting has vanished. During the height of the crisis, Blanchard (2011) advocated the "one aim, one tool" theory, which was later disproved. We figured inflation was the only goal. We just cared about the interest rate, which was a big deal. Nothing has gone wrong thus far. This disaster showed us that the structure was flawed and that aesthetic value is not always indicative of truth. Multiple goals and methods are at your disposal. It can be challenging to determine how to best use sensors by mapping them to desired outcomes. Now we see the problem. Policy decisions regarding the money supply in the future will be more nuanced than in the past. An effective method and at least as many distinct

goals are needed to accomplish a single goal. When there are more goals than tools, it will be impossible to achieve them; when there are more tools than goals, there will be multiple paths to success. A policy system will lack a unique, realizable solution if the number of objectives exceeds the number of instruments, just as a mathematical system will be "overdetermined" or "underdetermined" if the number of variables differs from the number of equations. When deciding whether or not central banks should adopt sustainability goals, it is important to consider how well these objectives can be incorporated into a consistent and productive policy framework. Despite the difficulties associated with requiring too much, as noted in Section 5, central banks with more objectives than instruments must explore ways to reclaim additional instruments. In the next section, we'll discuss whether or not the central bank should include environmental considerations as an integral part of its policymaking process. Microeconomic challenges are a problem for green finance, say Berensmann and Lindenberg (2016). High transaction costs for green certification and monitoring make it challenging for green investment vehicles to increase green investment, claim Schletz et al. (2020). According to Guild, the renewable energy industry's incentives are misaligned due to poor institutional architecture (2020). Schletz and collaborators (2020) investigated security tokens based on the blockchain for use in environmentally friendly funding. Problems include insufficient investment infrastructure, legislative ambiguity, and the riskiness of software.

Investment Climate Domestic and foreign investments depend on a country's macroeconomic policies, economic and political institutions, regulatory framework, infrastructure, and other services (Vijayalakshmi et al., 2019). The "investment climate" is the economic, financial, and geopolitical elements that influence whether international investors and lenders choose to conduct business in a country (Ongbwa, 2017). World Bank Group enterprise surveys give statistics on competitiveness and investment climate regarding entrepreneurship restrictions. Data, regulatory information, and enterprise questionnaires generate Doing Business metrics (World Bank, 2020). These surveys and indicators assess the business environment in other countries in various ways. The World Economic Forum's Global Competitiveness Index (WEF, 2019) combines manager polls and quantitative data to assess an economy's competitiveness in terms of institutions, infrastructure, macroeconomic stability, financial system, entrepreneurial dynamism, inventive capacity, and so on. OECD policies have a variety of effects on investment. The OECD measures the investment climate using external flows and FDI inflows, external and domestic positions, and export and inflow income. The index of FDI regulatory limitations is a significant indicator of a country's attractiveness for investment. Kalinova et al., 2010

CROSS-CUTTING FACTORS "TEN CS"— SOUTH ASIA

The use of environmentally responsible financing is on the rise throughout Asia. To meet the demand for environmentally responsible economic growth, green financing has expanded in Asia, as Tolliver et al. (2021) reported. Green bond issuance has skyrocketed throughout Asia, particularly in Japan, China, and South Korea. Since 2015, China has been at the forefront of the global green bond issuance race, followed closely by Japan and South Korea. Escalante et al. argue that the Chinese green bond market is underdeveloped due to a lack of diversification (2020). Green finance in Asia is a topic of study for HKGFA (2020). To back up the government's climate policy, a cross-agency steering group was formed, as reported by HKGFA (2020). Any authorized school can evaluate a school's "greenness baseline" individually. Green and sustainable investment options on the Hong Kong stock exchange are catalogued and made available to investors through a database platform. In addition to discussing

virtual green bond market events in mainland China, HKGFA (2020) also talks about financial coordination between Shanghai and Singapore. Volz (2018) points out that sustainable investing in Asia is complicated. Volz (2018) proposes eco-friendly monetary replacements for Asia. Educating the financial sector on the dangers of environmental and climate change; strengthening the industry's ability to analyse and manage environmental risks; establishing green lending instruments; fostering greater transparency through environmental, social, and governance (ESG) disclosure requirements; incentivizing the financing of environmentally friendly projects; contributing to the creation of innovative financial tools. Indian financial institutions say Jena and Dhruba (2020) need more training in environmentally responsible banking practices. First, they suggest a clear definition of "green finance" as part of a market-led, long-term collaborative effort to increase green capital flows in India. Green funding is encouraged, and high-carbon footprint ventures are penalized, but these aren't the only options. After in-depth interviews, we deduced the ten most important considerations (the "ten Cs") for foreign investors operating in SOUTH ASIA. An additional explanation is provided below. The following section will focus on issues and themes brought up during these discussions that were unique to the country.

Clarity and Coherence It's crucial for uniform renewable energy policies and laws. They should herald the adoption of renewable, low-carbon energy sources.
Consistency-The policies must be consistent throughout all fields and industries. When operating under federal guidelines, the national requirement should ensure a baseline for renewable energy (RE) growth, while individual states retain the option of establishing more ambitious targets.
Commitment and Credibility- Governments may prove their long-term support for the RE industry by adopting an open regulatory and tariff framework. The clearances required to construct wind or solar farms deter potential investors. The approval process can be simplified by instituting a single-window clearing system or a no-objection approval procedure.
Capacity- As nations work to expand their use of renewable energy sources, government agencies must guarantee that all necessary guidelines are followed.
Compliance Concerns among investors center on whether or not utilities are following their PPAs. Utilities need well-defined procedures for cost recovery and prudence checks to guarantee adherence to policies and contracts. Utilities must also adhere to regulations while purchasing renewable energy certificates.
Coordination- To ensure that clean energy regulations are implemented consistently and efficiently, the various clean energy entities (regulatory agencies, implementing agencies, utilities, distribution corporations, etc.) must collaborate.
Collateral- Financial institutions are hesitant to back sustainable energy projects since PPAs are often related to utilities' compliance, and the banks are worried about the PPA's bankability. Countries should consider particular strategies to fund it and avoid risk until renewable energy is as inexpensive as traditional energy.
Connectivity- Access to the grid is essential for renewable energy investments. Financial backers prefer projects with well-defined grid connection requirements.
Cartography- The return on investment (ROI) is influenced by the quality and availability of renewable energy (wind, solar, hydro, and biomass), which vary depending on location.
Country-specific factors -The consultations also categorized many country-specific issues under the ten Cs.

INDIA- ***Attractive project financing options and terms and conditions are required-***There was a dramatic worsening in India's economic situation. For smaller companies, it might be challenging to secure project funding. Companies with a more significant market valuation often use a funding strategy called balance-sheet financing (owing to their large capital base or assets held in non-RE-related sectors). Some top executives at companies think they can get better interest rates and credit arrangements. Due to the upfront nature of many RE costs, direct subsidies and grants are often pursued. To be effective, Clean Development Mechanisms must be widely accessible and straightforward to implement. ***A federal system of governance creates opportunities and challenges***--Multiple solar photovoltaic companies have complained about the excessive state taxes on solar panels. The power board payments on the state level also presented challenges. Federalism has aided the growth of regulatory independence, allowing certain states to deliver land and clearances to investors swiftly. The Indian states of Rajasthan and Gujarat were widely recognized as pioneers in the spread of solar power. Himachal Pradesh supported micro-hydroelectric dams.

Access to data and grids is vital All renewable energy must be evacuated; hence renewable energy sources must be linked to the grid. A precise and dependable policy on grid access is essential for companies to build and operate such facilities and negotiate transmission line rights-of-way with third parties. If wind and solar companies can access reliable data on wind speed and solar radiation, they could maximise investment returns. Funding from commercial banks is dependent on investors being able to make reliable projections of future revenue.

Technology costs are high, but so are performance The energy business places a premium on globally and domestically available affordable and efficient technologies. They stress reliable, durable efficiency. Since renewable technologies (primarily solar) have not been thoroughly tested in India, this component is crucial for analysing revenue streams and obtaining the confidence of commercial banks. Investors have complained that the current cap on generation-based incentives unfairly targets companies that use the most efficient technology by making them reach the cap more quickly due to higher production. Companies in the power generation sector want the option to shop worldwide, encouraging them to hire the most productive and efficient employees. Some domestic producers have voiced concern over unfair foreign competition, claiming that if given a chance, Indian producers might become the most cost-effective manufacturers of renewable energy technologies.

Transparency and good governance are essential but not always present payments on loans and other clearances. Based on their low bids, some companies with no prior experience with solar projects were chosen. Speculators want more information about the anticipated VAT, which could nullify the tax benefits of RE businesses. Improper behavior could be reduced with a streamlined approval process. Investors have praised projects like the JNNSM, which provides extensive data for finding and estimating income, for their openness. Speculation on land and its ease of access has worried some investors. Gujarat outperformed the rest of the country when it came to opening up land for renewable energy projects.

SRI LANKA There was some talk in Sri Lanka about implementing net metering and building solar installations that connect to the grid. Since 2007, when net metering was first implemented, solar panels that could be linked to the grid have been a reality. There will be no costs incurred from grid providers with this method. Captive consumers can reduce their monthly electricity rates by selling

excess solar power to the grid.

Financing is essential for deploying net metering *It doesn't help pay for net-metered construction. Because commercial bank loans are so costly, investors saw this as a significant weakness. They argued for grants to be awarded to projects using net metering.*

Clarity, consistency and speedy clearances are required for effective operationalization of net metering Discussions with stakeholders have uncovered utilities' reluctance to be open and sincere about their net metering policies. Credits will be carried forward for ten years, as stated by the Ceylon Electricity Board, one of Sri Lanka's two transmission firms. However, LECO claims they will expire much sooner. There is no system to pay back producers for credits they have already earned. The time required to get necessary licenses and permits is excessive.

Financing and policy predictability is essential for grid-connected solar parks' success Government initiatives to attract private sector participation through solar parks would be fruitless without financing plans and other incentives. Rather than establishing preferred tariffs, many businesses have advocated for the government to open up tax negotiations between producers and utilities.

PAKISTAN Private companies applauded Pakistan for its efforts to make the country a desirable investment destination for renewable energy producers. They want more transparency and stricter enforcement of current laws. Similar issues, such as access to affordable capital and reliable law enforcement, plague businesses in Pakistan as they do in India and Sri Lanka. Although Pakistan has one of the highest rates of return in South Asia (nearly 18%), the country is struggling to attract foreign investment due to its unstable political and security situation. There have been some requests from companies to international organisations for guarantees about political and safety hazards.

Existing laws need to be effectively implemented Pakistani businesses face a significant obstacle in the form of inadequate RE legislation and regulations. Negotiations between authorities and power providers determine feed-in tariffs for various RE sources.

Administrative costs need to be reduced In Pakistan, RE is regulated by multiple organisations. Entrepreneurs who want to pursue small hydro will require provincial and federal approval. Implementation stalls, and startup costs rise due to a lack of cooperation between these bodies. Little time was spent waiting for political support. The Energy Administration Authority was proposed by private sector groups (EAA).

Difficulties in obtaining finance **-**The availability of capital were also cited as being crucial, especially in high-investment fields like solar P.V. Obtaining capital is a struggle for many businesses. Smaller businesses were encouraged to apply for subsidized loans.

Cost-effective access to land and equipment is critically important- Investment is hampered by the lack of ease of access to the ground. There is no standardized approach throughout the provinces for making land available to the private sector at reasonable prices. The cost of purchasing private land is prohibitive for many. Capitalists are on the lookout for reasonably priced machinery and supplies. Pakistan does not produce wind equipment. Hence there are no tariffs to pay when

importing it. In general, duties on solar cells and modules can reach 50%, significantly raising the capital cost for solar P.V. companies. Importing biomass and transferring technology from India also need to be investigated.

BANGLADESH

Clear and supportive policies are needed- Businesses in Bangladesh have demanded more transparent guidelines and an enabling climate for RE implementation. Insufficient clarity exists—a lack of a net metering law that provides incentives for rooftop solar installations. As of recently, solar panels for electricity generation are mandatory in all newly constructed homes and businesses. The initiative's purpose is admirable; however, it lacks vital components like funding to cover the expense of installation.

RE investors must keep in mind the rural nature of the country's economy Because of the inability of the existing grid to keep up with demand, most projects in Bangladesh are operating independently of it. The agricultural and rural nature of the economy makes water pumping a prime candidate for renewable energy (RE), as this is an area where high costs are incurred by using diesel generators instead of cheaper, more reliable electricity.

Access to finance is still a problematic issue for small-scale projects Due to the off-grid, small-scale nature of RE deployment and the importance of micro-credit, non-profits play a crucial role in developing RE technology in Bangladesh. Investments in real estate often attract commercial interest rates between 11 and 14 per cent. The government provides access to cheaper financing for significant purchases to counter this. Increases in RE deployment are being made by organisations such as the Asian Development Bank and the World Bank. However, major institutional players favor expansive endeavor. Using a planned strategy with grouped projects, more under-represented private sector actors could gain from these institutional efforts.

Establishing and scaling up local manufacturing and technological collaboration is necessaryCompanies have begun producing batteries and charge controllers specifically for RE installations. Technology transfer from India and private sector collaboration would benefit Bangladesh. Businesses in India have started using renewable energy systems, such as solar-powered cell phone towers.

NEPAL

Nepal's substantial off-grid solar, wind, and biomass resources attract private firms to small hydro. Hydropower exports to India are questionable. If private enterprises had broader access to the Indian market, Nepal's hydro sector would grow. Nepal would benefit from importing power from India during the dry season and exporting excess power during the wet season. Large hydro will gain more from this access than small hydro due to the high fixed costs (including transmission lines) of installations that may serve the Indian market. Grid-connected small hydro projects are discouraged by transmission infrastructure shortages. Clearance backlogs frequently result from inefficient government agency communication. Projects under 50 MW need just a modest environmental impact assessment (EIA), whereas larger ones need a full range of ecological **licenses**. The Nepal Power Authority would acquire any electricity generated by a facility under 25 MW that works at full capacity at least 40% of the time (i.e., Q40 plants). Businesses fear losing money if producers don't

export more electricity during the wet season. Developers worry that the Q40 criterion will prevent cost reduction without a larger market. Supplies are available. Smaller hydro projects have issues. 0% VAT, 1% customs, and seven-to-ten-year tax benefits were appealing. Small hydro firms would benefit from building material fee reduction or removal.

THE MARKET MECHANISM OF GREEN FINANCE

The term "green finance market" refers to the collection of market-oriented mechanisms (emissions trading) and financial products (environmental funds, weather derivatives, nature-linked securities, ecological options, etc.) that are used to regulate pollution, create an ecosystem, and safeguard businesses from the effects of climate change.

Emissions trading market mechanism

There are three conditions that must be met before an emissions trading market can be established: (1) an adequate amount of emissions trading occurs in the region; (2) an adequate amount of tradable permits is initially allocated; and (3) sufficient market information is shared among emissions trading parties. The subject of transactions, the method of transactions, market management, market regulation, etc., are all integral parts of establishing an emissions trading market. In 2002, the Slovak government and Japan's Sumitomo Corporation signed an emissions trading agreement for 2,000 tons; the agreement is widely regarded as the start of the global emissions trading market and is a well-known example of how environmental regulators use financial market mechanisms to address issues of air pollution, water pollution, and biodiversity loss.

Types of green financial product

Environmental Funds and Biodiversity Funds	Programs to protect biodiversity are supported by environmental and biodiversity financing. In reality, environmental and biodiversity funds promote organic agriculture, ecotourism, and the sustainable development of forests and fisheries.
debt-for environment Swaps	A developing nation's debt will be forgiven if it contributes to an environmental fund that protects biodiversity. US, Swedish, and German debt-for-environment swaps have helped over 30 nations. Poland-US $370 million transaction is notable.
Forestry Securitization	In Brazil, the system of tradable native vegetation obligations uses securities to transfer all business profits to a new legal subject, which then issues securities in the capital market to raise funds from investors and loan the revenues to forestry exploitation enterprises. In the US, mitigation banking protects wetlands and endangered species.
Weather Derivatives	Climate change makes new financial products recession-proof. If the weather varies sufficiently beyond the threshold, the weather derivative contract firm may get compensation. Since 2002,

	when energy market weather derivatives were first introduced, CME recorded billions in transactions.
Nature-linked Securities	Nature-linked Securities can shift climate and disaster risk to global capital market investors. Catastrophe bond sponsors provide debt securities through SPVs. If sponsors pay an agreed-upon insurance premium, the SPV will repay them in the case of a natural disaster.
Green investment funds	Investment firms and trust funds are favoring ethical, moral, green, socially responsible, and sustainable investments. Many investing organisations avoid polluting company equities to avoid future losses. Equator Principles of Green Finance motivated more investors to invest sustainably.

A summary of green finance market mechanism

Many research focus on green finance's environmental impact. First, the green finance market is a credit intermediary for environmental protection's capital movement. It gathers and allocates money and mandates enterprises and residents' cash shortages. Green financing also boosts productivity. Currency funds movement boosts market-driven commodities trade, bonds production elements quickly, and creates new productivity through financial institutions. Finally, green financing is a key macroeconomic regulator. Capital supply affects societal demand. Green financing market leverage may change economic development size, pace, and structure.

DISCUSSION OF POLICIES IN GREEN FINANCE

The role of policies in green finance

Environmental protection sector development requires a lot of up-front investment capital and a long return time; thus, it needs its own financing strategy. Green finance policies may help government finance via reform and creative financial methods. There are two main ways to increase the efficiency and direction of public funds: first, via the reform and innovation of existing financial tools; second, through the reform of fiscal revenue management and distribution policies.

The impact of green bonds on environmental protection

Green financing requires financial instruments. Global green bonds exploded. Green bonds are green and bonds. First, green bonds' essential function and features. The capital cost of issuing bonds is cheap since interest is pre-tax, bond investment risk is minimal, and investors desire for yield is low. Bonds are ideal for big-scale infrastructure building projects that need substantial amounts of cash and return investment over a lengthy period of time. Government, financial organisations, and businesses are also financed. Bonds offer diversity, profitability, liquidity, and stability above bank deposits. Bond markets allow investors to enter and leave, change their portfolios, and manage liquidity more easily. Green bonds have "green" standards. Renewable energy and ecological initiatives must receive the money. Green bonds mitigate climatic and environmental risk. Some green bonds receive national or local government subsidies and may have preferential policies in the future, such as reduced investment thresholds, tax breaks, etc. Green bonds offer higher

transparency standards than normal bonds, so investors may invest with minimal risk, satisfy social obligation, and benefit. The EIB issued the first worldwide Climate Awareness Bond in June 2007 to finance its renewable energy and energy efficiency programmes. After then, the worldwide green bonds market has seen the first development stage (2007~2012) and rapid development since 2013. Scale and issuer diversity characterize the green bonds market. Europe is extending to emerging nations.

How the policies ease the contradictions between the green finance and environmental protection

Green finance programmes must reconcile conservation and financing. The first issue is green finance funding liquidity. Liquidity is an asset's ability to sell at a fair price. Liquidity is measured by asset cost and speed. Liquidity increases with decreasing liquidation costs. On a busy market with many buyers and sellers, assets may be liquidated more easily. Conservation takes time. Investing in eco-friendly projects or related stocks takes time. For instance, large infrastructure development projects sometimes start without finance, therefore the recycling condition limits their ability to absorb cash. To reconcile green finance and ecological protection, policies must first find funds that match project term structures, then issue financial derivatives like asset securitization products to change project term structures, and finally build climate derivatives and ecological finance to boost green finance market activity.

CONCLUSION

This study conducted a literature assessment on research on green finance and suggested some relevant areas for additional analysis. According to the findings, green finance can significantly impact the environment and society. There are still many challenges, such as insufficient awareness, the usage of multiple definitions, the lack of coordinated laws and regulations, and the absence of a cause that investors and financial institutions may support. Additional study is required in the following areas: 1) additional research on green innovation and the risk-reward tradeoff; 2) investigation of the relationship between green investment and environmental change; 3) determination of the limits of private and public sector involvement in green financing; 4) investigation of the relationship between green finance, social finance, and digital finance; and 5) investigation of how regulation affects green finance. This investigation is limited by one factor. Although it endeavored to include all relevant research studies, it may have omitted some that were essential. With hope, this review article encourages those researching finance and the environment to investigate the crucial issues in green finance, especially those not covered in this review article. Numerous methodologies and concepts in mainstream finance literature have the potential to considerably enrich the literature and aid in the resolution of green finance difficulties. Green finance promotes resource sustainability and environmental preservation. Green finance can lead finances, manage environmental risk, and optimize environmental and social resource allocation if its market mechanism is reasonable. Effective policy regulation eliminates knowledge asymmetry and moral hazard. Environmental protection should include a green finance system that coordinates ecological and money. Financial tools can support renewable energy for environmental conservation.

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