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Green Finance

Perspectives in Sustainable Finance Instruments

ISMAIL SIDDIQUI, NAVANEETH M S

Green bonds are financial instruments that deliver both returns and environmentally positive outcomes. They can be a key part of strategies to incorporate climate action into financial decision-making and help developing countries meet their Paris Agreement and Sustainable Development Goal obligations. While their total volume increased, their effectiveness in promoting sustainability—especially in post-pandemic recovery—looks questionable.

The development agenda received a critical rethinking as it became clear by the late 1980s that the pre-existing models of industrialisation prescribed to the “third world” meant deep neglect of the environment. If the industrialisation path of the West was adopted as the recipe for development by all nations, five or six planets would be required to act as mines and waste dumps (Sachs 1992). Therefore, it is clear that the rapid expansion of the post-war economy, financed through Bretton Woods Institutions is not a model path; rather, it ought to be seen as an aberration.

The role of financial institutions is increasingly being recognised in this domain as a way to redeem the perceived environmental disregard. Fossil fuels still dominate global energy investment, threatening the expansion of green energy to meet climate and clean air goals which, combined with the reluctance to shift from pro-coal policies by several developed and developing economies, keeps the goals of cutting CO₂ emissions at odds (Figure 1). Financial institutions are crucial for any type of infrastructural projects and they lean more towards the conventional energy domain because of

the existence of multiple risks involved with new technologies, not to mention the low initial rates of return.

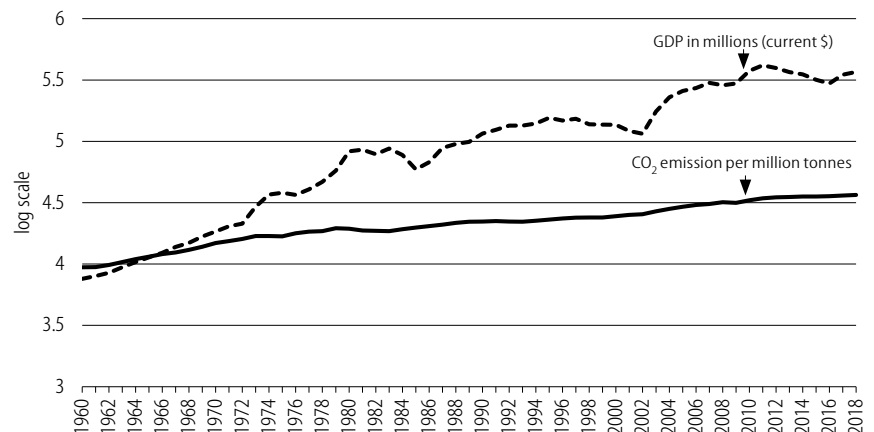
Motives behind the Push

In order to go ahead with attaining the 2030 Sustainable Development Goals (SDGs), there is a major push required for green projects and boosted funding for environment-friendly investments through instruments like green bonds, green banks, carbon credits, community-based green funds, etc, collectively called “green finance.”

Green finance predominantly consists of financial instruments like debt and equity. While equity financing is the investment in the company stock for an ownership interest called stocks or shares, debt financing is used at later stages of development of a company to raise funds for its projects. Debt and equity funds form the basic vehicles of investment in environment-related finance (Krushelnyska 2020).

As less than 15% of required capital flows into environmental conservation, a large chunk of it is contributed by philanthropic entities rather than by corporations leading to a financial gap of \$70 billion in the climate finance accounting (Krushelnyska 2020). Leveraging healthy ways to conserve healthy ecosystems and funding projects in renewable energy and energy efficiency is imperative, as green finance is the need of the ailing world. But in reality, what this environment-friendly financing measure does is the reduction of the perception of risks to encourage investments for

Figure 1: Global Emissions versus Global GDP (from 1960)



Source: Authors' computation from World Bank and Global Carbon Report.

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environment-friendly projects and the internalisation of the environmental externalities. Another risk that the same holds is that of “greenwashing”—the practice of diverting green bond revenues to projects or activities that have marginal or negative environmental benefits.

Sustainable growth agenda still seems too ambitious as the current trajectory of fossil fuel usage in the world threatens to increase the planet’s temperature by 2.7 degrees celsius above the pre-industrial level (Figure 2). Though a commitment to keep the global temperature below 2 degrees celsius was agreed upon under the Paris Agreement in 2015, governments are yet to act upon creating a low carbon energy system.

An Uncertain Path

Many ills ail the green finance sector, which hamper it from fighting climate change effectively. State-controlled Chinese coal power plants or oil and gas production units in West Asia cannot be influenced by fund managers who extend their influence to only a minuscule part of the economy as many emissions occur outside the big private businesses (*Economist* 2020).

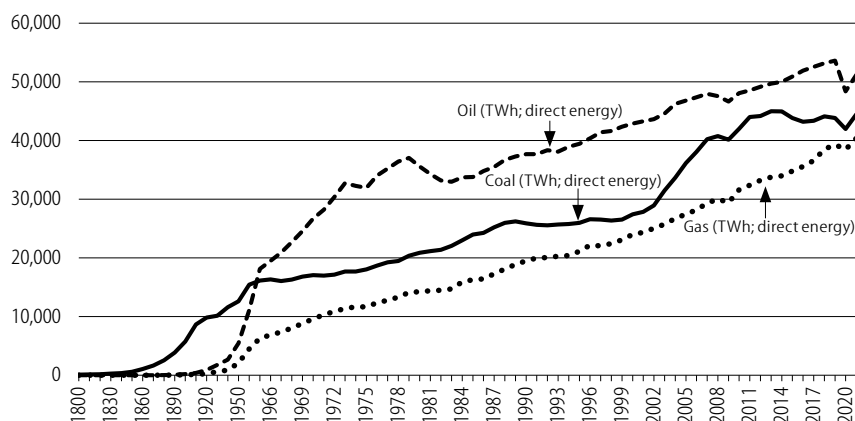
On the other hand, climate stress tests and penalising banks for their lending to vulnerable or environmentally harmful projects by some bank regulators hoping to cut emissions are also not helpful. Rules on carbon emissions remain mostly unchanged and only a fraction of their assets are invested in fossil fuels or detrimental projects. The funds required for clean and renewable energy and

Table 1: Yearly Green Bond Volume by Currency (\$)

Year	Total Green Bond Volume (\$ billion)	Europe	US	China
2007	0.807	0.807	-	-
2008	0.414	-	-	-
2009	0.909	-	0.48	-
2010	4.3	0.003	0.29	-
2011	1.3	0.051	0.665	-
2012	3.5	0.748	0.585	-
2013	11.3	4.3	5.3	-
2014	36.8	16.8	11.2	0.208
2015	44.5	15	22.5	0.095
2016	84.5	20.6	38	17.7
2017	158	56.1	71.2	15.6
2018	171.2	66.4	55.3	22
2019	258.9	108	82.4	19.9

Source: Climate Bond Initiative.

Figure 2: Global Fossil Fuel Consumption



Source: BP Statistical Review of World Energy.

infrastructure, especially in the developing regions, are yet to be realised which would be conducive to keep temperatures within 2 degrees celsius of pre-industrial levels. Table 1 is a stark reminder of the disparity when it comes to the bonds issued with the United States (us) and Europe taking a major share and China coming at third place. With very little investment being raised from the developing world (which are also assumed to take the worst hit with climate change), the sustainability of the initiative is under doubt and shows that the developing countries are yet to jump on the green bandwagon. There exists a significant gap with the current issuance being around \$300 billion and the expected requirement is up to \$3 trillion in emerging markets, in order to stay in tune with the Paris Agreement (UNCTAD 2014).

One major issue with green financing is measuring the carbon footprint of projects. It is difficult to get corporations to disclose their total net carbon footprint (including emissions of products and supply chains) (*Economist* 2020). Objectively tracking carbon performance and comparing it with others is an illusion because an honest disclosure is elusive, with dubious tactics and opaque records aiding to hide the fact that many portfolios that claim to be climate-friendly are often involved with big polluters as they contain their securities. Another major issue that remains is that of taxonomy of the various sectors under green bonds since China has included “clean coal” from 2015 onwards, although the same is proposed to be exempted

and barred under the European Union’s taxonomy (Liu 2020).

Incentives also matter; shutting down lucrative oil fields does not carry any financial benefit to let the firms start investing in experimental energy systems. Externalities of greenhouse gas emissions are hard to measure since they are not appropriately priced into the cost of energy. Further, although green investors may carry out climate-friendly decisions for the firms, they do not carry enough weight and influence to determine the overall attitude or energy policy of the firms.

The role of the financial industry in decarbonising the economies is increasingly being recognised as institutional investors throng to invest in green finance, with 500 environmental, social and governance (ESG) funds being launched in 2020 and a lot of asset managers claim to have forced industries finance new clean projects and cut emissions (Alexander 2014). The biggest challenges that environment-friendly financing faces are the identification of the right projects, devising comprehensive plans that include the private and public sectors as well as different countries, along with proper structuring of the financing.

Major Hurdles in ESG Financing

The majority of ESG issuance must be focused on developing regions since most of the growth, here, is supported by non-green, traditional, carbon-intensive activities. Not to mention the market size and population too makes the former an optimal choice for sustainable growth. However, despite the accumulated market

capitalisation of green bonds nearing \$1 trillion, a very minimal amount of the same is issued in developing regions (Table 2) with the major exception of China (which still has a low share of 9%). One can assert there is a fair level of correlation between economic development and appetite for ESG considerations but the lack of awareness as well as contractual protection from practices like “greenwashing” remains a significant constraint. The absence of quality or relevant data from the developing regions also hampers the interest of potential investors (AIIB 2014).

There also exists market barriers that cut down the initiative further in developing countries like minimum size, currency considerations, and the high transaction costs (Banga 2018). This needs to be seen with the fact that the former has very limited access to international capital markets. Many of the projects being implemented in these regions are of small scale in nature which also reduces the incentive for investment. Finally, government priorities on policy implementation are often conflicting, with environment-friendly projects usually ending up being unpopular mandates (Obradovich and Zimmerman 2016).

Though green bonds have witnessed an upward trajectory in recent years, the advent of COVID-19 pandemic stalled the growth. Nevertheless, the pandemic has been instrumental in accelerating the issuance of sustainability and social bonds, as the private sector is helping in the recovery and response measures. The Institute of International Finance has reported that green bond issuance nearly doubled to \$500 billion in 2021 from 2020

and forecasts that by 2025, annual issuance could be as high as \$1.2 trillion (Tiftik et al 2022). The focus is also shifting from a narrow “environment-based” financing towards a broader “sustainability-based” approach in green financing. The article by McDaniels (2020) points to a “surge on social issues” with regard to ESG. However, a lack of standardisation and concrete directives dilute the possibility of predicting their long-term impact. The extent of change in the hue of ESG via social bonds, in general, is a smaller issue compared to the much-appreciated development of growing concerns over responsible investing.

Concluding Notes

The role of regulation thus becomes extremely important. The motivation of the private sector is not substantial enough to take on the initiative of bringing about the required emission cuts coupled with adequate green investments. Governments need to force firms to improve upon their disclosure. Many countries—Australia, Brazil, Canada, Denmark, France, the Netherlands, New Zealand, Norway, Sweden, the United Kingdom and others—require investors to include information on ESG aspects in their financial disclosures (UNEP 2020).

Measurable objectives are necessary to have coherence. Carbon taxes can unleash the power that the financial sector holds, as it will bestow a strong motivation upon banks and investors to move the capital from dirty industries to cleaner ones and allow for trading of carbon prices.

First, it is imperative to have an enabling environment that facilitates green financing; this includes the rule of law, conducive business climate, and a helpful investment regime. Ratification of the Paris Agreement and commitment towards the SDGs is a way to support the strategic framework for green finance and therefore boosting private capital for green investing. An explicit policy signalling is a way to incentivise the outcome. As Germany has shown in its presidency of Group of 20 in 2016,

establishing a clearly defined green agenda is decisive (Berensmann and Lindenberg 2016). This can be a step in coordinating the financial and environmental policies as well as regulation, evident by the case of China.

Second, the definition of green finance needs to be clear and transparent to prevent loopholes in greenwashing of the commitments. Rules and directions for disclosure can promote the development of green financing assets as well as capacity-building platforms (GFSG 2017). A set of principles and guidelines can help a lot in the implementation and monitoring of those policies. These principles would be coupled with regulatory and financial incentives to make the structure efficient. Climate finance and consequently a green way for development can take big leaps if the actors overcome the challenges in the path of ambitious sustainability goals and the nations cooperate to push the trajectory of green financing upward.

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Table 2: Yearly Green Bond Volume Issued in Asia (in million \$)

	2015	2016	2017	2018	2019
China	1,295	21,211	22,245	31,030	31,400
Hong Kong (China)	0	1,206	618	2,692	2,550
India	1,151	1,570	3,804	700	3,073
Indonesia	0	0	0	1,975	750
Japan	840	1,098	3,338	4,174	7,216
Malaysia	0	0	755	223	660
Philippines	0	226	150	150	1,498
Singapore	0	0	571	1,341	2,649
South Korea	0	900	650	2,077	3,576
Taiwan	0	0	172	447	1,018
Thailand	0	0	0	213	734
Vietnam	0	27	0	0	0

Source: Moody's.

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A Step Ahead in School Nutrition Programmes

The Case of Tamil Nadu

R GOPINATH, R RENGALAKSHMI

The introduction of the Chief Minister's Breakfast Scheme in government and aided schools is a timely intervention to ensure nutritious food for children aged between five and nine. The salient features of the scheme are highlighted and the potential ways to strengthen its long-term sustainability are discussed.

Tamil Nadu (TN) stepped up to an upgraded model in school feeding with the introduction of the Chief Minister's Breakfast Scheme (CMBS) in government and aided schools along with the midday meal (MDM) across the state (GoTN 2022a). This article examines the timing of the introduction of hot cooked food as breakfast, the salient features of the scheme, and potential ways to strengthen its long-term sustainability.

TN played a pioneering role in implementing MDM for schoolgoing children. The MDM scheme was first implemented in 1958 and became a universal programme in 1982. Subsequent governments have enhanced the programme by adding eggs and pulses (Swaminathan et al 2004; GoTN 2022b). Initially, it was derided as a "populist" programme, but it soon became a national model (Drèze and Sen 2013). Evaluation studies revealed that MDM improved the average attendance of enrolled students (Rajan and Jayakumar 1992; Swaminathan et al 2004). A study by the International Food Policy Research Institute found that MDM has positively contributed to the nutritional status of children, thus providing intergenerational transmission of benefits (Chakrabarti et al 2021). Drèze and Sen (2013) have described the introduction of this vital scheme and other social infrastructure facilities in

TN and attributed its success to democratic politics allied with public pressure. Therefore, school meals always play a prominent role in social infrastructure in TN.

The timing of the introduction of breakfast in the school meal programme is critical, as national and international agencies caution about growing hunger due to the COVID-19 pandemic. In addition, the report on the State of Food Security and Nutrition in the World 2022 alerted the nations about rising undernourishment and severe food insecurity (FAO et al 2022). Several Indian states rolled out various measures in partnership with the Government of India to combat hunger in response to the pandemic. Kerala was the first state to distribute food kits with 17 items along with ₹1,000 to all households, regardless of their income. Likewise, the Government of TN distributed 5 kg of rice/wheat along with 1 kg of pulses to all the households under the Pradhan Mantri Garib Kalyan Yojana (PMGKY) (Pothan et al 2020) and ₹2,000 for households with rice ration cards through the state public distribution system. During the first wave of COVID-19, different state governments distributed dry rations to all children enrolled for MDM and cooking costs in the lockdown period, starting from April 2020 (Mahendra and Indrakant 2021). Despite these measures, hunger persisted in the pandemic era, particularly among the marginalised sections of society (Sinha 2021; Borkowski et al 2021).

Salient Features of CMBS

Against this backdrop, the Government of TN recently introduced the CMBS for all the students enrolled in government and aided primary schools in Classes 1 to 5

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