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EMERGING FINANCIAL INSTRUMENT – GREEN BONDS

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Abstract:

Green Bonds has arisen out of the concept of "green finance" to channelise savings towards green initiatives to make more sustainable, rewarding and positive impact on the environment. Green Finance is defined as financing investments that deliver environmental benefits in the broader context of environmentally sustainable development. It is expected that green bond investment in a single year could reach $1 trillion milestone for the first time by Q4 2022. Environmental issues are becoming a serious cause of worry for the world and its people. Investments in Green Bonds could relate to environmental benefits which include, reductions in air, water and land pollution, reductions in greenhouse gas emissions and improved energy efficiency. Threat relating to climate change is one of the biggest threats being faced by the humanity. The root cause of green finance is to mitigate the impact of climate change, pollution and depletion of natural capital that threatens a country's ability to be competitive and productive. This new emerging financial instrument for green economy is not technically different but sets new conditions for making responsible investment. Green bonds are the bonds issued by the enterprise for investments in the field of alternative energy, environmentally friendly modes of transport, and effectively projects, which meet the criteria of sustainable development. Globally, the first green bond was issued in 2007 by the European Investment Bank, lending arm of EU. India entered the green bond market for the first time in 2015 with the bond issue by YES Bank for investment in renewable and clean energy projects.

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This study focuses on a comparative study of green bonds issued by various countries including India and analyses the investments made in this sector.

Emerging Financial Instrument – Green Bonds

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Introduction

In past year and a half, the challenges faced by the humanity to cope with the pandemic that has affected the lives and livelihood of billions around the world, has been unprecedented. While this has brought countless set of challenges to the authorities around the world in framing and implementing policies to mitigate the impact, it has also given us time to rethink and reflect on the way we lead our lives. It seems like forced pause to deliberate and consider several issues including that of providing a sustainable, greener and better future to our succeeding generations.

With erratic monsoons, heavy rainfalls, severe floods, cloudbursts, landslides; all of which have an impact on Climate change, India has been hit hard, causing economic and social losses in recent years. According to a report by DW in August 2021, heavy rains have increased 3 times more, since 1950s but the total precipitation has declined causing severe water scarcity for at least one month annually. Also heat waves are becoming more common with temperatures reaching above 48 degrees Celsius in 2020. Globally also the impact of climate change is being increasingly felt whether it is form of floods in United Kingdom, heatwaves and wildfires in Canada and Australia.

The threat of climate change is real and is biggest threat staring at the humanity. The dangers are imminent and can be catastrophic, if no action is taken. Many of countries are vulnerable to climate change. It is therefore imperative that we take remedial actions even in these difficult times. While we can't undo the mistakes of the past, we can make things right by making systemic changes that will stop the planet-warming and help us adapt to new conditions and create a world of peace, prosperity and equity.

The economy and financial system cannot remain immune to the effect of this climate change. As the climate change affects the environment, lives and livelihoods, it has an impact on the financial risk being borne by the financial institutions and the entire financial system. Climate related financial risks can impact the financial sector through 2 broad ways:

1. Physical risk resulting from economic costs and physical losses resulting from severity, intensity and frequency of the extreme changes in weather events and its long-term impact.
2. Transition risks which result from compliance and other costs arising during the transition to a sustainable economy with low-carbon emissions. The transition cost will be higher in the short term but they are likely to be lower in the long-run as it makes the financial system more resilient to impact of climate changes.

The financial firms and banks are also exposed to various other types of risks arising out of the climate-related changes like underwriting risk, reputational risk and strategic risk. The financial industry has a role and responsibility to help and develop new financial instruments to channelise the savings towards greener initiatives. This in broader context is referred to as "Green Finance".

Green Finance

Green Finance is fast developing as a priority way of borrowing and lending globally and in India. Green Finance refers to the financial arrangements that are specific to the use for the projects that adopt the aspects of climate change. It can be defined as financing of investments that deliver environmental benefits in the context of sustainable development of the environment. It will include an array of loans, debt instruments and investments that are used to encourage the development of green projects which will minimise the impact on the climate. IFC Climate Policy team has developed a new approach to assess and track green finance, focusing on banking sector, on the basis of the study carried out by G20 Green Finance Study Group.

Green Bonds

One common green finance instrument is the "Green Bond". World Bank has defined Green Bond as a debt-security that is issued to raise capital specifically to support climate-related or environmental projects. Thus, the specific use of the funds raised through Green Bonds distinguishes it from regular bonds, which means that the investors will also assess the specific environmental purpose of the projects for which the investment is being made in

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addition to other factors like price of the bond, its coupon rate, maturity period and quality/ grade of investment.

Apart from this, there are varied approaches and methodology for identifying and classifying Green bonds by different organisations.

Bloomberg defines green bonds as fixed income instruments for which the proceeds will be applied towards projects or activities that promote climate change mitigation or adaptation or other environmental sustainability approach. According to Bloomberg, green bonds can take the form of corporate, supranational, government, municipal and project notes as well as Asset-Backed Securities (ABS) and Mortgage-Backed Securities (MBS).

ICMA Group has defined Green Bonds, as any type of bond instrument where the proceeds or an equivalent account will be exclusively applied to finance or re-finance in part or in full, new and /or existing eligible green projects. ICMA has laid down the Green Bond Principles (GBP), a voluntary process guideline which are recommendatory in nature. GBP recommends a clear process and disclosure norms for the issuers, in order to provide transparency, accuracy and integrity of the information disclosed to the investors, banks, underwriters, arrangers, placement agents and others. These are laid out using four core components:

1. **Use of proceeds:** This is most important component as it deals with the utilisation of the proceeds of the bonds for eligible green projects which contribute to objective of environment sustainability such as climate change mitigation, its adaption, natural resources conservation, biodiversity conservation and pollution prevention and control. GBP underlines some project categories under these principles, which are as follows:

   Figure 1: Green Projects Categories

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Source: Prepared by the researcher based on data from GBP

2. Process for project evaluation and selection: the issuer of the Green Bond must clearly articulate and inform the investors of the environmentally sustainable objectives of the Green Projects. The issuer must also specify the process by which the project is determined as a Green Project, so that investor can take a considered decision.
3. Management of Proceeds: The net proceeds from the issue of the Green Bonds must be credited to a sub-account and all credits to this account and allocations to the eligible Green Projects must be tracked properly using an internal tracking method and also verified by an external auditor.
4. Reporting: The annual report prepared by the issuer must provide information relating to the list of projects to which Green Bond proceeds should have been allocated, actually allocated and their expected impact.

ICMA has identified that currently there are four types of Green Bonds emerging in the bond market. These are:

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1. Green securitised bond: A bond collateralised by one or more specific Green Projects including but not limited to covered bonds, ABS, MBS and other structures but aligned with green bond principles. The first source of repayment is generally from the cash flow of assets.
2. Green Project Bonds: A bond issued for a single or multiple Green Projects for which the investor has a direct exposure to the risk of the projects with or without recourse to the issuer, again aligned to green bond principles as laid down by ICMA
3. Green Revenue Bonds: A bond with a non-recourse to the issuer of the debt in which the credit exposure in the bond is to pledge cash flows of the revenue streams, fees, taxes etc, and whose use of proceeds go to related and unrelated Green Projects.
4. Standard Green Use of Proceeds Bonds: A standard recourse to the issuer type of debt obligation with an alignment to Green Bond principles.

World Bank Green Bonds supports projects which meet the specific criteria for development activities that help to lower the global carbon emissions. World Bank projects are designed to reduce poverty and improve local economies, but the Green Bonds issued by World Bank specifically focuses on tackling climate change issues in developing countries.

Green Bonds as Emerging Financial Instrument -An Analysis

Green bonds issuance reached an all-time high of UD$ 1.524tn by the first half of 2021. Out of this, $435bn was issued in the year 2021 itself. While supply has increased, demand for green bonds is growing all the time and from a variety of sources. In terms of the geographical spread Developed Markets (DM) share is increasing and stood at 80% in 2020 as compared to 73% in 2019 due to issuance of Green Bonds by European Countries. Emerging Markets (EM) share dropped to 16% and Supranational share was almost constant at 4%. In terms of the number of deals as well DM accounted for 83% of deals in 2020 a slight decrease of 3% from 2019. EM share in terms of number of deals accounted for 13% in 2020 a slight increase of 2% from the year 2019. Supernational share in number deals increased by 1% in 2020 to 4%.

The following chart shows the number of deals in Developed Markets, Supranational and Emerging Markets from 2014 onwards.

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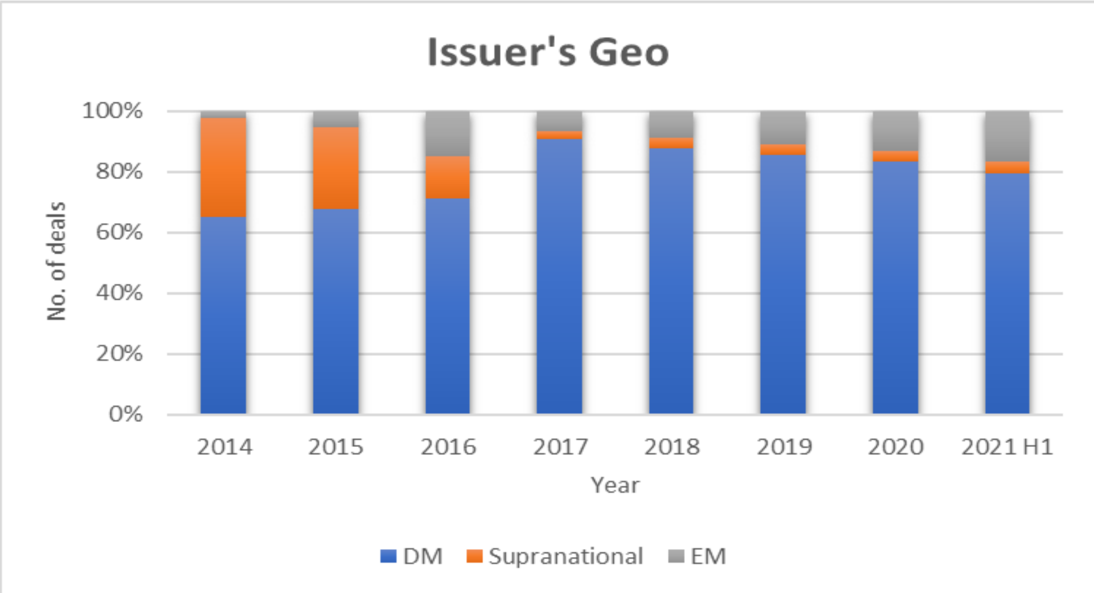
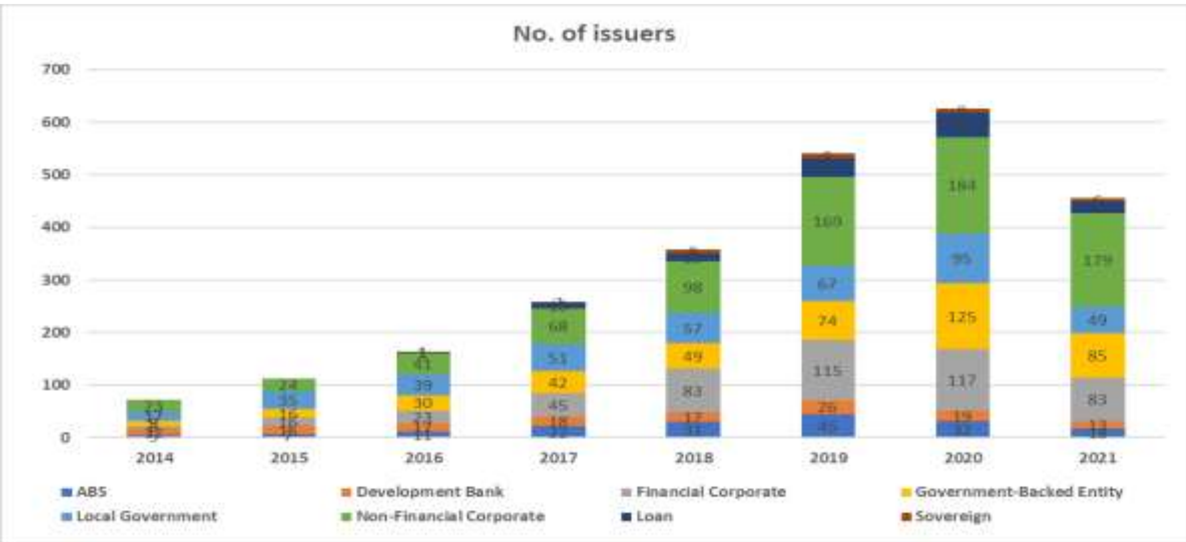
Figure 2: Geography of Green Bond Issuers



Source: Prepared by the researcher based on the data from ClimateBonds.net

The number of non-financial corporate issuers of Green Bond was the highest in 2020. However, in 2020 Government-backed entity issuers increased by 69% from 2019. Given the pandemic situation, the number of issuers from the local government has also shown significant increase from the period 2019 to 2020. However, Green bonds from ABS and Development Banks significantly declined in 2020. The following chart provides a comparative analysis of the number of issuers in each type from 2014 onwards.

Figure 3: Number of Issuers of Green Bonds



Source: Prepared by the researcher based on the data from ClimateBonds.net

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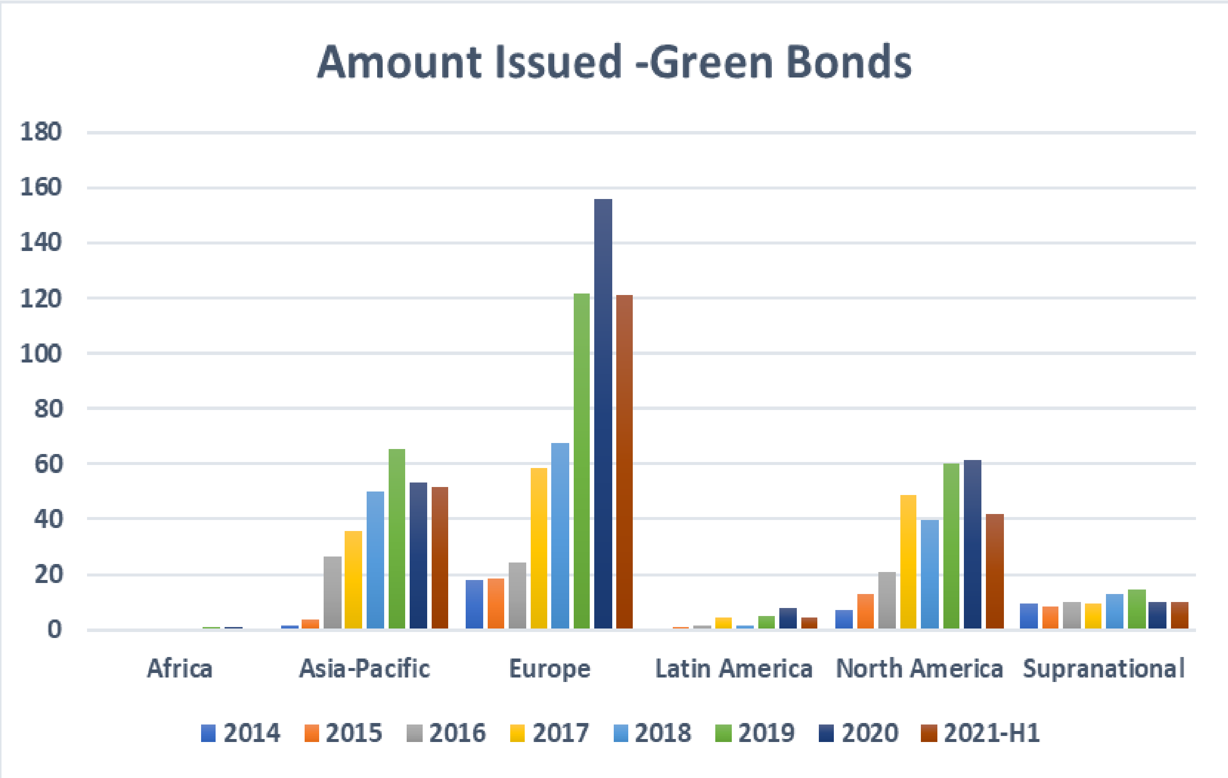
In terms of the value of the issue of Green Bonds, issuance by Europe is the highest, followed by North America and then countries from Asia Pacific region. In the first half of 2021, amount of green bonds issued in the Asia- Pacific region was more than the amount of green bonds issued in the North American region. Europe however continued to lead in the value of the green bonds issued. There are positive signs of revival of the green bonds issue market in 2021 and it is expected that the year 2021 will close on a high note.

Figure 4: Value of Green Bonds issued



Source: Prepared by the researcher based on the data from ClimateBonds.net

The share of the top three User of Proceeds categories were Energy, Buildings and Transport. The investments in these categories increased further in 2020, to a record of 85%. Transport sector was clearly the driver. As large, long-term infrastructure projects such as transport investments were least impacted by the ramifications of the global pandemic in the short-term, it remained resilient. Most of the issuance was due to public sector investments. Eight of the nine sovereigns issuing or increasing their green bonds included an allocation to Transport in their use of proceeds (except Lithuania), and almost half of the Transport allocations of GBEs originated from France (USD14.8bn). China was the second largest

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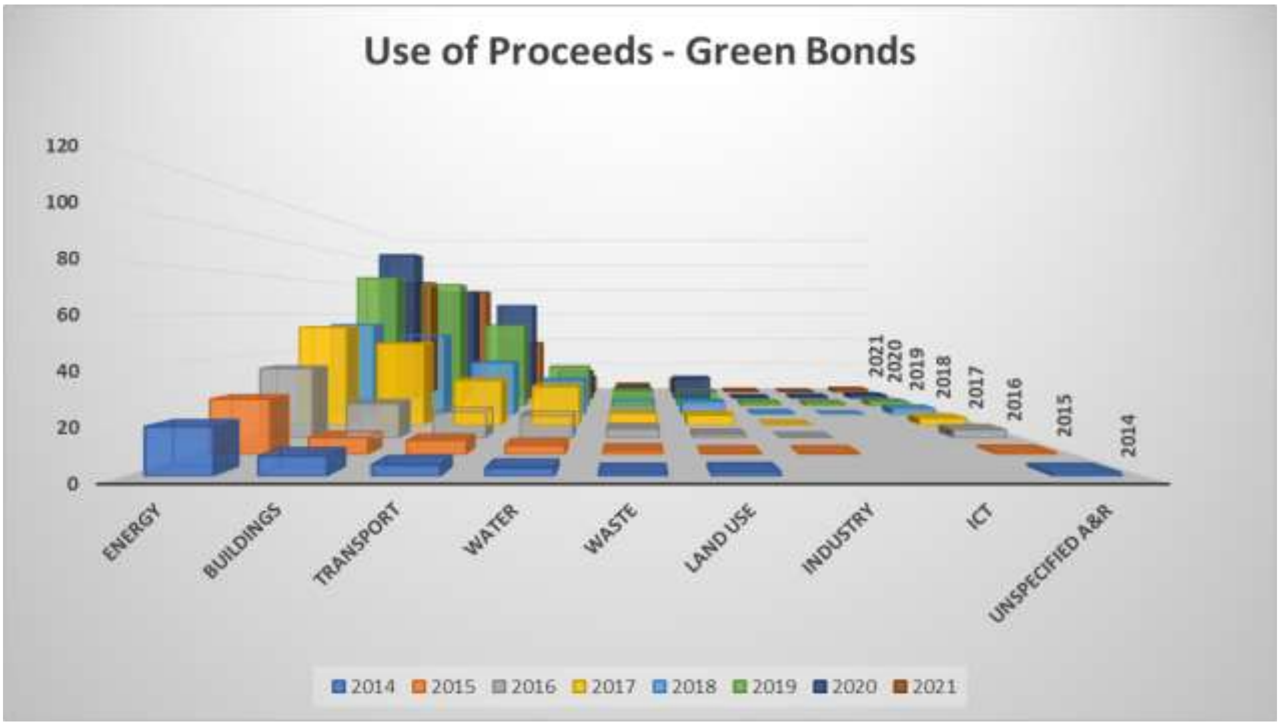
source (USD3.8bn), with eleven separate metro projects raising cash in the green bond market.

The following chart gives the details of the users of proceeds from issuance of Green Bonds.

Figure 5: Use of proceeds of Green Bonds



Source: Prepared by the researcher based on the data from ClimateBonds.net

Green Bonds in Emerging Markets

In terms of the key highlights of the Green Bonds in Emerging markets, 174 green bonds amounting to U$40 billion were issued by 101 issuers in 2020. Since 2012, 43 emerging market economies have issued green bonds, registering cumulative issuance of US$226 billion. Due to the effects of COVID-19, the market conditions for issuance of green bonds varied from country to country. According to IMF, at least 18 EM Central Banks used asset purchase programs to stabilize the local currency bond markets and to stem large portfolio outflows.

In the Emerging markets (EM), China remained the largest EM green bond issuer. However, China's green bond issuance fell to US$18 billion after four consecutive years of issuance over US$30 billion. Over half of China's issuance occurred in the second half of 2020. On the other hand, EM excluding China; green bond issuance rose by 21 percent in 2020 to

US$22 billion, an even more rapid growth than the 17 percent increase in global green bond issuance. The largest issuers were Chile, the Czech Republic, Hungary, Brazil, and Indonesia. Among the new entrants to the EM green bond market were Egypt, with a sovereign green issue of US$750 million in September 2020, and Hungary, with sovereign green issues of US$1.9 billion, as well as another US$300 million in issuance from non financial corporates. Other debut green bond issuers were financial sector institutions based in Armenia and Kazakhstan and non financial corporates based in Georgia, Romania, and Saudi Arabia. Excluding China, issuance has been almost equally split between the private and public sectors.

As a share of total bond issuance, green bonds in EMs excluding China remained steady, averaging to 3.8 percent in 2020, as compared with 3.4 percent in developed markets. Consistent with the global activity in Environmental, Social and Governance (ESG) thematic bonds, the volume of outstanding social and sustainability bonds more than doubled with issuance of US$15 billion in emerging markets, including landmark sovereign sustainability issuances from Mexico and Thailand. Non financial corporates in Brazil, Poland, and the United Arab Emirates were the first to issue sustainability-linked bonds in emerging markets

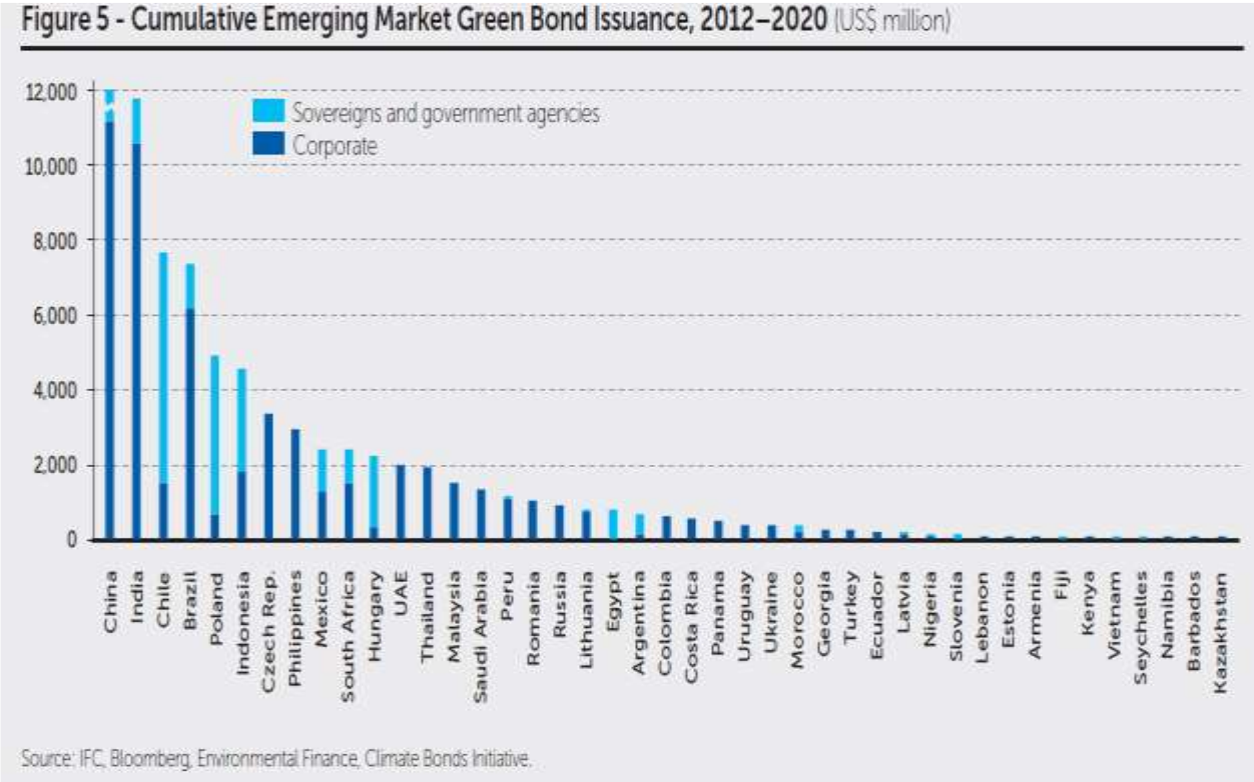
Green Bonds in India

Indian Companies raised $4.96 billion through ESG bonds, including green bonds, with the largest contribution coming from green bonds raised by renewable energy producers such as Greenko, ReNew Power and JSW Hydro Energy, according to data from financial markets tracker Refinitiv. The other companies that tapped the ESG bond market also include Shriram Transport Finance, which raised funds through social bonds; Adani Electricity Mumbai Ltd and UltraTech Cement Ltd, which issued sustainability-linked bonds (SLBs). Of these, seven were green bonds, one was a social bond, and another was a sustainability-linked bond.

In the first half of 2021, Ghaziabad Nagar Nigam became the first issuer of 8.1%, 10-year Green Municipal Bonds to raise Rs.150 crores for constructing a tertiary sewage treatment plant.

India stands second amongst emerging green bond markets after China. However, in terms of the value and number of deals, India's figures are dismal as compared to China as is evident from the chart below.

Figure 6: Green Bonds issuance in Emerging Markets



Source: Emerging Market Green Bonds Report 2020 (IFC & Amundi Asset Management)

Among emerging markets, India has the second largest volume of outstanding green bonds (US$10.8 billion) and has consistently been the second largest issuer after China. Last year, however, India's green bond issuance dropped significantly, to US$916 million from US$3.2 billion in 2019. Data on green loan issuance, which more than doubled from US$1.5 billion in 2019 to US$3.6 billion in 2020, according to Bloomberg, suggest that bank financing was more attractive than bonds.

India has had 12 issuances of Green Bond, valued at $3168 million in 2017 which went to a low of one issue in 2018. India's green bond market has not seen consistency in terms of growth. India, which saw weakened issuance in 2020, is set to regain previous issuance volumes with early issuances in 2021 from renewable energy corporates. To meet its ambitious targets, India's renewable energy capacity has been advancing, and bond issuance can meet capital requirements for some of the larger-scale projects.

Under the Paris Agreement, India's Intended Nationally Determined Contribution (INDC), it is imperative for India to reduce its emissions intensity, achieve non-fossil based energy

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resources, enhanced forest cover by 2030. In order to achieve its commitment under the Agreement, it is estimated that India would require at least US$2.5 trillion. Therefore, India needs to take steps to incentivize and bridge this gap at the earliest and ensure significant rise in domestic green bond market.

The following chart gives the details of Green Bonds issuance in India:

Figure 7: Green Finance Bonds issuance in India

Rise of Sustainable Bond Issuances in India

	All Sustainable Bonds		Green Bonds	
Issue Date Totals	Proceeds ($ mln)	"Number of Issues"	Proceeds ($ mln)	"Number of Issues"
CY2021: Jan-May 12	4958.5	12	3525.4	7
CY2020	2330.2	9	450	1
CY2019	4000.5	13	3013.7	8
CY2018	913	6	646.9	1
CY2017	4311.8	25	3168	12
CY2016	1061.1	10	806	3
CY2015	1662.6	13	847.1	2

SOURCE Refinitiv, an LSEG business

Source: https://www.forbesindia.com/media/images/2021/May/img_160421_greenbonds.jpg

Other Emerging Financial Instrument

Apart from the Green Bonds, in space of financial instruments to be used for creating sustainable environment, Social Bonds and Sustainability Bonds are also issued. According to Moody's Investors Services Global issuance of green, social and sustainability bonds, (collectively also known as sustainable bonds), is expected to hit $850 billion in 2021, a new annual record and a 59% jump from 2020. Moody's has forecasted $450 billion of green bonds and $200 billion each of social bonds and sustainability bonds in the first half of this year. The global issuance of sustainable bonds in the second quarter jumped 66% from a year earlier to $189 billion, Moody's said. This consisted of $94 billion green bonds, $46 billion social bonds and a quarterly record $49 billion sustainability bonds. The quarterly issuance total was the third-highest on record, indicating that market momentum is still exceptionally strong, the rating agency said.

These sustainable bonds are expected to account for 8-10% of global debt issuance in 2021, and this because issuers from across all segments of the market continue to explore how they can link their capital markets activity with their sustainability objectives, as per Moody's report analysis.

Conclusion

In the recent times, ESG has gained considerable importance and is no longer just a buzzword. All large corporations are seriously looking at ESG across their businesses, as companies are being assessed on adherence to ESG parameters and their sustainability practices are being monitored. Globally, too, ESG bond offerings have been seeing a sharp rise, as such concerns have taken centre stage following the coronavirus outbreak.

In terms of the pricing benefits for such bonds, Industry experts believe that presently there is not much of a pricing benefit for such bonds issued, basically due to the pool of investors for regular and ESG offerings being the same. But as allocations to ESG from big fixed income funds continue to grow in the future, a pricing benefit may emerge for companies that go the ESG way.

Marcus Partsch, head of sustainable bonds in his interview on growth of green bonds in 2020 very aptly brings out the urgent need to focus on climate change issues and funding through green bonds. At the beginning of the pandemic the green bond segment took a back seat as initial emergency response to Covid-19, many issuers – especially sovereigns, supranational and agencies (SSAs) - that issue both green bonds and social or sustainability bonds have focused on the latter.

As a result, the new issuance volume in March 2020 amounted to only US$5.4 billion. This was the lowest monthly new issuance volume since December 2015. He talks about recovery of the green bond segment from April 2020 onwards which continued steadily in the following months taking the segment to new, unimagined heights. With a monthly new issuance volume of US$36.8 billion, the green bond segment set a new record in September. With a new issuance volume of US$269 billion, the segment finally still managed a marginal growth of 1% compared to the previous year. And more importantly: in the fourth quarter, green bonds reached its most substantial milestone yet, surpassing US$1 trillion in cumulative issuance since market inception in 2007.

The positive trend in greenhouse gas emissions we have experienced during the lockdowns in 2020 is not sustainable. In fact, it can be firmly assumed that there will be a "rebound effect" in 2021 and beyond as there was after the financial crisis in 2008. Hence, emissions might soon even exceed the pre-Covid-19 level. Hence, the green recovery is an important piece of the puzzle to recover prosperity after the Covid-19 pandemic and to ensure a sustainable transformation. Green bonds will play a fundamental role on this recovery agenda. The European Commission for example intends to raise 30% of its €750 billion (US$908 billion) Next Generation EU recovery fund through the issuance of green bonds, hence becoming one of the largest issuers in the segment globally.

According to the report of Environmental Finance, Wills & Emery's executive have identified the developments that we can anticipate in social impact finance in the coming year. Firstly, there are numerous organisational activities happening in the industry. Further there are rapid developments underway to ensure greater clarity, clearer reporting and the standardisation of documents. Also, the people are now very actively concerned about protecting the growth in the sector. There are ratings being developed of impact measurement, and organisations which are looking at monitoring the impact evaluation aspects of transactions.

From a regulatory and governance perspective, there's been a great deal of issues relating to definition and clarity of the terms being used in this market. Over-regulation can stifle the growing market and its ability to innovate.

Finally, in the last few months we've seen that not only has the number of transactions increased, so too has their average value. The market is not without its challenges and, overall, it remains quite fragmented. However, what is emerging quite rapidly is an appetite for supporting these types of transactions on a large scale.

While many sectors have contracted during the pandemic, the impact finance sector has gone the other way. This is one of the most encouraging factors around the sustainability of the sector. Over the last 12 months, there has been exponential growth, not just in relation to Covid-related funding, but also to other issues, such as clean water, renewables, climate change. The coronavirus pandemic has tested the sector, but it has shown that this sector is extremely resilient, despite all of the disruption. There is a genuine drive by both the public and private sector to address some of the social interventions around the world at the moment. We only see it increasing over time. The road ahead is definitely a busy one for impact investment.

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