

How Should the Government Encourage the Issuance of Green Bonds to Reduce Carbon Emissions of Indian Firms?

Course: Macroeconomic Policies

A policy note addressed to *Smt. Nirmala Sitharaman, Finance Minister of India*



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At the end of 2018, the World Bank reported the carbon emissions of India at 1.8 metric tons. The World Bank data also shows an increasing trend in Indian carbon emissions even though they are currently lower than the EU, and the USA. India also contributes to 7% of world emissions and this may further increase with growing industrialisation and urbanisation (PRS, 2022). Such recent upward trends in carbon emissions in India are concerning, to say the least. Carbon emissions need to be controlled and the dependence on carbon needs to be reduced to ensure that India meets its climate targets. India has pledged to reach net-zero carbon emissions by 2070, but these increasing trends present a tricky challenge to moving away from the use of carbon.

Current policy discourses addressing this issue of carbon emissions in India have been lacking on multiple fronts. The primary issue being the fact that implementation of any policy requires large amounts of capital and funding. The National Economic Survey (2020-21) reported climate funding has relied on domestic sources and that to meet its climate targets till 2030, India would require upwards of USD 2.5 trillion (PRS, 2022). According to the World Bank, the GDP of India in 2020 stood at USD 2.66 trillion which is almost equivalent to the climate funding required. Furthermore, the OECD reports that USD 93 trillion in infrastructure investment will be needed globally in the next 15 years to achieve a low-carbon future (OECD, 2017). This long-term need for finance indicates a serious need for low-cost and stable sources of capital. We believe that the potential of green bonds can be used effectively in India to provide access to necessary capital, over long periods of time.

Green bonds refer to a debt instrument that is a recent innovation in the field of sustainable finance. The funds raised by issuing these bonds are committed to be used to finance climate-friendly "green" projects. Green bonds may be issued by corporations, government entities and international institutions. The first issue of green bonds was done by the European Investment Bank in 2007. Since then, green bonds have become increasingly popular as a source of sustainable finance. In India, Yes Bank issued the first green bond for financing their renewable and clean energy projects in 2015. Green bonds represent 0.1% of total debt in India compared to 0.18% in China who is the largest issuer of green bonds (Flammer, 2020).

Why Green Bonds?

Flammer (2020) analyses the effect of issuing green corporate bonds on the company's stock prices, long-term performance and environmental performance. This paper uses data from Bloomberg on all the green bonds issued between 2007 and 2018. Using an event study design, Flammer (2020) finds that the Cumulative Abnormal Return is nil prior to the announcement of the issuance of green bonds and is on average 0.67% in the 2-day event window after the announcement and remains high thereafter. This indicates that the issuance of green bonds is perceived positively by the stock market. Tang and Zhang (2020) also show that green bonds benefit existing shareholders due to its positive impact on the stock prices. Furthermore, Flammer (2020) shows that in the two years after the issuance of green bonds, firms experienced a higher increase in the Return on Assets and Return on Equity relative to the firms that issued bonds that were not green. This implies that issuing green bonds has a positive impact on both the firm's stock prices and the firm's performance in the long term.

Flammer (2020) also shows that the environmental performance (measured by the Thomson Reuters ASSET4) of the firms that issued green bonds was higher relative to the firms that issued regular bonds by 7.3 percentage points and the CO2 emissions of the firms that issued green bonds were lower than firms that issued regular bonds by 27.7%. Flammer (2021) further shows that the issuance of green bonds leads to an increase in ownership by long-term and green investors (these are investors who make investments in companies that support environment-friendly practices). These results are consistent with a signaling argument. Firms credibly signal their commitment towards the environment by issuing green bonds. The stock market responds positively to this signal and as this commitment materializes the environmental performance of these firms improves and they attract long-term and environmentally-conscious investors. These results, however, are only significant for green bonds that are certified by independent third-parties like Sustainalytics, Vigeo Eiris, Ernst & Young, and CICERO (Center for International Climate Research) (Flammer, 2020, 2021). This means that certification of the green bonds plays a key role in establishing their credibility in the eyes of the investors and, hence, in influencing the firms' environmental and economic performance.

The average issuance amount of green bonds is larger and they have longer maturity than regular bonds which indicates that they are used to finance large-scale long-term projects which is in line with the nature of environmental and energy projects (Flammer, 2020). It is also found that the green bonds have a lower yield than regular bonds with similar characteristics (Flammer (2020); Zerbib (2019) which means that the investors invest in green bonds because they are motivated by non-monetary benefits (like helping in the fight against climate change). Another interesting feature of green bonds is that they are relatively less risky than regular bonds which makes them more attractive to risk-averse lenders. Flammer (2020) report the 30.3% of green bonds are rated triple-A compared to 8.5% for ordinary bonds.

These papers show that green bonds are an effective source of sustainable finance and is efficient in not only reducing the carbon emissions and improving the environmental performance of firms but also benefit the shareholders due to their positive impact on stock prices and improvements in firm performance. These bonds can be used to finance large-scale long-term projects due to their longer maturity and higher issuance amount on average and are a cheaper source of finance given their lower yield relative to regular bonds. Since, these bonds are generally considered safer than regular bonds, it is also beneficial for risk-averse investors with pro-environmental preferences. Therefore, the government should encourage the issuance of green bonds to reduce carbon emissions of Indian firms.

Suggestions to Promote Green Bonds in India

The motive of writing to you is to highlight the importance of green bonds in bridging the funding gap for climate change in India. To this end, we would like to propose some suggestions that we feel would improve the green bond scenario in India and thereby tap into the huge potential it presents.

The first suggestion would be the necessity for adopting a common definition of "green" from the domestic perspective (Agarwal and Singh, 2018). By doing this, the government can ensure a standardised understanding through which projects in India are classified as "green". This would help improve the awareness amongst investors about important terminologies such as green projects, green finance and green bonds which is necessary to establish investor confidence in these debt instruments as explained below. This would also help improve the certification process for green bonds as there will be a standard criteria against which the projects can be evaluated.

Secondly, investors can be motivated to invest in green bonds by implementing tax benefits for those who invest in green bonds. Agliardi and Agliardi (2019) show that by reducing the tax rate on the proceeds from green bonds, the share of green bonds in investors' portfolio significantly increases and this increase is maximal when the proceeds are tax-free. For instance, in 2016, the bonds issued by the Indian Renewable Energy Development Agency Limited in 2016 were declared to be tax-free and these bonds were immediately oversubscribed by more than five times (Agliardi and Agliardi, 2019). This indicates that by simply introducing tax benefits, at the current nascent stages of India's green bond market, the government could help to increase the confidence of the investors in this new financial tool and thereby increase the demand for green bonds significantly. A sustained increase in demand would also imply a lower cost of capital for the firms thereby further increasing the benefit from the issue of green bonds. Clean Renewable Energy Bonds (CREBs) and Qualified Energy Conservation Bonds (QECBs) launched by the US federal government offer tax credits to the issuers and exemption to the investors. Tax credit bonds implies that the issuers do not have to pay interest on the bonds, instead the investors receive tax credit. Whereas, tax exempt bonds implies that the investors do not pay income tax on interest from the green bonds they hold (so issuer can get lower interest rate). Thus, the Indian government should aim to implement analogous policies to increase the issue and take up of green bonds.

Thirdly, Agliardi and Agliardi (2019) also show that the share of green bonds in the investors' portfolio can be affected by the degree of a bond holder's concern about environmental damage. As the bond holder becomes more concerned about the environment, the share of green bonds increase. So, promotion of environmentally-conscious education among investors not only helps citizen's behave more responsibly but also raises the affinity towards green bonds as they become more environmentally concerned. Thus, the Government must focus on increasing environmentally-responsible education across the board.

Fourthly, the credibility of green bonds and ensuring low-cost, long-term, liquid markets would require that green bonds indeed increase environmental performance as that is the main motive behind issuing such bonds. Flammer (2020) finds that the environmental performance of firms issuing green bonds significantly improves relative to the firms that issue regular bonds only when these bonds are certified by independent third-parties. Keeping this in mind, we would like to suggest that the government should aim to promote independent certification as an important supply-side governance mechanism to promote the improvement of environmental performance. As Flammer (2020) also notes that this may not be the "optimal" certification mechanism but emphasizes the need for credible certification of green bonds using a combination of public and private entities. The government can, thus, set up a certification board for green bonds (perhaps even an independent board that would monitor corporate and sovereign bonds) to enhance the reliability in the certification process.

Furthermore, on the supply side of green bonds, one of the concerns that issuers have is with respect to the costs of meeting the requirements for the projects to be categorized as "green". Issuers have to keep up with the rigorous regulations in the financial markets to ensure they are legally compliant. Besides this, issuers must spend money on ensuring third-party monitoring of the use of proceeds from green bonds and also to verify the status of a "green bond" itself (OECD, 2017). These are costly activities and this is where the Government can step-in in two ways. Firstly, subsidising the monitoring costs for the issuers would help to not only incentivize the issuers to issue more green bonds, but also ensure that the climate agenda is met by better monitored use of funds for climate projects. Secondly, the Government could also aim to publish a list of credible third-party entities along with the monitoring criteria, transparent definitions and protocols that issuers can access so that the hassle for the issuer to find credible monitors is reduced. By ensuring that issuers comply to the standards of the independent third-party entity, the government also prevents issues such as *greenwashing* or false claims of environmental compliance (Ghosh et al., 2021).

The recent announcement of the Indian government to issue sovereign green bonds that will be used to finance climate-friendly projects to be undertaken by government enterprises in the financial year of 2023-2024 is novel and a step in the right direction. As we have shown above, these bonds will be successful in improving the environmental performance if they are certified by a credible third-party. Furthermore, to ensure that there is substantial demand for the bonds, the government should introduce tax exemptions for the investors and to reduce the cost of borrowing for the issuers, the government should provide tax credits.

In conclusion, we believe that green bonds can become a crucial weapon in this fight against climate change by bridging the gap between climate-finance requirements and availability in India and also globally. The government, by educating the investors and raising their level of concern towards the environment and by implementing the measures that we have suggested in this brief, can help to foster the development of the green bond market in India which will ensure the availability of funds required to finance climate-friendly projects and eventually a reduction in the carbon emissions of Indian firms.

Bibliography

- Agarwal, S. and Singh, T. (2018). Unlocking the green bond potential in india. *The Energy and Resource Institute*.
- Agliardi, E. and Agliardi, R. (2019). Financing environmentally-sustainable projects with green bonds. *Environment and Development Economics*, 24(6):608–623.
- Flammer, C. (2020). Green bonds: effectiveness and implications for public policy. *Environmental and Energy Policy and the Economy*, 1(1):95–128.
- Flammer, C. (2021). Corporate green bonds. *Journal of Financial Economics*, 142(2):499–516.
- Ghosh, S., Nath, S., and Ranjan, A. (2021). Green finance in india: Progress and challenges. *Reserve Bank of India Bulletin*.
- OECD (2017). *Mobilising Bond Markets for a Low-Carbon Transition*. OECD Publishing.
- PRS (2022). Demand for grants 2022-23 analysis: Environment, forests and climate change.
- Tang, D. Y. and Zhang, Y. (2020). Do shareholders benefit from green bonds? *Journal of Corporate Finance*, 61:101427. Environmental, Social, and Governance Issues: Emerging Markets and Beyond.
- Zerbib, O. D. (2019). The effect of pro-environmental preferences on bond prices: Evidence from green bonds. *Journal of Banking Finance*, 98:39–60.