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Green Finance as an Institutional Mechanism to Direct the Belt and Road Initiative towards Sustainability: The Case of China

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Abstract: China's Belt and Road Initiative (hereinafter BRI) has been challenged due to its failure to promote long-term environmental sustainability. Recent years, however, have witnessed a tendency in which green finance is being deliberately crafted by Chinese regulatory authorities in order to support a green BRI. Despite BRI's popularity as a scientific research topic, the legal literature with regard to China's domestic green finance laws/regulations and their impact on BRI's sustainability is insufficient. The purpose of this study is to fill this research gap by examining how China has utilized green finance as an institutional mechanism in order to steer the BRI toward sustainability, as well as to provide policy suggestions on how to further improve BRI's sustainability by addressing existing legal and regulatory deficiencies. The methodology utilized was a textual analysis of legal/regulatory documents. Based on an investigation of the environmental sustainability challenges faced by the BRI, this paper elaborates Chinese banks' green finance practices in facilitating a sustainable BRI. It makes a further inquiry into the regulatory instruments by which Chinese banks are able to improve their green performances, and elucidates existing regulatory deficiencies. Finally, it presents policy recommendations intended to enhance the ability of Chinese banks to obtain more private capital to finance BRI green projects, including: (1) introducing 'green' provisions to the draft Commercial Bank Law; (2) developing a mutually recognized green standard; (3) mandating environmental disclosures; and (4) encouraging institutional investors to buy green assets.

Keywords: Belt and Road Initiative; sustainability goal; green finance; banking performance; green finance regulation; China



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1. Introduction

The Belt and Road Initiative (hereinafter BRI), launched by China in 2013, is a policy and infrastructure investment program designed to enhance regional integration, promote international trade, and stimulate economic growth [1]. 142 countries had participated in the BRI (hereinafter BRI countries) as of December 2021, and the networks were dispersed across Asia, the Asia-Pacific region, Africa and Europe via two economic routes, namely the Silk Road Economic Belt and the 21st Century Maritime Silk Road [2].

Following its inception, significant infrastructure investments have been made by Chinese enterprises in BRI countries. The total amount of Chinese direct BRI investment between 2013 and November of 2021 was approximately USD 157.8 billion, according to the Ministry of Commerce of China [3]. Numerous China-funded megaprojects fall into the transportation and energy sectors [4], most of which have been largely financed by Chinese banks, although concerns have arisen about their ability to keep funding BRI [5] (pp. 20–22).

While the BRI investment scale has been remarkably expanded, it has encountered serious environmental sustainability challenges. ‘Sustainability’ was defined by the UN Brundtland Commission in 1987 as ‘meeting the needs of the present without compromising the ability of future generations to meet their own needs [6]’. The development of the BRI requires a far-reaching vision of sustainability, considering that China-financed megaprojects have been found by the World Bank to pose a variety of environmental risks [7]. The BRI’s environmental challenges have attracted academic attention as well, for example, on the relationship between energy consumption and carbon emissions [8] and on the impact of alien species invasion on biodiversity [9]. Having elicited wide criticism both from the West and BRI countries [10], these environmental challenges, if not addressed, will stigmatize the BRI and further hinder its progress [11].

Realizing these challenges, the Chinese Government is committed to creating an environmentally friendly BRI. In 2017, four ministries of the China State Council jointly announced that sustainability had now become an essential component of the advancement of the BRI, and that one of China’s primary tasks is to improve the environmental management of BRI investments and to establish a green financial system [12]. The importance of green finance has subsequently been reiterated. China’s 2019 BRI progress report, for example, acknowledges that green finance should be developed further in order to underpin the green development of the BRI [13].

To fulfil this objective, two Chinese banking regulators, namely, the People’s Bank of China (hereinafter PBOC, the central bank) and the China Banking and Insurance Regulatory Commission (hereinafter CBIRC), have released numerous policies, guidelines, and standards to strengthen the ‘green’ characteristics of banks’ green finance, particularly those relating to green credits and green financial bonds. These regulatory instruments, if well-designed and implemented, can improve Chinese banks’ green performance both domestically and in BRI countries, and a more sustainable BRI would thus benefit from such a development. Hence, a thorough review of regulations is necessary in order to examine their ability to facilitate a sustainable BRI.

There are concerns over BRI’s financial feasibility due to China’s recent efforts to reduce its overall debt level and focus more on domestic needs, which may negatively affect Chinese banks’ ability to consistently finance all of the huge BRI projects [5] (pp. 21–22). While it is true that China cannot finance all the infrastructure needs alone [5] (p. 34), facilitating BRI remains China’s national policy in the pandemic era [14]. As such, China will have to carefully select which BRI projects are to be financed and utilize more private capital, a stance echoed in the ‘Opinions on Promoting the Green Development of Belt and Road’ jointly issued by four ministries on March 2022, which states that banks are encouraged to raise capital for BRI green investments through international financial markets. Chinese banks thus need to attract more international investors when issuing BRI-themed green bonds. Accordingly, China’s green finance regulations must be carefully evaluated as to whether they will reassure investors, thereby alleviating the financial constraints that China has met, enabling BRI to obtain enough financing to achieve sustainability.

The potential scope of achievement to put the BRI on a greener path in the next few decades remains worthy of comprehensive investigation. To date, many studies have addressed the BRI’s geo-political impact on international order, comparing the BRI with the Marshall Plan [15], and arguing it represents a new stage of China’s globalization focused on building its soft power [16–19]. There has been considerable interest in the sustainability aspect of BRI, although the focus has mainly been on the effectiveness of BRI in promoting sustainable development [20] or more broadly, for example, comparison between the BRI and the United Nations Sustainable Development Goals (UN SDGs) [21,22]. Rarely, however, has attention been paid to the narrative of legal/regulatory contexts related to green financing from Chinese banks. Although legal studies have investigated the BRI’s sustainability challenges and suggested possible solutions in terms of environmental law [23] or international law [11,24], examined BRI-related green finance and argued that soft-law could be used [25], comparatively reviewed green finance practices in foreign countries [26],

and introduced international green bond standards for China to consult [27], rarely have they provided a comprehensive textual analysis of China's regulatory instruments on green finance or whether these rules have any weaknesses in terms of achieving a greener BRI.

This article intends to fill this gap by examining Chinese law, regulation, and soft law that facilitate Chinese banks' performance in green finance, shedding light on the role and significance of domestic financial regulation in directing the BRI toward sustainability. Accordingly, the primary research questions are: in what ways do China's green finance regulations influence banks' overseas performance in BRI countries? Do those regulations have any weaknesses? How might these deficiencies be addressed? By answering these questions, this paper fills a research gap with regard to the legal/regulatory literature in this area. The policy suggestions presented herein can be used by lawmakers, regulators, and financial institutions in the future in order to facilitate the long-term sustainability of the BRI.

This paper consists of four primary Sections. Section 4 scrutinizes the sustainability challenges involved in China-financed BRI infrastructure projects and probes the Chinese government's efforts to facilitate a sustainable BRI. Section 5 introduces green finance as an emerging mechanism that is able to facilitate the sustainability of the BRI. Section 6 examines China's regulatory instruments governing banks' green finance practices, and identifies several deficiencies in the current regime that may hinder the implementation of a green BRI. The final Section provides relevant policy suggestions to address these deficiencies.

2. Materials and Methods

Because the purpose of this research is to identify deficiencies in China's green finance legal/regulatory instruments in terms of facilitating a sustainable BRI and to provide suggestions for revision, the major methodology we use is a textual analysis of the relevant primary legal literature using classical legal methods, that is, analyzing the provisions of the relevant laws and regulations in order to determine whether their goals are achievable and whether any deficiencies exist that might negatively affect the achievement of such goals. After these shortcomings have been identified, the law/regulation can be revised accordingly. Therefore, a textual review of primary legal sources, including Chinese legislations, regulatory bodies' top-down regulations, self-discipline rules, and soft law, is conducted here in order to determine whether these measures are appropriate for enhancing banking performances towards achieving a sustainable BRI.

Note that such a content analysis approach requires careful contextualization of the analyzed laws and regulations at the time when they became effective as well as consideration of any subsequent changes to the issuing background. Any analysis that neglects the background of lawmaking to construe an outdated law that has become inapplicable or inappropriate today may lead to the argument being meaningless in light of this special lawmaking background intended to address special demands. That said, the issue is less problematic in this study, as all analyzed rules were issued within a decade and there have been no significant changes in the broader social/legal context during this period, whether in terms of government facilitation of BRI and green finance or in the 'opening-up' of the domestic capital market.

Various secondary sources are used in this paper as well, including information collected from Chinese central government ministries' websites, data from financial institutions, think tank databases, news articles, and academic literature in Chinese and English. In order to ensure the credibility of secondary sources, careful selection criteria have been applied. For example, government documents were directly downloaded from ministries' official websites. Cases involving green loans/green bonds were sourced from banks' websites and their annual whitepapers. Green bond issuance data were gathered from the websites of securities exchanges. Data from websites of international organizations such as the United Nations, the World Bank, and Boston University's China's Global Energy Finance database were relied on as well. As for the academic literature, only articles published in reputable journals were cited. Newspaper articles were consulted when necessary,

with both Western (e.g., Reuters) and Chinese (e.g., Xinhua Net) media consulted in order to minimize the possibility of bias. All these materials serve variously to illustrate the environmental sustainability challenges of BRI infrastructure investments, describe the current state of Chinese banks' green finance performances in BRI countries, examine the strength of China's green finance regulations, and identify any regulatory shortfalls. The paper's conceptual framework is illustrated in Figure 1 below.

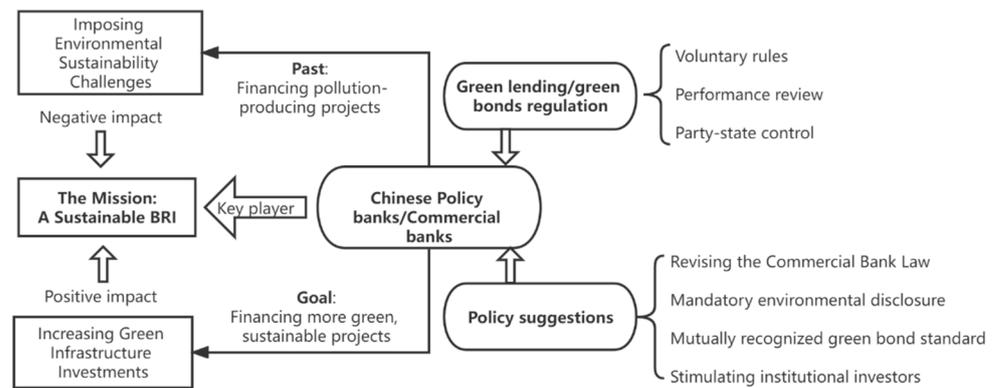


Figure 1. Conceptual framework of this research.

3. Literature Review

3.1. Tools for Facilitating the BRI's Environmental Sustainability

As one of the BRI's alleged objectives is to 'stimulate economic growth' [1], empirical studies have addressed the economic impact of increased infrastructure projects and international trade to host states and concluded that BRI can contribute to economic growth in less-developed BRI countries [20,28–30].

In the meantime, infrastructure construction can pose great environmental risks [11,31]. In multiple regional studies on the BRI's environmental performance in BRI regions such as central Asia and Russia [32], the Arctic region [33], and Latin America and the Caribbean [34], it has been revealed that the BRI poses significant risks and threats to environmental sustainability. While China began promoting the 'Green BRI' vision in 2016, different levels of green development have been observed among host countries due to their uneven economic and social development conditions [20,35]. Various policy suggestions have therefore been put forward in the literature on establishing a greener BRI.

In order to improving Chinese enterprises' ESG performance in their foreign direct investments (FDIs), China has encouraged enterprises to comply with host country laws. For example, the 2017 Guidance on Promoting the Green Belt and Road advocates 'voluntarily' adherence to local environmental laws [12]. Zhai viewed host state laws and regulations as 'the first defense' against environmental risks able to provide minimum protection [11].

However, the environmental laws and regulations of less-developed host states may be unestablished or set lower standards than China's [23,24,36], and these countries may be incentivized to reduce environmental standards in order to attract more FDIs, creating a 'pollution haven' for foreign investors [36]. As a majority of BRI countries are low-income countries that may 'race to the bottom' to attract Chinese FDI, Coenen et al. suggested that Chinese enterprises may engage in 'jurisdiction shopping' in order to relocate polluting manufactories in a host state where environmental laws are either relaxed or not strictly enforced [37]. The same theory was supported by Harlan et al., who found that Chinese enterprises' FDIs were imbalanced in terms of the projects in which they are investing, with low-carbon projects concentrated in high-income countries and regions and high-polluting projects located mostly in lower-income countries and regions [38]. China was thus criticized for relocating its polluting industry to less-developed BRI countries [32], thereby posing further environmental risks to their fragile ecosystems [39].

Having realized the insufficiency of host states' environmental laws, Tracy et al. [32] and Jiang [40] suggested that Chinese enterprises should adopt environmental standards

in their FDIs that are no less stringent than those applied in China. Chinese environmental laws/regulations, however, while strictly binding to enterprises' activities at home, seldom contain mandatory provisions governing their FDIs abroad. According to Boer [23] and Coenen et al. [37], these laws are largely voluntary in regard to environmental matters in FDIs, and no legal or financial sanctions exist for noncompliance. There is no obligation for Chinese enterprises to apply stringent Chinese laws when they investing abroad [23]. As Coenen et al. observed, the Chinese government did not use a 'command-and-control' approach for its businesses investing overseas, rather relying on firms and banks to engage in voluntary self-regulation [37]. Such inadequacies could compromise the ability of domestic environmental law in effectively regulating polluting FDIs.

In cases where host and Chinese environmental laws are unavailable or less relevant, the use of international agreements to bind Chinese FDIs seems to be an alternative method. For example, Tracy et al. suggested that Chinese enterprises should conduct environmental impact assessments (EIAs) for their BRI projects and use bilateral investment agreements (BIAs) and multilateral environmental agreements (MEAs) to facilitate the adoption of EIAs [32]. Zhai suggested the use of bilateral/multilateral treaties in order to enhance the implementation of green standards, assign duties and obligations to Chinese enterprises, and introduce dispute resolution mechanisms on environmental disputes [11]. However, Wang observed that China views the BRI primarily from a 'non-treaty-based perspective' and has relied on the adoption of informal soft laws that are not legally binding [41]. Accordingly, it has been argued that a green BRI will not materialize without strict and detailed rules that outline 'concrete sets of actions' for Chinese FDIs [37].

These studies discuss both the importance and insufficiencies of environmental laws and regulations in facilitating a green BRI in the context of Chinese FDIs. With the vast majority of FDIs being financed by Chinese banks, this study presents a different perspective by examining Chinese green finance laws regarding their capacity to facilitate the sustainability of the BRI. Nevertheless, the literature reviewed above regarding how Chinese environmental laws that are largely voluntary are insufficient to regulate Chinese FDIs provides an important standpoint for this study on the effectiveness of green finance rules.

3.2. Green Finance for Sustainability and Concerns about the 'Greenness' of Green Finance

The term 'green finance' is a broad concept and has been defined differently, without any consensus yet achieved [42,43]. The G20's 2016 report [44] (p. 5) provides a commonly quoted definition of green finance as 'financing investments that provide environmental benefits for environmentally sustainable development'. Instruments of green finance mainly include, inter alia, green lending and green bonds [44] (p. 6).

The impact of green financing on facilitating environmental sustainability has been examined in a variety of studies. Researchers have observed that green loans [45–48] and issuance of green bonds [49] can reduce carbon intensity. The integrity of the green financial system has been demonstrated to have a positive impact on cleaner production [50]; therefore, green finance can play a crucial role in the acceleration of the transition to sustainability [51]. By financing 'green' projects in host states, green finance can contribute to the BRI's environmental sustainability [52,53].

With the awareness of the positive impacts of green finance, concerns have arisen about how to enhance the greenness features of green finance, that is, to fund only ecologically friendly projects. The definition of 'green', which separates green finance from non-green conventional financial instruments, is most contentious amidst these concerns. Globally, policymakers, banks, institutional investors, and financial service providers such as credit rating agencies have developed their own sets of green standards [54]. Nedopil et al. attribute the fragmentation of green finance standards to a number of factors, including differences in economic governance systems and in the specific environmental conditions in different countries [55]. The lack of consistency in green standards is particularly problematic for green bonds, as it might lead to issuers 'cherry-picking' the appropriate green standard at the expense of ESG investors' confidence [56]. While it is not feasible to

build an ‘one-size-fit-all’ green standard, evidence from the Chinese green bond market suggests that a harmonized green standard and alignments with international best practices can promote green finance growth [57].

Green finance faces concerns with perceived ‘green washing’ problems, namely, ‘practices aimed to mislead investors or to give them a false impression about how well an investment is aligned with its sustainability goals’ [56]. The lack of transparency regarding the use of proceeds and the lack of universal green standards are considered to be major causes of green washing [58]. Green washing can severely damage investor confidence, can lead to sustainability investment gaps, and contributes to an increase in the volatility of green investments [59]. Schiereck et al. suggested third party verification as a measure [60] which can reduce information asymmetry and convince investors of the greenness of green bonds [61].

Throughout the existing literature, green finance studies extensively discuss both the benefits of using green finance for environmental sustainability as well as the barriers to its development; however, textual analyses of China’s green finance laws and regulations in the context of supporting a greener BRI are rare. This study aims to review the laws in order to ascertain whether the above concerns are adequately addressed, or, if they are not, to pinpoint the weaknesses in the laws regarding Chinese banks’ overseas green lending and green bond issuance and suggest policy recommendations to enhance banks’ green performance, as it is crucial for the achievement of a greener BRI.

4. Environmental Sustainability Challenges of China’s BRI Investments

A major concern regarding the BRI is that China-funded infrastructure projects may contribute to or exacerbate environmental problems [7]. Following a comprehensive literature review, these challenges mainly comprise:

- Carbon emission and pollution from fossil fuels: China has funded many coal projects in BRI countries [62]. The construction, operation, and maintenance of infrastructure will increase fossil fuel energy consumption [63]. Industrialization of the BRI countries will result in an increase in energy consumption [8]. Improvement in trade openness has a significantly positive effect on CO₂ emissions [64]. Increased emission of greenhouse gases and air pollution could accelerate global warming and related problems such as ocean acidification and permafrost melting [65].
- Exploitation of natural resources: construction of infrastructure will inevitably lead to an increase in the consumption of raw materials such as sand, limestone, and fossil fuels, which are either non-renewable or exceed their natural renewal rate, thus depleting finite resources [31].
- Water pollution and shortage: as the BRI aims to enhance international trade, the increased use of seaborne transportation along the ‘21st Century Maritime Silk Road’ will expose oceans and coastal waters to increased pollution risks [66,67] due to bilge oil and motor fuel leakage, antifouling paint leaching, transfer of harmful aquatic organisms, etc. [68]. Of further concern is increased export-oriented industrialization (such as cement production) and consequent water pollution issues [69–72]. There has been criticism that China is exporting heavily polluting industries to its neighbors, for instance, after China’s Huaxin Cement invested in two cement plants near Tajikistan’s capital Dushanbe [32].
- Biodiversity loss: BRI projects that build in biodiversity hotspots, wilderness areas, and other critical conservation areas can lead to biological invasion and pose threats to local biodiversity [9,73–75]. Research has found that the building of highways in Indonesia’s Bornean forests will have significant negative impacts on rare species [76]. Other consequences include alien species invasion [9], habitat destruction, and over-hunting [77].

Having identified various environmental risks, scholars have suggested that the environmental impacts of BRI policies, plans, and programs must be evaluated at an early stage of decision-making rather than ignoring the issues and repairing the pollution later

on [31]; this has already been illustrated by China's coal investments in BRI countries. Data indicate that China is by far the largest financier of coal-fired power plants abroad and that the two state-owned policy banks, the Export-Import Bank of China (hereinafter Exim Bank) and the China Development Bank (hereinafter CDB), have accounted for USD 15.6 billion of coal loans [78]. Between 2014 and 2017, 91% of energy-sector loans granted by Chinese banks to BRI countries were for fossil fuel projects [79]. This heavy coal investment conflicts with China's status as a signatory to the Paris Agreement to tackle climate change, and invites criticism about leading coal-rich BRI countries to build out more fossil fuel energy than they require [80].

As such, the BRI has been faced with local hostility, which has resulted in the termination of many China-financed coal projects in host states, including Bangladesh [81,82], Pakistan [83], and Egypt [82]. Despite the lack of official statistics, research indicates that of the 52 China-financed overseas coal power projects announced following 2014, 25 had been cancelled and eight shelved as of 2021 [84].

In addition, China has been under considerable international pressure regarding its overseas coal investments [85]. For example, in April 2020 a coalition of 260 environmental organizations from around the world petitioned China's Ministry of Finance to cease funding unsustainable BRI projects, compiling a list of polluting projects that should not be financed [86].

China has accordingly begun to reduce its overseas coal investments and convert to green energy. In September 2021, President Xi Jinping stated that 'China will step up support for other developing countries in developing green and low-carbon energy, and will not build new coal-fired power projects abroad' [87]. In November 2021, the China-US Joint Glasgow Declaration on Enhancing Climate Action in the 2020s stated that both countries would continue their cooperation on climate change and that they would increase their financial support for 'climate adaptation' in developing countries [88]. Such climate adaptation can be achieved by promoting green industrial policies, and would require substantial public investments in renewable energy and green technology [89].

As most of the BRI countries are emerging and developing economies (EMDEs), China's green investment will be of crucial importance to them in adapting to climate change. Financial institutions are particularly important, as they can direct investment flows toward green energy [90]. In light of this, in the 'Qingdao Initiative for BRI Energy Cooperation', China calls for attracting more private investment and employing green financial instruments to finance the renewable energy BRI projects [91]. A step forward is China State Council's 'Action Plan to Peak Carbon Emissions Before 2030', which reiterates that China will guide its financial institutions toward providing low-cost, long-term financing for green projects [92].

Thus, it is worthwhile to look into how and to what extent China's green finance industry can contribute to the environmental sustainability of the BRI.

5. Chinese Banks as Active Players in Facilitating a Green BRI

For the time being most Chinese BRI investment projects are financed through debt financing, such as bank loans and green bonds [93]. Equity financing currently represents only a relatively small portion of China's BRI investments. The Silk Road Fund (China's wholly state-owned private equity fund for BRI investments) had committed USD 17.8 billion to 47 BRI projects as of October 2020 [94]. This is compared to the total USD 175.6 billion BRI energy loans provided by Chinese banks between 2014–2017 [79] (pp. 9–10). The reliance on debt financing is further evident in BRI green energy investments, as bank loans were found to have financed the majority of renewable BRI energy projects as of 2017 [79] (p. 23).

Considering the significance of this debt financing, the emphasis of this article is on the green debt financing practices of China's policy banks and the 'big four' largest commercial banks [95], which are currently leading the charge in BRI-related green finance [96].

One noteworthy feature of China's green finance progress is that these banks are heavily motivated to respond to 'top-down' governmental and regulatory-driven green finance policies, as they are either wholly state-owned or state-controlled central financial enterprises and their chief executives and senior managers are appointed by the Central Government and the Chinese Communist Party [97]. Under this dual party-state control, strong policy levers for promoting green credit can be created [98]. In addition, as part of China's 'Go Out' policy, these banks are tasked with providing financial support to Chinese companies' FDIs [99]. Accordingly, it can be expected that banks will actively follow the government's policy of terminating overseas fossil fuel lending and converting to green financing. As an example, in September 2021, two days after President Xi's aforementioned statement, the Bank of China (hereinafter BOC) swiftly responded to the policy shift by developing an action plan for achieving peak emissions and carbon neutrality [100].

There are self-motivating factors for Chinese banks' transition to green finance as well, as those banks that finance coal projects overseas may sustain heavy losses if host countries cancel projects under construction [84] (p. 9). Moreover, banks that hold coal loans as assets may have difficulties selling or securitizing the loans due to increased competition in light of renewable energy sources and climate change risks [84]. According to reports, this may account in part for the cancellation by the Industrial and Commercial Bank of China (hereinafter ICBC) of a USD 3 billion project to finance a coal-fired power plant in Zimbabwe [101]. In addition, the first half of 2021 did not see any new Chinese coal investments in BRI countries [102].

Currently, Chinese banks' BRI-related green finance practices are mainly threefold, i.e., lending green credits, issuing green financial bonds, and underwriting onshore green bonds [103].

5.1. Lending Green Credits

The PBOC defines 'green credit' as loans provided for energy conservation and environmental protection, production of clean energy, environmental protection, eco-friendly infrastructure upgrades, and green services. Given the considerable size of BRI infrastructure loans, syndicated loans are often provided by several banks in order to share risk and to satisfy regulations concerning credit exposure to a single borrower. A green loan may be granted to a host country's government or state-owned enterprises (SOEs) that carry out the project, or to joint investors, which occasionally include Chinese enterprises [104].

China's two policy banks, the Exim Bank and the CDB, have together financed numerous green BRI projects [79,105–108]. While they do not provide official BRI loan statistics, a database created by the Global Development Policy Center at Boston University reports that, as of March of 2022, the Exim Bank had provided USD 27.3 billion to 69 hydropower projects in BRI countries [107]. Similar efforts in granting green BRI loans are being taken by China's largest commercial banks [109–111].

5.2. Issuing Green Financial Bonds

A 'green bond' is a debt financing instrument that enables the issuer to raise capital in the form of conventional bonds; the proceeds raised are then used to fund 'green' projects [111]. A 'green financial bond' in the Chinese regulatory context refers to a green bond issued by domestic banks to institutional investors. All of the proceeds from green financial bonds must be devoted to financing green projects, ordinarily through granting green loans to eligible green infrastructure projects. Depending on the way they are offered (i.e., onshore or offshore), green financial bonds may be listed on the China Interbank Bond Market (CIBM) or on other offshore exchanges [112].

Green bonds can assist in 'greening' the BRI, and can supply benefits to both issuers and investors. First, as green infrastructure financing requires a great deal of investment and Chinese banks can hardly finance all projects on their own [96], issuing bonds is an effective way for banks to mobilize private capital for green BRI projects [113].

Second, for institutional investors a green bond represents an ESG investment option that incorporates climate transition factors into investment decisions. As an investment portfolio option, green financial bonds issues by Chinese banks represent a low risk in that the Chinese banks are stringently supervised, with high credit ratings and little risk of default. Accordingly, their financial bonds' yield is typically significantly lower than bonds issued by non-financial corporations. For instance, the coupon rate of the Exim Bank's 'Bond Connect' green RMB financial bond (issued on 24 December 2021) was set at 2.48% [114]. Comparatively, 105 corporate bonds listed on the Shanghai Stock Exchange in the same week (20–24 December 2021) offered an average coupon rate of 5.23% [115]. Thus, a third benefit is that banks offering green financial bonds are able to raise relatively cheap funds for green BRI projects. Green bonds therefore serve as an important source of capital for green credit lending [98]. This will ultimately contribute to the green development of the BRI.

Globally, the first-ever green bond was issued by the European Investment Bank in 2007 [116]. While China is a latecomer to this field, with its first green financial bond issued in 2016 [117], it has been actively mobilizing green bond issuance, as evidenced by the many BRI-related green financial bonds.

Chinese policy banks have issued green bonds for BRI projects both onshore and offshore and to both domestic and foreign institutional investors. For example, in December 2017, the Exim Bank issued RMB 2 billion onshore 'Bond Connect' green financial bonds for financing clean energy projects in BRI countries [118–120]. The Hong Kong branch of CDB has recently successfully issued USD 500 million in offshore green bonds on the RegS market in order to finance green projects involving renewable energy, clean transport, and pollution prevention [121,122].

Commercial banks have issued green financial bonds to finance BRI projects as well, mostly through issuance of offshore bonds by their overseas branches [122]. For example, in October 2017, the Luxembourg branch of ICBC successfully listed its first 'belt and road' climate bond on the Luxembourg Stock Exchange, and the USD 2.15 billion raised thereby was used to support green projects domestically as well as in key BRI countries [123]. Other reported offshore green bonds include the Singapore branch of ICBC's 'Green Belt and Road inter-bank regular cooperation (BRBR) Bond' [124], the Hong Kong Branch of CCB's green bonds listed on NASDAQ Dubai [125], and the Macau and Paris branches of BOC's 'blue bonds' for financing marine projects [126]. Banks can benefit from issuing offshore green bonds both by accessing a broader pool of non-resident investors as well as by reaping the benefits of positive public image associated with their commitment to green finance, which can strengthen the reputation of leading financial institution through engagement in combating climate change.

5.3. Underwriting Onshore Green Bonds

The third role taken up by Chinese banks to facilitate a greener BRI is the underwriting of onshore green bonds issued by resident and non-resident issuers.

As underwriters, banks serve as the most important intermediary in green bond issuance. In the event that an offering is too large for an underwriter to take on, the 'lead underwriter' may form an underwriter syndicate with other underwriters in order to spread the risks of selling bonds, which is quite common with green infrastructure bond offerings [127]. A lead underwriter's duties include, *inter alia*, assisting the issuer in disclosing information for bond investors to make informed decisions [128].

Both of the two policy banks as well as the 'big four' commercial banks have obtained mainland China's underwriting licenses, and have been actively engaged in the underwriting of onshore green bonds on the inter-bank market. Depending on where the bond issuer resides, their underwriting business includes two main conditions:

- Underwriting a Chinese issuer's onshore green bonds. This is the most common case, in which Chinese banks underwrite domestic enterprises' green bonds. Typically, the proceeds from the sale of these bonds are invested in domestic green projects [129]. An

- example is the Exim Bank's serving as lead underwriter for the State Grid Corp's RMB 5 billion green mid-term note (a carbon-neutral bond) in 2021, the proceeds of which will be used to construct hydro-power plants on the Yalong and Yangtze Rivers [130].
- Underwriting a non-Chinese issuer's onshore renminbi-denominated green bonds ('green panda bonds'). The first mid-term green panda bond for BRI projects was issued in 2017 by China Merchants Port (based in Hong Kong) underwritten by ICBC, and raised RMB 2.5 billion for the construction and operation of ports in BRI countries.

As the mainland bond market progressively opens up, foreign institutional investors can now purchase Chinese onshore green bonds via a variety of flexible access methods [131]. Banks are therefore in a better position to sell the green bonds they have underwritten, which in turn will assist companies seeking to finance BRI green projects, thus contributing to the BRI's sustainability.

5.4. Financing a Greener BRI in the Pandemic Era

The COVID-19 pandemic poses unexpected challenges to Chinese banks' green financing practices in BRI countries. Long-term lockdowns have exacerbated global economic difficulties, which is particularly serious in vulnerable developing countries in the BRI regions [132]. Many existing BRI projects have been delayed [133–136], and several countries have faced pandemic-induced debt crises [136,137], causing tensions between China and host countries [138,139].

In addition, China per se has experienced an economic contraction, with a significant decline in FDIs [139]. Despite China's economic recovery in the first half of 2021, the World Bank cautions that risks of a downturn have increased in 2022 [140]. Considering the extensive demand for BRI infrastructure funding [141], Chinese banks are less likely to provide such a huge amount of foreign loans when domestic demand for funds is high as well. The feasibility of the BRI in the pandemic era is hence in question [142].

However, these challenges present new opportunities. Sustainable development has been emphasized following the outbreak of the pandemic, as the crisis has 'highlighted the importance of a safe, clean and sustainable environment to reduce systemic health risks' [143]. It is thus anticipated that China's BRI investments in green energy will continue to accelerate [144]. Several indicators of this trend have already been identified. China's overseas renewable energy investments have been steadily increasing, with hydro power investments accounting for 35 percent of BRI energy investments in 2020, exceeding coal power plants (27 percent) for the first time [139] (p. 10). In 2021, several BRI countries, such as Qatar, Oman, and Egypt, received 100% green energy investments from China [139] (p. 11). Enhanced green investments in BRI countries represent a way of speeding up the pace of global economic recovery.

In addition, although it is not the intention of this paper to discuss the financial feasibility of the BRI and host states' debt vulnerability, this uncertainty may have contributed to the sharp decline in the average investment size of Chinese BRI investments between 2018 and 2021, which dropped from USD 1.3 billion to USD 0.55 billion [102]. Nedopil Wang hence predicted that in contrast to loss-making investments in intensive coal projects, smaller BRI projects (such as solar and wind power stations) that would be easier to finance and more rapidly implemented would have a better chance of prospering in the post-pandemic era [102]. As such, the pandemic crisis could represent an opportunity to reset the BRI, particularly by prioritizing green finance [86].

Amidst the challenges and opportunities posed by the COVID-19 pandemic, Chinese banks must place greater emphasis on ESG factors in their future BRI financing practices. It is noteworthy that both the policy banks and the 'big four' commercial banks have signed up to the 'Green Investment Principle' (hereinafter GIP), along with 35 other financial institutions globally [145]. The GIP is formulated to enhance the sustainability of BRI investments. Its seven principles are: embedding sustainability into corporate governance; understanding environmental, social, and governance risks; disclosing environmental information; enhancing communication with stakeholders; utilizing green financial instruments;

adopting green supply chain management; and building capacity through collective action. These principles align the BRI with the UN SDGs, which recognize that sustainable development must balance societal, economic, and environmental sustainability [146]. Embracing the GIP will enable banks to establish trust with ESG investors and consequently assist banks in mobilizing private sector funds to finance green BRI projects through green loans.

While the GIP does not contain details for banks to follow on a daily basis, it does provide for a consensus on good practices to which its signatories adhere voluntarily [147]. In light of this commitment, it becomes evident and essential to examine China's green finance laws, policy initiatives, regulatory guidelines, and other top-down green instruments, which contain detailed provisions that instruct banks to enhance their green financing performance at home and abroad, and whether these legal/regulatory instruments are capable of fostering a greener BRI.

6. Examining Green Finance Rules for Banks on the Green Transition of BRI

6.1. *Applicable Laws and Regulations*

China's current basic bank law, the Commercial Bank Law (2015 Amendment), does not contain any green finance provisions, partially because the concept was new at the time of the law's formulation. Two other pieces of legislation, the Energy Conservation Law (2018 Amendment) and the Circular Economy Promotion Law (2018 Amendment), both include a provision regarding the use of bank credit for promoting energy conservation and circular economies. Banks are encouraged to offer concessional loans to support energy conservation projects and resource conservation projects, and are prohibited from financing projects in the 'obsolete' category that the government is planning to phase out. However, these provisions are intended primarily to improve banks' green lending performance on the domestic market rather than to regulate foreign lending, and they provide no detailed explanation of how they can be applied.

Regulations relating to banks' green finance are predominantly set at the ministry level, led by the State Council's financial and economic regulators. The first regulation relating to green credits was enacted in 1995, when the PBOC mandated that banks should incorporate 'natural resource protection and environmental protection' into their credit decisions [98]. Though various measures have been subsequently taken by financial regulators to reduce the environmental risks involved in credit lending and securities offerings, the first comprehensive framework for green credit lending was issued in 2012 by the erstwhile China Banking Regulatory Commission (hereinafter CBRC) and the PBOC, i.e., the Green Credit Guidelines (2012), which outlined how banks' boards and senior management ought to address sustainability concerns and how to incorporate environmental and social risk management into loan lifecycles [98]. The second significant milestone on the path to green finance regulation was achieved in 2016, when seven ministries jointly issued the Guiding Opinions Establishing the Green Financial System. This document set out the framework of the government's plan to establish a comprehensive green finance system by aiming to encourage capital investment in green areas instead of polluting ones.

The banking regulatory authorities have, together with other ministries, proactively implemented a number of policy initiatives and regulatory guidelines concerning green credits and green financial bonds (see Table 1 below). These regulatory instruments collectively outline the contours of the green finance regulatory framework for Chinese banks. Despite not being 'hard law' with legally binding effect, these rules can motivate banks to improve their green financing performance because banking regulators consider their performance when evaluating domestic banks.

Table 1. Green finance: law, policy initiatives and regulatory instruments for banks, 2012–2021.

Type	Issuing Authority	Effective Date	Name
Legislation	NPC	October 2018	Circular Economy Promotion Law (2018 Amendment), art.45
			Energy Conservation Law (2018 Amendment), art.65
General regulatory framework	CBRC, PBOC, MEP, CRSC, CIRC, NDRC, MOF	August 2016	Guiding Opinions of Establishing the Green Financial System
	CBIRC	December 2019	Guiding Opinions of the CBIRC on Promoting the High-quality Development of Banking and Insurance Industries
	MEE, NDRC, PBOC, CBIRC, CSRC	October 2020	Guiding Opinions of the MEE, the NDRC, the PBOC and Other Departments on Promoting the Investment and Financing in Response to Climate Change
Green credit	CBRC	January 2012	Green Credit Guidelines
		July 2013	Notice of the CBRC on Submission of Green Credit Statistics Form
		June 2014	Notice of the CBRC on Key Performance Indicators of Green Credit Implementation
		September 2017	Guiding Opinions of the CBRC on Regulating Banking Services for Enterprises Heading Overseas and Strengthening Risk Prevention and Control
		December 2015	Announcement on Matters Concerning the Issue of Green Financial Bonds on the Interbank Bond Market
Green financial bond	PBOC	March 2018	Notice by the PBOC of Issues concerning Strengthening the Supervision and Administration of Green Financial Bonds in the Duration
		March 2018	Guidelines of Information Disclosure of Green Financial Bonds in the Duration
	PBOC, CSRC	October 2017	Guidelines for the Conduct of Assessment and Certification of Green Bonds (Interim)
	PBOC, NDRC, CSRC	April 2021	Green Bond Endorsed Projects Catalogue (2021 Edition)
Performance evaluation	CBA	December 2018	Implementation Plan for Green Bank Evaluation in the Banking Sector of China (for Trial Implementation)
	PBOC	May 2021	Plan for the Green Finance Evaluation of Banking Financial Institutions

Abbreviations in Table 1: NPC: National People’s Congress of People’s Republic of China; CBRC: China Banking Regulatory Commission; PBOC: People’s Bank of China; MEP: Ministry of Environmental Protection; MEE: Ministry of Ecology and Environment; CSRC: China Securities Regulatory Commission; CIRC: China Insurance Regulatory Commission; NDRC: National Development and Reform Commission; MOF: Ministry of Finance; NAFMII: National Association of Financial Market Institutional Investors; CBA: China Banking Association.

Notably, all three general regulatory frameworks have highlighted the importance of developing green finance in BRI countries. The 2016 Guiding Opinions state that China plans to improve banks’ green financing performance in BRI countries. The 2019 Guiding Opinions highlight the government’s plan to encourage domestic banks to provide high quality service to Chinese enterprises that invest in BRI countries, which contributes to

the building of ‘a community of shared destiny’ (paragraph 28). Banks should incorporate ESG factors into their credit decision making processes (paragraph 13). The 2020 Guiding Opinions document reiterates the importance of encouraging banks to support low-carbon projects in BRI countries as a means of combating climate change.

In accordance with these regulatory frameworks, Chinese banks are subject to a range of regulatory guidelines pertaining to green credits and green bonds. While none of these rules are tailored specifically for BRI green financing, they do reinforce banks’ green financing performance overall, thereby strengthening sustainability both at home and abroad. A detailed scrutinization of the rules is provided in the following sections.

6.2. Green Credits Lending for Overseas Projects

Chinese banks’ green credit lending is governed primarily by the CBRC (prior to 2018) and CBIRC (after 2018). An array of guidelines and regulatory documents has been issued regarding banks’ green lending.

The Green Credit Guidelines (2012) contain 30 articles. It lays the foundation for all subsequent green credit rules and remains the overarching rule that governs banks’ green lending to this day. A bank must incorporate sustainability factors into its corporate governance, create green credit lending policies, carefully analyze possible environmental and social risks posed by the borrower, and strengthen post-loan management processes to reduce risks (article 4).

Notably, the 2012 Guidelines contain a provision (article 21) devoted to overseas green loans, emphasizing the need for banks to adhere to international standards and best practices when lending overseas and requiring banks to ‘make a public commitment to adopt international standards or practices’ in their overseas projects as well as to ensure that the funded projects ‘operate substantially according to the best international practices’. Despite the absence of any detailed explanation or example of these standards, it presents the basic principles that banks should consider when they grant green loans to BRI countries.

The gap regarding international standards is largely addressed in the Notice of the CBRC on Key Performance Indicators of Green Credit Implementation (2014). A specific set of indicators used to evaluate banks’ overseas green credit lending performance provides a detailed picture of what the possible ‘international standards’ are and how to keep pace with ‘best international practices’. Among these factors are whether the personnel in charge are aware of local environmental laws, have risk management experience, and are capable of making proper judgments; how environmental risks are managed; whether commitments to international standards are made; how international good practices are understood and applied; and whether a qualified independent third party has been involved to assess the project’s environmental risks. Examples of ‘international standards’ include the Equator Principles, the UN Global Compact, the United Nations Environment Programme (UNEP) Finance Initiative, and the UNEP Statement by Banks on the Environment and Sustainable Development.

The Guiding Opinions on Regulating Banking Services for Enterprises Heading Overseas and Strengthening Risk Prevention and Control (2017) is a framework document that requires banks to increase their business risk-control capabilities when financing domestic enterprises’ FDIs, particularly in BRI countries. A number of risks, including environmental and social risks, must be prudently managed. Banks should refer to international good practices when making loan decisions, be attentive to possible environmental and social risks associated with the financed projects, closely monitor the financed projects throughout the loan lifecycle, and ensure that clients comply with the host country’s environmental laws. Banks must maintain dialogue with local stakeholders, including local residents and non-governmental organizations (NGOs), regarding environmental and social issues. This is the first comprehensive document to focus specifically on improving banks’ overseas lending performance, and is significant in that it integrates ESG factors into banks’ overseas lending practices. Its main shortcomings are similar to those of the GIP in that it lacks practical details for the banks to follow and has no legally binding effect.

6.3. Green Financial Bonds Issuance and Reports on Use of Proceeds

Under China's bond regulatory regime, a bank must obtain PBOC approval prior to the issuance of any financial bonds, including green financial bonds. For this purpose, a bank seeking to issue green financial bonds must first comply with the PBOC's general rules for the issuance criteria and procedures of 'normal' financial bonds.

A set of tailored rules concerning green financial bond issuance is further provided in the Announcement on Matters Concerning the Issue of Green Financial Bonds on the Interbank Bond Market (2015). A green bond prospectus must provide information, in addition to the normal contents of a conventional bond prospectus, about the types of green projects in which the proceeds are to be invested, the selection criteria for those green projects, the decision-making procedures for selecting green projects, the environmental impact goals of investing in those green projects, and the plan for proceeds management and custodian policies. The bank must provide the PBOC with a commitment letter stating that the funds raised will be used only for green projects.

As regards offshore issuance, banks seeking to issue offshore green financial bonds must obtain approval from both the PBOC and the NDRC. Notably, the PBOC has recently revoked an outdated rule with respect to financial institutions issuing RMB bonds in Hong Kong ('dim sum bonds') in order to simplify the process of Chinese banks issuing offshore financial bonds [148]. Although the revocation is not geared specifically toward offering green financial bonds, it could assist Chinese banks in connecting with global ESG investors to raise funds by issuing offshore green financial bonds, the proceeds of which could be allocated to green infrastructure projects both domestically and in BRI host countries.

Following the issuance of green financial bonds, banks must routinely report to investors, in addition to their regular reporting obligations, on how the proceeds from the bonds are being used to finance green projects. As per the PBOC's 2018 Guidelines, a bank must use the PBOC's template to prepare its quarterly and annual reports, emphasizing the use of proceeds during the reporting period and any anticipated or actual environmental benefits of the project. Banks should provide investors with examples of green projects they have financed as well as any environmental pollution incidents or environmental law violations that occurred during the financing of such projects. NAFMII, which is China's self-regulatory organization for the OTC bond market, has recently reiterated the importance of banks following the 2018 PBOC Guidelines for the disclosure of reports to bond investors [149].

In order to improve reporting quality and ensure that proceeds from green financial bonds are only used for financing eligible green projects, the PBOC and the NAFMII are tasked with supervisory duties pursuant to the PBOC's 2018 Notice. Inspections of banks focus on determining whether the financed projects are truly green, how banks select those projects that are to use bond proceeds, whether the proceeds of the bonds are under the custody of a custodian, and whether the goals of reducing environmental impact have been met.

As such, banks are motivated to ensure that they leverage their green bond proceeds on carefully selected green projects and to make sure that their reports on the use of the proceeds are of a high standard. Such efforts enhance transparency, increase the appeal of green bonds, and boost ESG investors' confidence, which in turn can have a positive effect on banks' ability to raise private capital to finance green projects both in China and in BRI countries.

6.4. Green Bond Standard

Green bonds differ from conventional bonds in that the proceeds must be used for environmentally sustainable projects. For banks planning to issue or underwrite BRI-themed green bonds, it is imperative to convince investors that the project to be financed is truly sustainable and that there is no risk of 'greenwashing'.

To reassure investors, the issuer can disclose a report on the use of the proceeds, however, merely reporting such information is not sufficient, as it might be difficult or

too technical for investors to analyze whether a ‘green project’ financed by bond proceeds as detailed in the issuer’s report is actually beneficial to the environment as stated by the issuer.

On this issue, one cost-efficient and effective way to prove green bonds’ sustainability is to subject them to a reliable green bond standard [56,57]. Among the most commonly used standards globally are the Green Bond Principles of the International Capital Market Association (ICMA) and the Climate Bonds Initiative (CBI)’s Climate Bonds Standard. Investors can be reassured about the ‘greenness’ of a green bond which follows one of these green standards, as each of them defines rigorous eligibility criteria for projects which can be financed with proceeds from green bonds [150].

China developed its first domestic green bond standards in 2015. The latest Green Bond Endorsed Projects Catalogue (2021 Edition) was released jointly by the PBOC, NDRC, and CSRC in April 2021 [151]. It identifies 204 subcategories of green projects that qualify for debt financing with green bonds, of which many are new, thus allowing more green projects to be financed through green bond issuance. Furthermore, it manages to align with international green bond standards, although gaps remain. In general, the 2021 Catalogue speaks to China’s efforts to provide clarity for both issuers and the capital market in order to help investors identify sustainable assets with greater confidence.

6.4.1. Convergence of Domestic Green Definitions

The 2021 Catalogue is prominent for its blanket application to all green bonds on China’s onshore bond market. A harmonized green standard is imperative because China’s green bond market is fragmented, comprised of two markets (the interbank bond market and the exchange bond market, regulated by the PBOC and CSRC, respectively). There are different types of green bonds, including corporate bonds, enterprise bonds, financial bonds, and debt financing instruments issued by non-financial entities, each of which is subject to a different regulatory framework, has a different issuance procedure, and is listed in a different venue (see Table 2 below) [152].

Table 2. China’s Fragmented Green Bonds Market.

Market	Market Regulator	Bond Type	Issuance Regulator	Trading Venue
Interbank bond market	PBOC	Green financial bonds	PBOC	CIBM
		Green enterprise bonds	NDRC	
		Green debt financing instruments (e.g., mid-term notes)	NAFMII	
Exchange bond market	CSRC	Green corporate bonds	CSRC	SSE&SZSE

Abbreviations in Table 2: PBOC: People’s Bank of China; NAFMII: National Association of Financial Market Institutional Investors; NDRC: National Development and Reform Commission; CSRC: China Securities Regulatory Commission; CIBM: China Interbank Bond Market; SSE: Shanghai Stock Exchange; SZSE: Shenzhen Stock Exchange.

Prior to 2021, financial regulators developed their own green standards to regulate the green bonds within their respective regulatory ambits. These included the PBOC’s Green Bond Endorsed Projects Catalogue (the 2015 version applied to green financial bonds, green debt financing instruments, and green corporate bonds) and the NDRC’s Catalogue of Green Industries (the 2019 version applied to green enterprise bonds). The two catalogues were not entirely consistent, and therefore a project might have been listed as green in one catalogue and not in another. For instance, while nuclear power equipment and energy performance contracting were listed in the NDRC’s catalogue, they were not listed in the PBOC’s.

The 2021 Catalogue clearly specifies that it applies to all onshore green bonds. As such, all onshore green bond issuers are subject to the 2021 catalogue. A harmonized green bond standard ensures a level playing field when different bond issuers offer contracts for similar

projects. In addition, it can assist in reducing confusion among international investors concerning the standards for green bonds issued on the Chinese market, enhancing investor confidence in China's onshore green bond market as a whole.

Another notable aspect of the 2021 Catalogue is that it is essentially consistent with the PBOC and CBIRC's green credit standards regarding the types of projects that are eligible for green loans [153]. As banks frequently use the proceeds from green financial bonds to lend to green projects, this convergence of green standards between credit lending and bond issuance can further reduce investor skepticism.

6.4.2. Alignment with International Green Bonds Standards

The 2021 Catalogue is significant in that it aligns with international green bond standards, thus further enhancing the credibility of Chinese issuers' green bonds.

First, the 2021 Catalogue excludes fossil fuel projects from its taxonomy. In previous green bond catalogues, both PBOC and NDRC included 'clean utilization of coal' as eligible green projects that could be financed through green bonds. Such a practice has been subject to longstanding international criticism as an instance of 'greenwashing'. The deletion of fossil fuel projects from the 2021 Catalogue helps to increase the appeal of Chinese onshore green bonds to international ESG investors.

Second, the 2021 Catalogue incorporates the 'Do No Significant Harm (DNSH) Principle' to the benchmark international green bond standards [154]. The principle is derived from the EU's Taxonomy for Sustainable Activities, and essentially means that an economically sustainable activity that contributes to one environmental objective should not come at the expense of negatively affecting another [155]. The DNSH Principle is clearly outlined in sub-category 3.2.2 of the 2021 Catalogue, namely, the construction and operation of renewable energy power plants. Although nuclear power plants, hydroelectric power plants, and tidal power plants, among others, can produce clean energy while reducing greenhouse gas emissions, they can pose significant hazards and risks as well, such as nuclear meltdowns and the extinction of rare species. These power plants can therefore only be financed using green bonds when their construction and operation strictly follow the DNSH principle.

6.4.3. A Gap Concerning the Use of Proceeds

Although the 2021 Catalogue represents a significant advance in China's green bond development, there are several gaps remaining in the management of bond proceeds.

Major international green bond standards, such as the ICMA's Green Bond Principles [156], the CBI's Climate Bonds Standard [157], and the proposed European Green Bond Standard (EUGBS) [158], indicate that green bond issuers should allocate 100 percent of the proceeds to green projects that meet the corresponding green taxonomies.

While China has revised its green bond catalogue in order to apply it to different onshore green bonds, the rules regarding the use of proceeds remain fragmented. For banks' green financial bonds [159] and for non-banking enterprises' green debt financing instruments [160], all proceeds should be allocated to eligible green projects in accordance with PBOC's Green Bond Catalogue. In contrast, green enterprise bonds and green corporate bonds allow issuers to allocate up to 50% [161] and 30% [162,163], respectively, of their proceeds to loan repayments and working capital. This inconsistency with international standards in the allocation of proceeds may undermine foreign investors' confidence in green bonds issued by Chinese issuers.

Accordingly, Chinese banks issuing offshore green bonds ordinarily follow international standards in order to reassure foreign investors. For instance, the Hong Kong branch of the CDB has chosen to use the CBI's Climate Bonds Standard for its USD 500 million offshore green bonds [164]. While the situation for issuers of green 'panda bonds' on the inter-bank market is similar, it is more complex, as they may need to follow both Chinese and international standards to secure Chinese regulatory approval while attracting offshore institutional investors. A recent example is the New Development Bank (NDB)'s

RMB 5 billion Sustainable Development Goals Bond, which utilizes both the ICMA's Green Bond Principles and the PBOC's Green Bond Endorsed Project Catalogue [165].

6.5. External Review of Green Financial Bonds

In addition to disclosing the use of proceeds and adhering to green bond standards, banks planning to issue green financial bonds to finance BRI-related projects can label them with external verifications. Independent verifiers/reviewers can continuously monitor the use of proceeds and provide objective and impartial opinions, thus further reducing the risk of greenwashing and increasing investor confidence.

Currently, the primary regulations are the Guidelines for the Conduct of Assessment and Certification of Green Bonds (Interim) (2017). An 'assessment and certification institution' (hereinafter ACI) is responsible for determining whether green bonds comply with relevant regulatory requirements and producing a certification report (Article 2). To guarantee the credibility and quality of the report, an ACI must conduct the certification and assessment work with sufficient diligence, honesty, and integrity (Article 10). The Green Bond Standards Committee (hereinafter GBSC), which is China's green bond market self-regulatory body under the supervision of the NAFMII, is responsible for regulating the conduct of ACIs (Article 5).

As per the 2017 Guidelines, onshore green bonds can be assessed and certified both pre-issuance and during their maturity period (Article 17). In performing pre-issuance assessment, an ACI should take into account the following factors: (1) whether the green project to be financed complies with regulations; (2) the framework under which the issuer will select the green projects, manage the proceeds, and report its use of proceeds; and (3) the environmental impact of the green project to be financed (Article 19). In the post-issuance certification process, an ACI should evaluate whether the issuer has implemented the aforementioned framework and whether environmental impact goals have been met (Article 20).

An ACI can assign one of four types of assessment conclusions based upon whether a bond complies with green bond standards, namely, 'qualified', 'no discrepancies were found', 'unqualified', or 'unable to express an opinion'. (Article 29). Green bonds that have been positively certified by ACIs can be referred to as 'labelled green bonds', and are thus more trustworthy to ESG investors. By contrast, in an instance of a green bond being deemed to be 'unqualified' or 'unable to express an opinion', the issuer must take prompt action to remedy this situation, otherwise the green label will be revoked and will not be re-issued during the bond's lifespan (Article 34–38). If a green bond is designed as a 'puttable bond' and it is stipulated that the bondholders may demand early repayment in the event that the green bond label is revoked, the issuer must redeem the bond at the investor's request (Article 38). Thus, the reputational risk and the risk of early payment serve as a deterrent to green bond issuers, helping to avoid green washing.

The use of external reviews in green bond issuance is voluntary rather than mandatory. PBOC and CSRC recommend, rather than not require, applicants to submit an ACI certification report for bond issuance approval. For example, according to the Announcement on Matters Concerning the Issue of Green Financial Bonds on the Interbank Bond Market (2015), banks that seek to issue green financial bonds on the inter-bank market are only 'encouraged' to submit an independent assessment or certification opinion to the PBOC. Nevertheless, it is common for banks to use external reviews in order to reassure investors. In spite of the lack of official statistics, a study found that in 2017 all onshore green bonds listed on the interbank market were verified [166].

However, Chinese ACI certification reports are often criticized for their uneven reporting quality [167]. Banks planning to issue offshore green bonds thus usually need to acquire an international verifier's certification, as foreign investors may not be familiar with Chinese ACIs and might be wary of them.

In an effort to improve the quality of domestic ACI certification reports, in September 2021 the GBSC stipulate that it will periodically assess domestic ACIs on their qualification

to offer green bond verification services. If well-conducted, this will contribute to improving domestic ACIs' reputation on their report quality. Banks issuing or underwriting onshore BRI-related green bonds that are verified by domestic ACIs will thus be in a better position to gain international investors' trust and confidence regarding the greenness of their future green bonds.

6.6. Evaluating Banks' Green Performance

There are several regulatory instruments that can evaluate domestic banks' green finance performance in order to encourage banks' transition to green finance. A bank that has actively financed green projects will be given a higher ranking under these evaluation schemes, providing banks with additional motivation to commit to green finance.

In assessing banks' green credit lending performance, the erstwhile CBRC's Notice on Key Performance Indicators of Green Credit Implementation (2014) established a complex set of quantitative and qualitative indicators. Qualitative indicators cover, e.g., inclusion of green credit lending goals in corporate governance and establishment of green credit policies, while quantitative indicators focus on the amount of green credit lent. The CBRC requires banks to provide evidence on each of the indicators, and expects banks to submit an annual self-evaluation report to CBRC on their accomplishments of the green credit indicators. The China Banking Association, which works as a self-regulatory body for the banking industry under the supervision of the CBRC/CIBRC, is responsible for evaluating bank's self-evaluation reports and determining whether a bank qualifies as a 'green bank'. Banks are ranked by their green credit lending performance, and the results of such rankings are reflected in the CBIRC's 'CAMELS+' based regulatory ratings for banks [168].

A review of banks' performance on using the proceeds of green financial bonds is essential. The provincial and local branches of the PBOC and NAFMII are responsible for supervising banks' performances in proper use of proceeds. PBOC quotes the supervisory results in its quarterly macro-prudential assessment (MPA) of banks and in its determination of whether a bank is eligible to conduct certain financial market businesses.

In spite of the effectiveness of both evaluation regimes in motivating banks, neither provides a truly broad and comprehensive assessment. CBA evaluations focus only on green lending, whereas PBOC and NAFMII evaluations focus exclusively on compliance levels in the use of proceeds. Other activities, such as the underwriting of green bonds and the holding of green bonds as assets, are not subject to either regimes.

The PBOC's Plan for the Green Finance Assessment of Banking Institutions (2021) represents a significant advancement. Under this plan, the evaluation of banks' green performance is expanded to green assets, green investments, green leasing, green trusts, and green wealth management, thus providing for a more comprehensive picture. The PBOC will perform quarterly evaluations of 24 domestic major banks, including all policy banks and the 'big four' commercial banks, which are the institutions leading the way on BRI green financing.

Under the evaluation system, four equally weighted quantitative indicators account for 80% of the score: the share of green finance in the total business mix, the share compared to other participating banks, the year-on-year growth rate of the outstanding value, and the share of risk exposure. The 'green finance share' is calculated equally based on the bank's credit balance for green loans and the amount of green bonds that it holds. Qualitative indicators, which contribute 20% of the score, include how a bank has performed in implementing central and local governments' green finance policies (30%), how it has implemented its internal green finance policies (40%), and how it has actually financed green industries (30%). In particular, a bank's issuance and underwriting of green bonds and how it has financed domestic and overseas green projects will be examined.

As to incentives for banks, a bank's green finance performance will be incorporated into the PBOC's quarterly macro-prudential assessment (MPA) ranking of domestic banks, and a higher ranking will benefit the bank in obtaining PBOC approval for issuing financial bonds, receiving PBOC re-lending funds, and having a favorable deposit insurance pre-

mium rate [169]. PBOC will share its ranking results with the CSRC, which will refer to them when assessing banks' IPO or capital increase applications [169]. Notably, the PBOC's assessment is not intended to replace previous evaluation regimes; rather, it is intended to convey a broader understanding of banks' overall green performance. Banks should continue to submit annual self-evaluation report to the CBIRC on green lending as well as to disclose the use of the proceeds of their green bonds to investors.

Overall, the above regulatory evaluation regimes will serve as a strong motivation for banks. It can be anticipated that a bank is likely to receive a better ranking provided that it has enhanced its ESG risk management processes in overseas green credit lending, prudently used the green financial bonds proceeds to fund BRI green projects, issued and underwritten more BRI-themed green bonds, and purchased more green bonds as assets. Accordingly, banks may be incentivized to improve their green finance performance in BRI countries.

7. Policy Suggestions for Financing a Greener BRI

The Chinese government has actively fostered green finance development through a variety of regulatory mechanisms. However, as the discussion above indicates, that there are several significant weaknesses. Unless effectively addressed, these weaknesses may hinder the BRI's green transition.

Following the analysis in the preceding sections, there are several policy recommendations that may further improve Chinese banks' green performance and their capacity and ability to raise funds for green BRI projects.

7.1. Introducing 'Green' Provisions to the Commercial Bank Law

At present, nearly all green finance rules for banks are established at the ministry level. Except for the rules that govern green financial bond issuance, which are mandatory for banks when applying to issue green financial bonds, other regulatory instruments represent only 'soft law' and do not carry the same binding effect as legislation. While banks are often highly motivated to comply with regulatory instruments, soft law has been found to be less sufficient, and cannot be considered as a legal basis for penalizing banks that fail to implement green finance in their loan lending practices (such as lending to pollution-producing projects) [23,37,170]. This paper thus proposes that banks should be legally obligated to conduct business in a sustainable manner.

However, the latest draft revision of the Commercial Bank Law, released in October 2020 for public comment [171], does not include any provisions concerning green finance. The only provision that would possibly apply to green finance is Article 51, if interpreted broadly: 'Commercial banks should adhere to the principles of risk control and serving the real economy, conduct their business in compliance with the law, fulfil their social responsibilities and continuously improve their management'. It is unclear, however, what these social responsibilities are and whether they include environmental concerns. Moreover, the draft revision does not mandate that banks consider environmental risks when providing credit to clients or provide for any penalties for financing projects with negative environmental impact.

Therefore, it is imperative that 'green' provisions be added to the draft law. It should be mandated that banks integrate ESG considerations into both their domestic and overseas lending practices, that they adhere to the green bond standards when issuing onshore and offshore green financial bonds, and that they be penalized for any environmental pollution resulting from projects they have financed both at home and abroad. As the Commercial Bank Law is the primary legislation governing the banking industry, adding green provisions, particularly a penalty provision for funding pollution-producing projects, could greatly pressure commercial banks to pursue green financing.

There will, of course, be additional obligations on banks if a new mandatory provision is incorporated in the proposed law. In order to avoid legal liability for non-compliance, banks may require additional expertise and resources to investigate the potential environ-

mental impacts of loan applications and to carefully scrutinize the funded projects in the post loan stage [172,173]. Banks will have to bear additional costs of communication in BRI projects, as these are located overseas and often require banks to communicate with local stakeholders using a foreign language. Banks' internal audit systems will have to be updated regarding ESG issues [174]. Nevertheless, this study proposes that cost-benefit analyses should be viewed in a broader perspective, that is, that the green transition is fundamental to the BRI's success and is now the Chinese government's policy. For Chinese banks that engage in overseas lending in BRI host states, compliance with the law would be less costly than project failure under the threat of international and/or local criticism. Strict legal provisions and law enforcements on environmental misconduct can improve banks' credibility and convince ESG investors, particularly foreign investors, of the greenness of their green assets. This will assist banks in selling green financial bonds and contribute to a sustainable BRI.

7.2. Mandating Environmental Disclosure for Banks

The GIP has proposed that its member financial institutions abide by the principle of disclosing environmental information in BRI investments. For Chinese banks participating in the GIP, a voluntary commitment is made to disclose environmental information about the projects they finance in BRI countries.

The GIP, however, is merely a manifesto for good conduct and does not carry any legal effect. A key element of enhancing transparency on green finance performance is the requirement that banks mandate environmental information disclosure.

Accordingly, the 2016 Guiding Opinions proposed that 'China will gradually implement a mandatory environmental disclosure regime for listed companies and bond issuers'. As previously elaborated in Section 6.3, banks already bear several reporting duties. While several banks have already provided additional environmental information to investors, the format and content of these disclosures may vary widely, from specific reports on green finance performance ('green finance reports' published by ICBC, for instance [175]) to the integration of green finance aspects into their annual reports or CSR reports. Furthermore, the information varies in terms of the degree of detail provided.

With respect to the content disclosed, it is noteworthy that the PBOC recently issued Guidelines for Financial Institutions Environmental Information Disclosure (JR/T 0227-2021), which is a national financial standard applicable to commercial banks and several other financial institutions. Instructions are provided on what environmental information shall be disclosed, and subject financial institutions are encouraged to annually disclose environmental information. Although the Guidelines are not a mandatory requirement *per se*, according to reports they represent a step forward towards a mandatory environmental disclosure policy for banks [176].

In addition, mandatory environmental disclosures are a recent international trend; the United States Securities and Exchange Commission (hereinafter SEC) has proposed rules under the heading of 'the needs of investors and issuers' to enhance and standardize climate-related disclosures for investors. These would be applicable to all public companies, including financial institutions [177,178]. The SEC claims that the proposed rules will help investors to understand the risks of climate change and hence to make better-informed decisions [179].

China may face a 'regulatory competition' to attract international investors as a result of these recently proposed US rules. As such, China must establish a mandatory disclosure requirement for banks on the environmental impacts of their business activities at home and abroad. In addition to increasing transparency, this will enable investors to compare banks based on their green performance. Chinese companies that have infrastructure projects in BRI countries should provide creditors with relevant environmental information in order to assist banks in gathering environmental data, as it has already been observed that lack of environmental information from debtors can negatively impact banks' implementation of green credit policy [180,181]. An external audit of banks' environmental disclosures is

recommended as well, in order to avoid risks related to moral hazard and greenwashing and to reduce related misconduct [182].

For banks, the introduction of mandatory environmental disclosure will inevitably lead to higher compliance costs. Apart from expertise and resources, the preparation of disclosure documents requires efforts to scrutinize the information provided by loan clients. In addition, mandatory environmental disclosure can provide valuable signals to the capital market [183,184], and disclosure of negative environmental information, such as lawsuits, legal penalties, and environmental spills that are significant market events, can negatively affect the stock price of listed commercial banks [185–187]. Mandatory environmental disclosure will therefore further strengthen banks' incentives to carefully assess the environmental risks of their borrowers in order to prevent potential environmental adverse effects, as banks are obligated to disclose these to investors.

7.3. Developing a Mutually Recognized Green Bond Standard

China must continue to align its green bond standard with international standards. This paper proposes that Chinese financial regulators must create a unified set of rules for the use of proceeds from different green bonds, requiring that 100% of proceeds be allocated to green projects. This corresponds with Freeburn [56] and Saravade et al. [57]'s observation on the impacts of a harmonized green standard. While unifying the rules about the way in which green bond proceeds are to be used may limit bond issuers' flexibility in using raised funds, in the long run this will have a positive impact on the market by improving investor confidence. China thus has a great opportunity to raise private capital for the greening of the BRI.

Moreover, China must facilitate the mutual recognition of its green bond standard with international counterparties, thereby reducing potential obstacles that Chinese banks and companies might encounter when conducting cross-border economic activities. China has already taken a major step forward in this regard. At the UN COP 26 in 2021, a draft of the EU-China Common Ground Taxonomy (CGT) was proposed for public comment [188]. It compares China's 2021 Catalogue and the EU taxonomy on sustainable activities, identifying seven macro-sectors and 55 economic activities which are included in both taxonomies [188]. The CGT represents the first international attempt to compare both taxonomies in an attempt to mitigate their fragmentation [188]. Although the CGT is not a legal document or intended as such in either China or the EU, it can serve as a useful reference for financial institutions, enterprises, and investors in both China and the EU for determining whether a project qualifies as a sustainable project [188]. For Chinese banks, offering green financial bonds to finance CGT-covered BRI projects would provide further assurance to European investors.

Greening the BRI will be easier if China can negotiate with the other BRI countries to have the CGT or a similar green taxonomy recognized by these countries. This may require China to take steps to revise bilateral investment agreements it has signed with those BRI countries. While common ground on what constitutes a green project between China and BRI countries might not be easy to achieve, it is worthwhile, as it can be used to reduce possible legal/regulatory tensions involving China-funded infrastructure projects. Additionally, it can offer Chinese enterprises guidance to decide which BRI projects are worthy of financial support through green loans provided by Chinese banks.

7.4. Stimulating Institutional Investors to Buy More Green Bonds

In order to assist banks in raising more private capital for green BRI projects, domestic and international institutional investors need to be encouraged to purchase more green financial bonds.

As previously observed, 24 domestic major banks are now being evaluated by the PBOC for their green performance; a key indicator in this evaluation is the amount of green bonds they hold as assets. As banks represent the largest group of investors for green bonds [189], their evaluation will encourage those banks to make a significant addition

of green bonds to their asset holdings. If the PBOC can expand the scope of banks being evaluated, more banks will be motivated to purchase green bonds, which in turn will assist the issuing banks in raising capital for green BRI projects. However, banks holding green bonds as collateral may be subject to various risks, including normal liquidity risk [190] as well as more specific risks such as greenwashing and climate-related risks [191]. Therefore, banks will have to carefully select these green assets. Nevertheless, an increasing level of mandatory environmental disclosure requirements can reduce information asymmetry and related risks of greenwashing, thus enabling institutional investors to make more informed investments.

Apart from banks, other domestic institutional investors should be encouraged to purchase more green bonds. In 2018, the Asset Management Association of China (hereinafter AMAC), the self-regulatory body of the asset management industry, issued the Guidelines for Green Investments (Interim). Asset managers of publicly and privately offered securities, investment funds, and wealth management products are encouraged to invest in green enterprises, projects, or assets. A fund manager creating a green securities investment fund should carefully choose the available green assets based on, e.g., the Green Bond Endorsed Projects Catalogue. It is anticipated that asset managers will submit annual self-evaluations of their green investment activities to the AMAC. As of 2020, 25 out of 37 public fund management companies had created green-themed products according to AMAC reporting. This can assist banks in financing more green projects both at home and in BRI countries, as well as in fostering a deeper understanding of green finance among investors who hold shares in green asset management funds. Nevertheless, institutional investors are encouraged, not obligated, to invest in green assets; therefore, asset managers may make their own choices according to market demands.

As for foreign institutional investors interested in green bonds on China's onshore market, it is imperative that the market be further 'opened up' to offshore investors. Despite various measures taken by regulators in recent years to enable foreign investors to enter the onshore market, foreign investors held only 3.5% of assets on the interbank bond market as of the end of 2021 [192]. This requires further reduction of barriers in order to facilitate foreign investment flows into green fixed-income products.

China has already managed to gradually open its onshore bond market. There have been several regulatory reforms, including the launch of 'Bond Connect' in 2017 to enable international investors to trade in the mainland bond market through the Hong Kong Monetary Authority's Central Moneymarkets Unit (CMU), the launch of 'CIBM Direct' in 2020 to enable foreign investors to trade bonds in the interbank market directly [131], and the merger of two foreign investment schemes, QFII and RQFII, in May 2020, which lowered entry thresholds and simplified procedures for foreign institutional investors accessing China's bond market [193]. In addition, in October 2021 China extended its tax-preferential policies to overseas institutional investors, who can thus continue to enjoy an exemption from corporate income tax and value-added tax on bond interest gains from investment in mainland China's bond markets until the end of 2025 [194]. Further opening of the Chinese bond market will enable more international institutional investors to access onshore green bonds, including green bonds for BRI projects.

8. Conclusions and Final Remarks

In this study, we investigated China's green finance laws, regulations, and soft law in order to determine whether any flaws exist that might hinder the green BRI transition. Based on a detailed and comprehensive legal/regulatory text analysis, this study reveals that the applicable green overseas lending guidelines' lack of legally binding force, insufficient environmental disclosure requirements, and fragmented rules regarding the use of green bond proceeds are the primary weaknesses. These weaknesses are detrimental to the reputation and credibility of Chinese banks among international ESG investors, thereby compromising banks' ability to raise private capital to meet the enormous funding needs of BRI infrastructure projects. As the ambitious plan for the green transition of the BRI

requires a steady and substantial funding stream, it is imperative that banks further boost investor confidence as a means of garnering additional private investment.

This paper therefore proposes several suggestions. First, the Commercial Bank Law should be revised to incorporate green provisions into the law's context. Second, mandates should be introduced requiring banks to disclose information pertaining to environmental risks associated with their activities. Third, all green bond issuers should be required to place 100% of green bond proceeds into eligible green projects. In order to provide foreign investors with additional assurances about the sustainability of Chinese green bonds, it is essential that China continue to work with international counterparties and BRI countries to build common ground on green bond standards. Fourth, it is necessary to encourage domestic institutional investors to purchase onshore green bonds, as well as to provide access to foreign institutional investors.

Although the above recommendations may increase compliance costs for banks, under a strengthened law the banks' green performance can be greatly improved. A positive outcome would be the enhancement of Chinese banks' reputations among ESG investors, thus increasing their capacity to finance green BRI projects. From a broader perspective, improvements in sustainability in BRI countries can contribute to the achievement of the UN SDGs as well as to China's ambitious goal of building a 'community with shared future for mankind'.

While this study is preliminary, it provides a critical framework for future research in green finance, albeit with certain limitations. As the purpose of this study was to review current legal and regulatory provisions in order to find deficiencies and formulate policy recommendations, it is restricted to a textual analysis, without undertaking an empirical investigation into how existing green financing rules have de facto influenced banks' green financing activities in BRI member countries. Furthermore, this study has been confined to the context of Chinese green finance laws and regulations, and does not include comparative research on international green finance legislation. Nevertheless, it can serve as the basis for further empirical study of BRI and green finance issues, as well as for comparisons of green finance legislation and regulations at the international level.

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