

Sustainable Finance in Emerging Markets: Evolution, Challenges, and Policy Priorities

Rohit Goel, Deepali Gautam, and Fabio Natalucci

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Sustainable Finance in Emerging Markets: Evolution, Challenges, and Policy Priorities
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ABSTRACT: Sustainable finance has become a key focus area for global investors and policy makers. Last year proved to be a breakout year for emerging markets (EMs), with sustainable debt issuance in 2021 surging to almost \$200 billion. This working paper, the first comprehensive study in the literature, analyzes the evolution of EM sustainable finance markets, including differences with advanced economies. The analysis shows how sustainable finance in EMs is growing fast not just in aggregate but importantly across many dimensions. The paper also identifies key development areas for EMs and policies to strengthen the resilience of sustainable finance markets.

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WORKING PAPERS

Sustainable Finance in Emerging Markets: Evolution, Challenges, and Policy Priorities

Prepared by Rohit Goel, Deepali Gautam, and Fabio Natalucci¹

¹ The authors would like to thank Ranjit Singh for his valuable comments and review. The authors would also like to thank Esti Kemp and Charlotte Gardes-Landolfini for valuable comments.

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Sustainable Finance and Financial Stability

Sustainable finance consists in the incorporation of environmental, social, and governance (ESG) principles into business decisions, economic development, and investment strategies.² Research has documented how sustainable finance can generate public good externalities (Principles for Responsible Investment 2017; Schoenmaker 2017; United Nations 2016) where actions on an extensive set of issues generate positive impacts on society.

Sustainability consideration impact financial stability through multiple channels (IMF 2019, 2020, and 2021): (1) **Environmental risk exposures** can lead to large losses for firms and climate change can entail losses for financial institutions, asset owners, and firms (IMF, 2020). Garanin et al. have shown that, while climate risks may seem abstract, losses in the event of a natural disaster can lead to a firm bankruptcy; (2) **Governance failures** at banks and corporations have contributed significantly to past financial crises, as evident during the Global Financial Crisis in 2008. López, Garcia, and Rodriguez (2007) have shown how corporate social responsibility influences the performance of stocks; and (3) **Social risks** in the form of inequality can contribute to financial instability by triggering a political response of easier credit standards to support consumption while the incomes for middle and lower-income groups remain stagnant (Rajan, 2010).

Sustainable finance markets can help spur positive changes to address environmental, social and governance issues. For instance, issuers of green bonds, green loans, and sustainability-linked loans tend to reduce their emission intensity over time at a faster rate than other firms (Schmittmann and Han Teng, 2021).³ Investor appetite for ESG finance is key to affordable environmental and societal transition, which has not yet reached the optimal level. They explained it through the perspective of institutional investors and suggested the need to work beyond the existing governance frameworks, which are incongruence with the *sustainability* problems facing institutional investors. Elmall, Igan and Kirti (2021) find weak link between the ESG scores and emissions of large emitter, primarily on account of lack of consistency in reporting, and hence indicating widespread greenwashing of ESG investments.

Within sustainable finance, climate finance is of a particular importance (IMF, 2021). The Bank for International Settlements (BIS) conducted a survey of Basel committee members⁴ in 2020 on climate-related financial risk initiatives. The responses indicated that, while the membership acknowledges climate change as a systemic risk to financial stability and sees the measures to mitigate climate change

² It is important to note that this definition is increasingly being questioned by researchers and remains an open question. As noted by the [IPCC \(2022\)](#), sustainable finance is a much broader and more complex concept than the incorporation of ESG principles into business decisions, economic development and investment strategies: "Finance for climate action (or climate finance), environmental finance (which also covers other environmental priorities such as water, air pollution and biodiversity), and sustainable finance (which encompasses issues relating to socio-economic impacts, poverty alleviation and empowerment) are interrelated rather than mutually exclusive concepts. Their combination is needed to align mitigation investments with multiple SDGs, at a minimum, minimize the conflicts between climate targets and SDGs not being targeted. Notwithstanding this, it doesn't affect the conclusion and findings of this paper

³ Authors note that a likely interpretation of the results is that green debt issuers pursue green debt to signal their green credentials as argued by Flammer (2021) for green bonds. Other reasons could be for engagement with investors, organizational learning, and mainstreaming of green considerations potentially play a role as well.

⁴ The Basel Committee comprises 45 members from 28 jurisdictions, consisting of central banks and authorities with formal responsibility for the supervision of banking business. Additionally, the Committee has nine observers including central banks, supervisory groups, international organizations, and other bodies. The Committee expanded its membership in 2009 and again in 2014.

as a desirable part of their regulatory or supervisory framework, however these measures remained a guidance as the members shied away from incorporating it into the prudential capital framework. The Network for Greening the Financial System (NGFS), a group of central banks and financial supervisors, has expressed concern that financial risks related to climate change are not fully reflected in asset valuations and has called for integrating these risks into financial stability monitoring (NGFS, 2019).

Trends in energy transition investment and commitments to ambitious reductions in emissions across governments and the private sector indicate that there is an unprecedented momentum behind the transition to a low-carbon economy. These issues are particularly relevant for emerging markets (EMs), which have until the past few years played a minor role in global sustainable financial markets (as discussed in depth in the next section). A number of EMs are already seizing this opportunity, but the risks of seeing lower-income economies fall further behind are also increasing. Most emerging economies do not have the budgetary space to deploy the kind of fiscal support that advanced economies can provide—as evidenced during the COVID episode. This suggests that the private sector needs to play a crucial role in driving sustainability, highlighting the importance of creating liquid and deep sustainable finance markets in EMs.

Existing literature has identified a number of issues related to climate transition in the developed world, spanning from insufficient climate finance⁵, cost of transition (Bachner et al., 2019⁶), and policies. In a technical note dated Oct 2021, OECD estimates the climate finance needed to be mobilized in developed economies to EM under different scenarios by 2025.⁷ While most researchers and market participants agree that the developed world has fallen short on its promise⁸ to mobilize funds to support low-carbon transition, in emerging markets⁹, there is little analysis on sustainable finance markets in EMs. In his paper on Green Bonds markets of developing countries, Josue Banga¹⁰ examines the role of green bonds, noting rising investor appetite for green bonds on the back of *increasing climate awareness*. Further, Jakob et al.¹¹ estimate the transfers needed by developed countries to developing countries under the United Nations Framework Convention on Climate Change. EM sustainable finance markets have grown impressively over past few years and are getting increasingly complex. This paper I adds to the literature by taking a broader view of EM sustainable finance market and analyzing its evolution across multiple dimensions.

In Section 2, we discuss the importance and drivers of sustainable finance for emerging markets. In Section 3, we discuss the growth and evolution of the sustainable finance markets for EMs focusing on the overall

⁵ Financial Markets and Climate Transition Opportunities, Challenges and Policy Implications, 2021, OECD

⁶ Costs or benefits? Assessing the economy-wide effects of the electricity sector's low carbon transition—The role of capital costs, divergent risk perceptions and premiums

⁷ Scenario 1 assumes that public finance is scaled up in line with the information provided by countries and MDBs, subject to OECD analysis and assumptions. Scenario 2 illustrates the joint impact of several factors that may result in lower-than-targeted levels of climate finance.

⁸ Under the Copenhagen accord of 2009, developed countries agreed to mobilize \$100 bn annually by 2020 to facilitate reduction in greenhouse gas emissions and other climate change related policies in developing countries.

⁹ "Climate Finance Provided and Mobilized by Developed Countries, Aggregated trends with 2019 data". Further, a feature in Nature Journal identifies (How to Fix the Broken Promise of The sample of China, Chile, India, Mexico, and South Africa (for which ESG sub-indices are available and which collectively have 16 percent of all EM ESG equity flows since Jan 2020). Climate Finance, Oct 2021), this has declined in 2020 on account of the COVID-19 pandemic.

¹⁰ Josué Banga (2019) The green bond market: a potential source of climate finance for developing countries, Journal of Sustainable Finance & Investment, 9:1, 17–32, DOI

¹¹ Michael Jakob, Jan Christoph Steckel, Christian Flachsland, and Lavinia Baumstark (2015) Climate finance for developing country mitigation: blessing or curse? Climate and Development, 7:1, 1–15

trend as well as differentiation across various dimensions. Section 4 analyzes the green bond markets in EMs as a case study to highlight the pervasive richness and variation in EM ESG markets. Section 5 discusses the differences between the sustainable finance markets in EMs and advanced economies. Section 6 discusses some development areas of EM ESG markets and Section 7 concludes with some policy recommendations.

Drivers of Sustainable Finance in EMs?

Structural deficit of funding and progress on sustainability

The tension between adapting to a carbon-neutral global economy, while simultaneously containing energy prices, maintaining economic growth and creating jobs, constitutes today's principal challenge for countries around the world. In emerging markets, the issues are even more acute and immediate as developing countries generally lag on education levels¹², shallower capital markets¹³, and less flexible workforce. By contrast, with a few notable exceptions (such as fast-growing technology sectors in Asia), a large share of emerging market activity still involves fossil fuel production or rests upon carbon- and water-intensive industries, such as mining, agriculture and heavy industry. Developing nations are also more reliant upon cheap, often subsidized¹⁴, energy for both their producers and consumers. The starting point for many developing economies—with much lower incomes per capita, young and rapidly growing populations, archaic and dilapidated infrastructure—often implies trade-offs between short-term growth and stability versus long-term environmental protection. It is a difficult balance to strike, and the devastation on emerging economies from COVID has in many ways exacerbated these strains.

This economic model of reliance on cheap fossil fuels now carries enormous risk in a world undergoing a fundamental energy transition, which is estimated by the International Energy Agency (IEA) to cost nearly \$4tr annually through 2050.¹⁵ A recent analysis by Carbon Tracker estimates that under the IEA's *low carbon* assumption (oil prices average \$40/bl), the 40 countries that are most economically reliant on hydrocarbon exports would lose \$9tr in revenue by 2040, with 95 percent of these countries being an emerging market. This shows the importance of investing in the new-economy initiatives and safeguarding against transition risks for emerging markets. This also shows that EMs' growth model is also significantly exposed to the 'brown' technologies to begin with – thus highlighting the potential scope of improvement. The IEA also identifies the heavy reliance that EMs have had on public finance for large-scale projects and calls for greater policy initiative to attract larger private investment, which would be instrumental to bring about the said energy transition.

¹² Imperial College Business School's report on EM green capital, 2021, finds that education on ESG debt products is lacking amongst key investors groups including banks in EMs outside China, even in the EMs with relatively large domestic capital markets. like India, Brazil and Mexico. At the same time, the report highlights the multifaceted role of governments in developing this local investor base, which includes adopting frameworks, educating the investor base about the type, and labeling of ESG debt products, and initiating issuances,

¹³ The paper also argues that EM debt markets are increasingly managed more passively, as the fund managers compete for flows on less fee, which in-turn has eliminated the possibility of risk analysis, particularly based on environmental considerations.

¹⁴ As per IEA's Fossil Fuel Subsidies database, the 25 largest fossil fuel subsidizing countries were EMDEs in 2020.

¹⁵ According to International Energy Agency's report "Net-Zero by 2050: A Roadmap for Global Energy Sector, 2021", annual clean energy investment would have to reach ~\$4 trillion in order to achieve net-zero CO2 emissions by 2050.

Commentators have also recognized the need to reorient financial markets to meet global sustainable development needs and deliver long-term and resilient growth. By 2050, the United Nations predicts that an additional 2.5 billion people will migrate from rural to urban areas, with nearly 90 percent of this increase concentrated in growth and emerging markets.¹⁶

Along with lagging on the sustainability progress, emerging markets also suffer from a structural deficit on funding. Development of local currency funding market is a long-standing development goal. Indeed, the current state of development funding shows a stark contrast between the estimated cost of financing the Sustainable Development Goals (SDGs) through 2030 and the available financial resources. The United Nations Conference on Trade and Development (UNCTAD) says achieving the SDGs will cost between US\$5 and \$7 trillion annually, with an investment gap in developing countries of about U.S. \$2.5 trillion.

Outperformance of ESG Indices may be adding to the recent momentum

The broader investor optimism about the segment is also reflected in a steady outperformance of ESG assets over the broader indices across asset classes. This might reflect the fact that ESG issuances were earlier dominated by higher-credit quality issuers, or the sectoral composition of these ESG indices which are dominated by the tech sector.¹⁷ **Bonds:** Since 2019, the period over which more than half of EM ESG bonds have been issued, the average annualized return of the ESG segment is 2.1ppts higher than the corresponding broad indices. Since the COVID-19 pandemic this return differential has receded to a still notable 1.5ppts (Figure 1). **Equities:** For major EMs¹⁸, the average annualized return for ESG sub-indices since Jan 2020 is 17 percent, almost 7ppts higher than the broad indices. While this is exaggerated by broader equity indices yielding negative returns in Chile, the average return differential since Jan 2020 still stands at meaningful 5.2 ppts for other major EMs, i.e., China, India, Mexico, and South Africa (Figure 2).

Figure 1. Bond returns: EM ESG vs the Broad Index (Indices = 100 on Jan 1, 2020; percent)

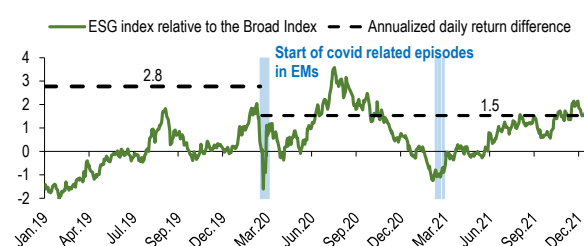
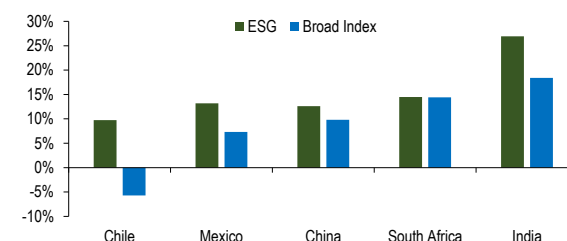


Figure 2. Equity Performance: ESG vs the Broad Index (Annualized Returns since Jan 2020)



Sources: Bloomberg; and authors' calculations

Note: For South Africa equity returns are calculated since June 2020. In panel 1, JP Morgan's ESG EMBI Global Diversified index is used to measure ESG bond performance and JP Morgan's EM Equal Weight index is used for broader EM bond performance. The

¹⁶ United Nations, Department of Economic and Social Affairs, Population Division (2019). World Urbanization Prospects: The 2018 Revision (ST/ESA/SER.A/420). New York: United Nations.

¹⁷ In their study on relative performance of highly-sustainability corporates in the US vis-à-vis low-sustainability ones during 1993–2009, Eccles et al. note that the former group outperforms in the long run in terms of stock price as well as financial matrix.

¹⁸ The sample of China, Chile, India, Mexico, and South Africa (for which ESG sub-indices are available and which collectively have 16 percent of all EM ESG equity flows since Jan 2020).

J.P. Morgan ESG EMBI Global Diversified Index (JESG EMBIG) tracks liquid, US Dollar emerging market fixed and floating-rate debt instruments issued by sovereign and quasi-sovereign entities.

Impediments to the development of sustainable finance in EMs

While sustainable finance is highly useful for emerging markets across multiple dimensions, there have been several impediments to a rapid development of the sustainable financial markets in EMs

- Given that many EMs are heavily reliant on natural resource exports, these transition objectives may be in direct conflict with the country's short-term economic objectives. Green projects such as renewable energy require greater up-front outlays, and the cost of capital in EMs is often far higher than in advanced economies (Steffen, 2020)
- Portfolio managers have always focused on 'Governance' as a core part of their investment process: government corruption, transparency and rule of law are simply part of the usual credit risk assessment process (Qian, 2012). But surveys show that "E" and "S" seem opaque and far in the future (Amacker and Donovan, 2021; JP Morgan). Indeed, over the last two decades, improvement in ESG scores has been driven by improvements in governance (and secondarily by social progress), whereas very little has been a result of environmental improvements (Renaissance Capital, 2018). The social angle comes to the fore even more prominently given the Russia-Ukraine war.
- Rating agencies often have very different assessment criteria which provides inconsistent and incoherent comparisons to asset managers. This disconnect is particularly evident in the environment segment (Gratcheva et al., 2021). Research also notes that ESG frameworks are influenced by "ingrained income bias" which benefits more developed countries with higher income levels. As a result, ESG scores are naturally tilted towards reinforcing the status quo and handicapping countries who already score poorly (Gratcheva et al., 2021b)
- Lack of clear frameworks also act as impediment to issuing sustainable debt. Some EM sovereigns do not have well-developed frameworks to ensure sufficient progress towards Nationally Defined Contributions (NDCs) under the Paris Agreement, which potentially impacts participation in green bond markets (Urban Institute, 2021)

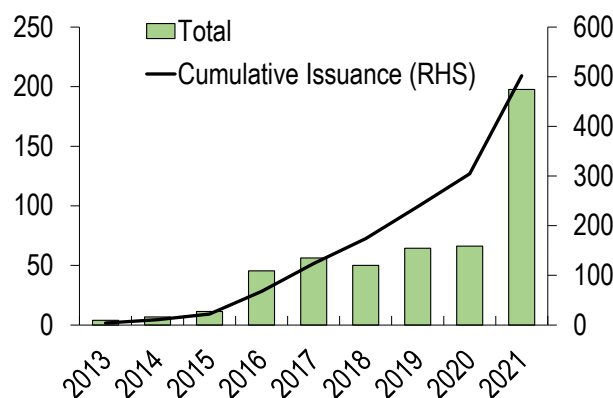
Growth of the EM ESG Financial Markets

Deepening market: Aggregate flows as well as an expansion across regions

2021 turned out to be a breakout year for sustainable financial markets in EMs. EMs saw a strong rebound in ESG flows, on the back of exceptional bond issuance volumes and sustained strong flows into equities. **Gross flows into ESG related bonds were almost \$200bn in 2021 against \$66bn for 2020** (Figure 3). This accounts for ~40 percent of the total cumulative issuance of ~\$500bn since 2015. The sharp acceleration in 2021 comes after sustainable finance strategies became more mainstream in EMs, driven in part by pandemic induced demand, as also reflected in the use of green borrowing strategies in LATAM. The share of EM in global ESG issuance had fallen from 31.6 percent in 2016 to 8.7 percent in 2020 reflecting an early lead by the advanced economies when it comes to ESG strategies. However, with EM bond issuance growing at 200 percent in 2021, EM's share in global bond issuance has risen to 12.8

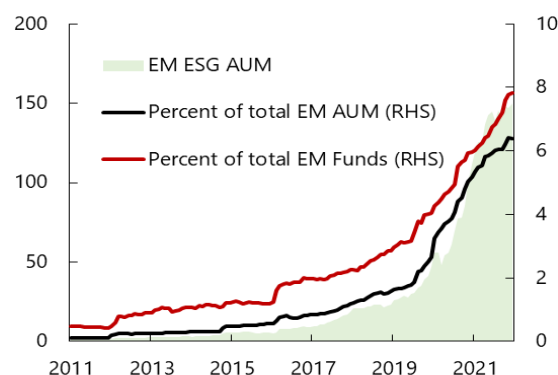
percent for 2021 with this being the first year where EMs have gained market share at the expense of AEs since 2016. **ESG equity flows, at \$25bn, were slightly ahead of the record flows of 2020.** This led to total assets under management rising to almost \$150bn (Figure 4). The cumulative ~\$50bn flows in last 2 years compare with \$20bn in the last 6 years. The rising penetration is also reflected in a sharp rise in the proportion of EM ESG AUM and the number of funds, which rose by 1.2 ppts and 1.9 ppts to 6.4 percent and 7.8 percent, respectively.

Figure 3. EM ESG Bond Issuance
(USD bn.)



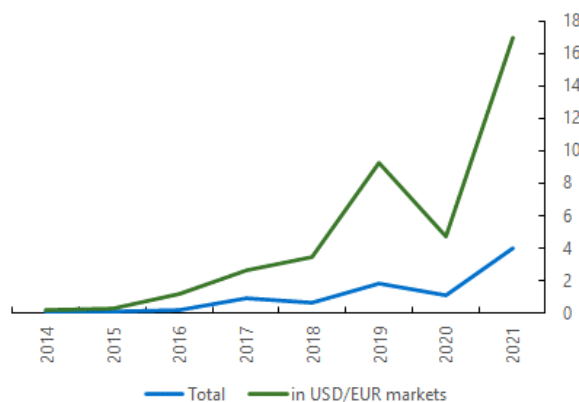
Source: EPFR, and authors' calculations

Figure 4. EM ESG Equity Funds
(USD bn, percent; Based on EPFR data)



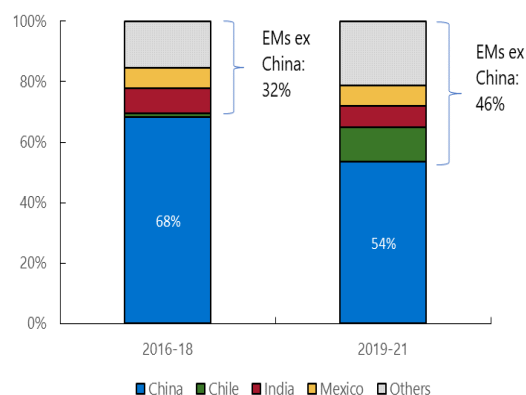
The sharp rise in the relevance of ESG instruments is also reflected through the changing financing composition for EMs. ESG instruments (for EMs ex China) account for almost 4 percent of the total issuance in 2021, which compares with around 1 percent for the last five years (Figure 5). This shift is even more stark in the offshore markets with ESG instruments accounting for a meaningful 17 percent of the total issuance in 2021. This compares with just c4 percent over the last 5 years.

Figure 5. ESG Issuance as a proportion of the total issuance
(Percent; for EMs ex China)



Sources: BloombergNEF, and authors' calculations.

Figure 6. Yearly ESG debt issuance in EMs, by region
(USD Billion, percent)



China remains a dominant player in the ESG universe, but other EMs are picking up sharply (Figure 6). With almost \$110bn ESG issuance in 2021, China now stands in the league of leading AE issuers like U.S., France and Germany, becoming the third largest issuer of ESG debt in the world in 2021. Furthermore, as ESG debt issuance of China is primarily in green bonds, it is now also globally the second largest issuer in the segment—cumulative green bond issuance of almost ~2 percent of GDP. At the same time, ESG issuance for EMs ex China rose to \$90bn in 2021 (vs average of \$25bn over the last five years), increasing their proportion of total EM issuance to 45 percent in 2021 vs ~30 percent over 2016–18. Green bond issuance also grew sharply to ~\$20 bn in 2021—vs average of \$11bn in the last five years. While the rise in the ESG issuance is promising, the breadth of participation is still not very high as the number of issuers remains low and concentrated amongst a handful of entities in most markets.

Chile and Peru are clear leaders within the EMs excluding China. Chile has issued sustainable debt equivalent to almost 12 percent of its GDP (Figure 7) which is a significantly higher than the peers and is followed by Peru and Mexico (at ~2 percent of GDP each). Analysis also shows that there is a significant recent acceleration for many EMs including Chile, Peru and Turkey with 2021 constituting more than 50 percent of their cumulative issuance. Looking from a complementary lens, Chile (and to a smaller extent Peru) has a significant amount of ESG instruments (as a proportion of its overall issuance) in both domestic and offshore issuances (Figure 8). This contrasts with India and Poland where ESG instruments dominate the offshore financing mix but relatively little in the total issuance. It might reflect the role played by a different set of investors in this segment.

Figure 7. Yearly ESG debt issuance in EMs, by region
(USD Billion, percent)

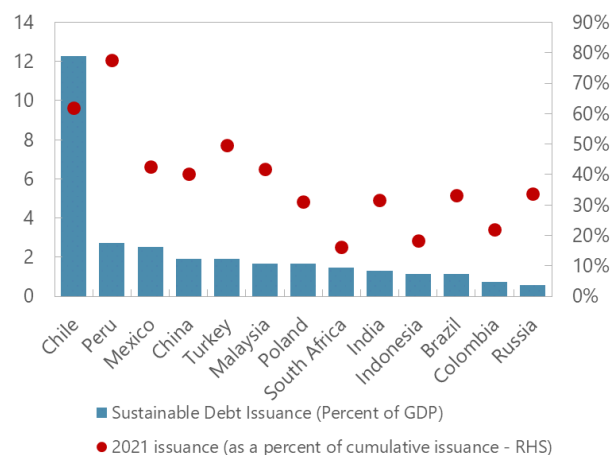
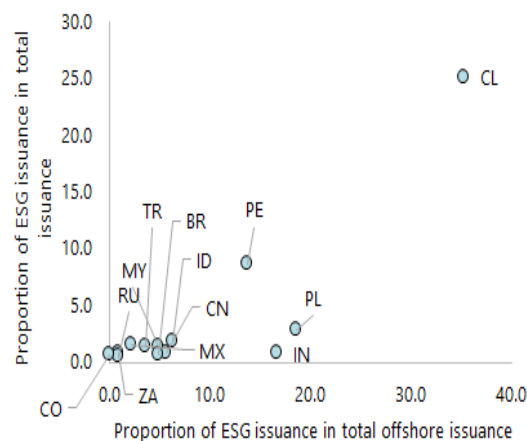


Figure 8. ESG Issuance as a proportion of the total issuance—Country level
(Percent)



Sources: BloombergNEF, and authors' calculations.

Differentiation across the different sustainability categories

While financing ESG needs through traditional instruments remains an option, ESG as an independent strategy has become mainstream and offers a wide range of instruments¹⁹. ESG debt finance instruments are broadly classified based on *use of proceeds*, also called *activity-based*, and key performance indicator (KPI) based also called *behavior-based*. Intuitively, labels of activity-based instruments explain the use of proceeds, for example, proceeds from green loans/bonds will be used for projects that contribute positively towards environment, while that of social instrument will be for social causes like education, employment etc. One key drawback of activity-based instruments is that they restrict the issuer base to those in the relevant economic sectors, like utilities, energy or governments. Instruments under behavior-based strategy, which includes sustainability-linked instruments, define the KPIs and targets related to sustainability. Hence, a wider issuer base can finance their transition needs.

While there are broader guidelines about these strategies (Table 1), there are significant investor concerns over taxonomy in ESG space are rife and beg for greater standardization in labeling of ESG instruments (as also discussed in October 2019 GFSR, IMF, 2020). There is some initial progress on this across countries and international organizations. For instance, in late 2020 China announced its plans to reach peak emission before 2030, and carbon neutrality by 2060. Subsequently, the country's regulatory authorities have been actively working on the taxonomy of various ESG financing instruments, particularly, green bond market. This includes an update of "Green Bond Endorsement Projects Catalogue" which aligns the green project classifications closer to international standards, and introduction of "Carbon-neutral bonds"²⁰. A detailed coverage of the work remains a future work extension.

Table 1. Key Types of Sustainable Fixed Income Categories

Type of Debt	Instruments	Key properties
Fixed income	Green bonds	Specific bonds that are labeled green, with proceeds used for funding new and existing projects with environmental benefits.
	Green money market funds	Apply ESG factors to the investment of money market instruments.
	Social bonds	Bonds that raise funds for new and existing projects that create positive social outcomes.
	Sustainable bonds	Bonds with proceeds that are used to finance or refinance a combination of green and social projects.
	Sustainability-linked bonds	Bonds that use proceeds for pre-defined ESG related KPI, targets, and periodic appraisals.
	Green mortgage-backed securities (MBS)	Green MBS securitize mortgages that go toward financing green properties.
Loans	Green loans	Loans that have proceeds used to finance or refinance green projects, including other related and supporting expenditures such as R&D.
	Sustainability loans	Loan instruments and/or contingent facilities such as guarantees or letters of credit that incentivize the borrower to meet green or social projects.
	Social loans	Loan instruments that are used to finance eligible social projects.
	Sustainability-linked loans	Loan instruments that incentivize the borrower to meet predetermined sustainability performance goals.

¹⁹ Research has also indicated that ESG strategies by themselves, do not yield meaningful social or environmental outcomes (Kölbel et al. 2020, IPCC 2022). So it remains an open question if development of ESG can promote climate and environmental alignment or not.

²⁰ Carbon neutral bond is a green bond label introduced in early 2021 in China.

Activity-based debt remains the mainstay, but sustainability-linked debt is catching-up fast (Figure 9). Historically, activity-based ESG debt issuance, has dominated the ESG finance, however, behavior-based ESG financing, is gaining traction. From being practically non-existent until 2017, sustainability-linked debt issuance constituted 1/4 of \$1.5tr. ESG debt issuance in 2021. This shift is happening across AEs and EMs, as investors become more conscious of greenwashing and issuers using behavior-based instruments, i.e., sustainability-linked debt²¹, to fund their transition needs.

Figure 9. Global annual issuance by type of sustainable debt

(bn USD)

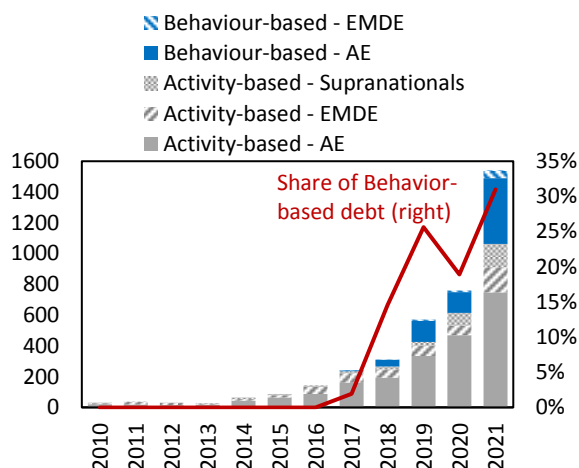
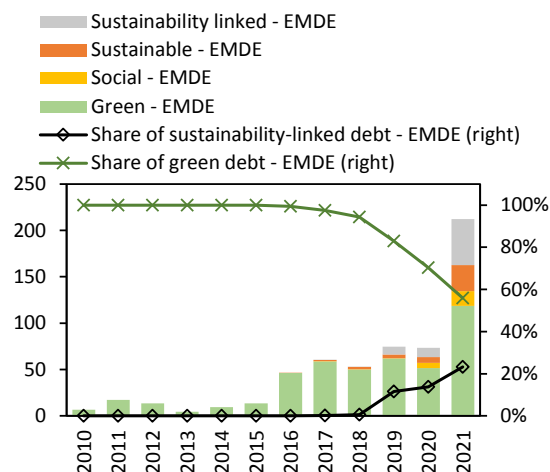


Figure 10. Composition of EMDE sustainable debt issuance

(bn USD, percent)



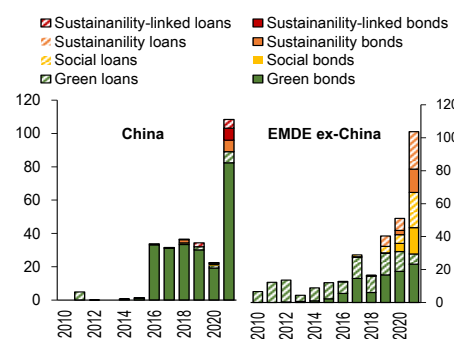
Sources: Bloomberg NEF, and authors' calculations

Focusing specifically on the Emerging markets, green bonds remain the core part of EM ESG ecosystem however, non-green instruments are rising in prominence too—reflecting the development of a broader sustainable finance ecosystem (Figure 10). In 2021, EMs raised \$103bn in green bonds, which is almost 2.5x the average issuance over the last five years. A significant proportion of this rise in issuance came from China (up 3x in 2021 vs average levels over the last five years), which meets about 90 percent of its ESG debt finance through green bonds (over 2016–2021). Green bonds constitute about 64 percent of all EM ESG fixed income issuances since 2016, with an annual growth rate of c20 percent in volumes. However, the non-green bond segments are rising sharply in proportion and accounted for almost half of the total issuance in 2021, which compares with just ~20 percent in 2016–18.

²¹ As per Bloomberg NEF's 1H2022 Sustainable Finance Market Outlook, more vigilant investors look for accountability and prevent greenwashing, and hence have a preference for sustainability linked bonds.

There is a strong inter-play between the emergence of non-green bond segments and EMs ex China. (Figure 11). The non-green bond segments are particularly important in EMs ex China (i.e., Chile, India, Mexico and Brazil) where non-green instruments comprise ~80 percent of ESG issuance (vs ~60 percent in 2020). The higher penetration is particularly evident in three sub-sectors: social (16 percent), sustainability-linked (13 percent) and sustainability bonds (9 percent) that collectively raised almost 40 percent of EM ESG debt funding in EMs ex China over 2019–21s vs just 4 percent over 2016–18. Analysis also shows that bulk of the behavior based debt is issued in form of loans in EMs, where otherwise bonds seem to have the lion's share.

Figure 11. Sustainable debt issuances by type: China and EMDE ex-China
(bn USD)



Source: BloombergNEF

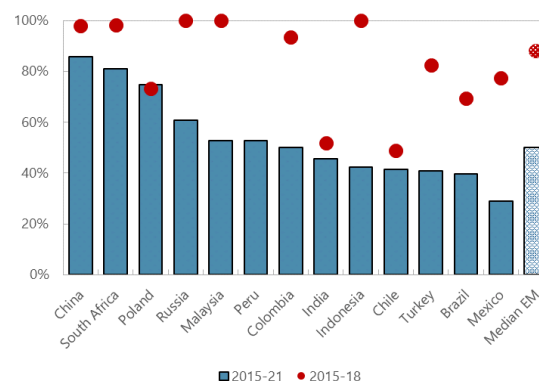
The rich variation within EMs is also reflected through the product mix where green bonds are dominant in China, Indonesia and Poland; social bonds are dominant in Chile; sustainability-bonds are dominant in Malaysia and Peru and sustainability-linked loans are dominant in Russia and Turkey. Analysis also shows that while country level ESG ecosystems remain highly concentrated in nature, there is a notable rise in breadth even within countries (Figures 12 and 13). For instance, for a median Emerging Market, the largest segment accounted for almost 50 percent of total issuance over 2015–21. This compares with almost 90 percent of issuance coming from a single sector over 2015–18. The concentration reflects the role played by country specific regulatory approaches, their own sectoral penetration and the extent of market development.

Figure 12. Cumulative ESG debt issuance in EMs, by type (USD Billion, percent)



Sources: Bloomberg NEF; Authors' calculations

Figure 13. Proportion of issuance by the largest category (Percent)

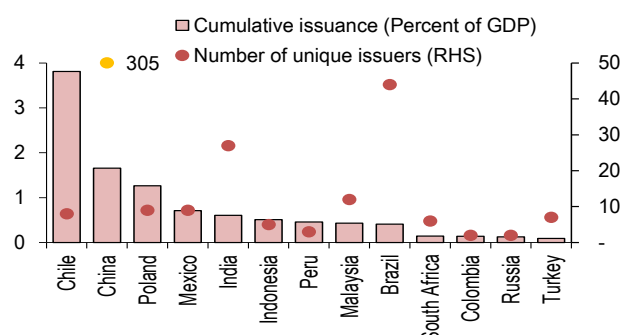


Case Study of EM Green Bonds: Differentiation is Pervasive Across Multiple Dimensions

Countries: Rise in aggregate EM green bonds masks high underlying variation

As of end 2021, Chile, India, Mexico and Brazil have the largest share in cumulative green bond issuance amongst EMs ex-China. As a percent of GDP, the largest green bond issuances (cumulatively over 2015–2021) are by Chile, China, Poland, Mexico and India. However, there has been a shift in market share over the years. Chile, Poland and Russia have gained in proportion for total green bond issuance over the last three years (as compared to other EMs ex China). However, the market share gains are led by Chile, Indonesia and Peru in terms of the offshore EM ESG issuance. (Figures 14 and 15)

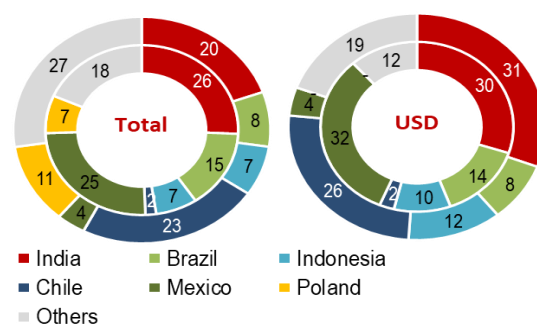
Figure 14. Total Green Bond Issuance, as a percent of GDP
(Percent)



Sources: BloombergNEF, and authors' calculations

Figure 15. Composition of EM ex CHN green bond issuance

(Inner circle: 2014–18; Outer circle: 2018–21)



Currencies: China has seen a surge in USD denominations while other EMs expand in other currencies (Figures 16 and 17)

Given China's dominant size, CNY denominations account for ~60 percent of the total EM green bond issuance. However, this trend is changing as China has been issuing a larger portion of its issuance in USD. This combined with large USD green bond issuers (like India, Brazil, Chile and Mexico) maintaining their USD presence imply that the prominence of USD has risen sharply for the overall EM sample. Outside of China, USD remains dominant accounting for almost two-thirds of the green bonds in EMs. Countries like India, Indonesia and Mexico issue primarily in offshore markets. However, role of other currencies is picking up led by EUR (Poland, Turkey and Chile) and other local currencies (Malaysia, Colombia and South Africa). **Significant difference in the local currency and hard currency ESG denominated instruments potentially also points to investor base dynamics for this segment.** As seen in Figure 5, almost 20 percent of EM offshore issuance is in ESG linked instruments—vs just 4 percent for the total issuance. This is also reflected in the fact that a significant portion of green bonds by EMs ex China are denominated in USD/EUR.

Sectors: Non-Financial Sectors are Rising in Prominence (Figures 18 and 19)

Financial sector has been the dominant issuer of green bonds especially in China—accounting for ~60 percent of its total issuance. However, over the last three years—proportion of issuance from the non-financial sectors (most notably utilities, energy and industrials) has risen sharply from 40 percent to 60 percent for overall EMs, and from 85 percent to 90 percent for EMs ex China (comparing 2016–18 vs 2019–21). In fact, financial sector issuance declined not only in relative terms but also absolute. During 2019–21, the financial sector for EMs raised \$69bn which was ~\$3bn less than that during 2016–18. In terms of countries, while utilities lead in China and India; industrial and energy sectors have been the largest issuers in Chile, Russia, and Mexico.

Ownership: Varying levels of government participation (Figures 20 and 21)

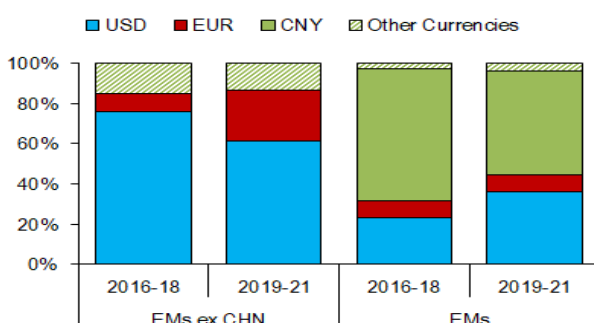
In terms of ownership, there is a sharp difference between China and the rest of EMs. For overall EMs, issuance by government related entities rose from 40 percent in 2016–18 to almost 60 percent in 2019–21 primarily due to China, which has witnessed a significant increase in green bond issuance by government related entities since 2019. This potentially reflects the fact that ESG transition is more expressly mandated in China vs most other EMs. Corporate participation is however rising amongst EMs ex-China, to the point that, it constituted 2/3rd of 2021 issuances, and half of 2019–21 cumulative issuances—vs 30 percent of issuances during 2015–18.

Embedded risk premia are also reflected in the coupon and tenor profile

- **FX:** Coupons for USD and CNY denominated bonds are significantly higher than EUR denominated bonds, USD denominated bonds also have the highest tenors while CNY denominated bonds have the lowest tenors (Figure 22)
- **Credit:** Corporate bonds pay significantly higher coupon rates but at less tenors than bonds issued by the government related sectors. This potentially reflects the embedded credit risk premia (Figure 23)
- **Sectoral:** Financials has the lowest coupon and tenor with industrials sector at the other end of the spectrum

Country variation (Figures 24 and 25): Latin American EMs (led by Chile, Mexico, and Peru) have issued long-term tenors while India, China, Turkey, and Romania have issued relatively short-term instruments. There is a wide variation in coupons ranging from Poland (<2 percent) to South Africa and Colombia (~7 percent). However, this may reflect the differences due to the currency denomination of issuance. In a like-for-like comparison, Brazil, Peru, Turkey, and India have paid the highest coupons in USD denominations, while Turkey, India and Indonesia have paid the highest coupons in local currency denominations.

Figure 16. Green Bonds: Split by Currency Denomination



Source: Bloomberg and authors' calculations

Figure 17. Green bond issues since 2014: Split by Currency Denomination, by country

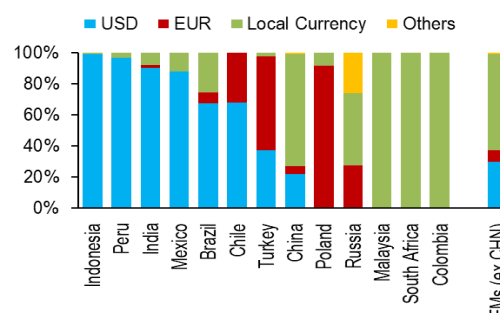
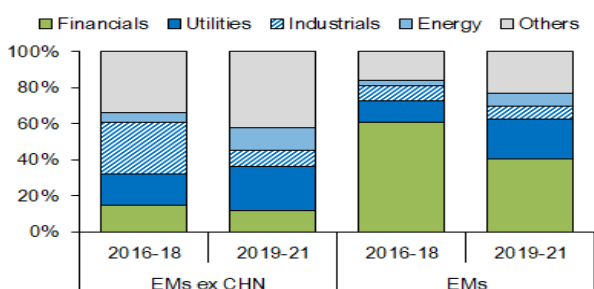


Figure 18. Green Bonds: Split by Economic Sectors



Note: Government related entities include local/state/central governments, state-owned enterprises and other government owned financial entities

Source: Bloomberg and authors' calculations

Figure 19. Green Bond issues since 2014: Split by Economic Sectors, by country

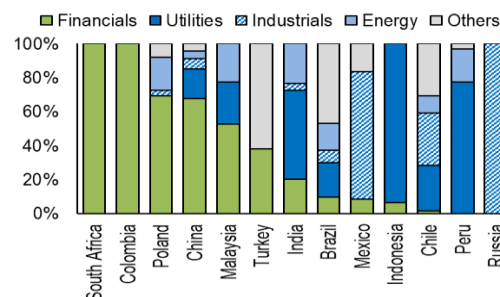
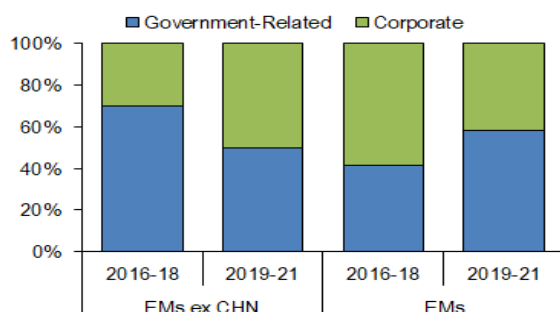


Figure 20. Green Bonds: Split by Ownership Type



Source: Bloomberg and authors' calculations

Figure 21. Green Bond issues since 2014: Split by Ownership Type, by country

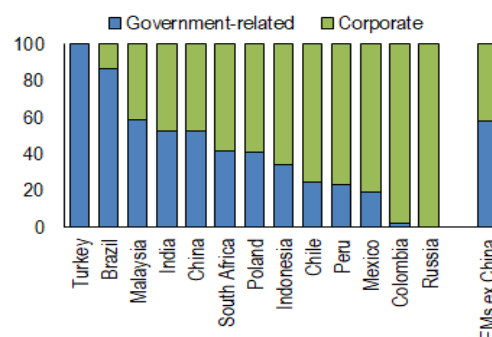
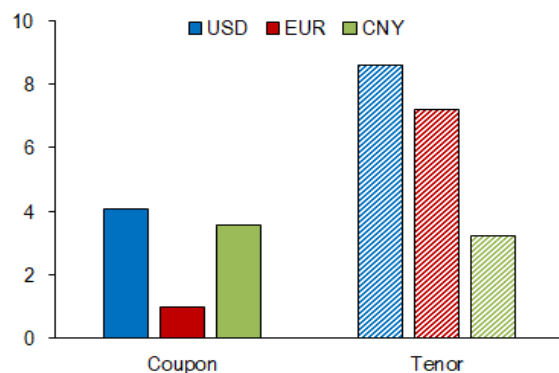


Figure 22. Average coupon and tenor, across different ownership types across different currency denominations...

(Tenor in years, Coupons in percent)



Source: Bloomberg and authors' calculations

Figure 23. ... and across different ownership types

(Tenor in years, Coupons in percent)

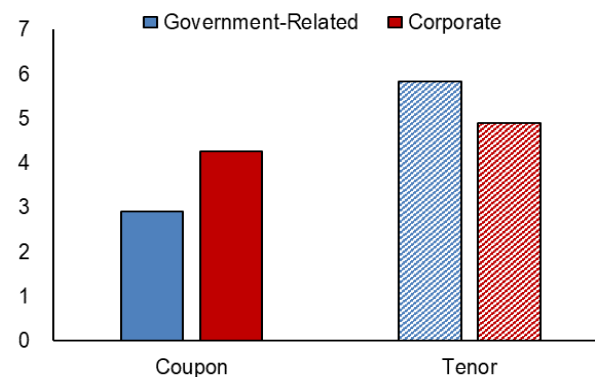
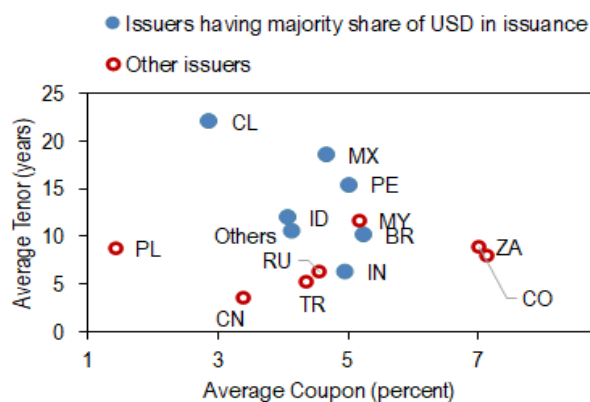
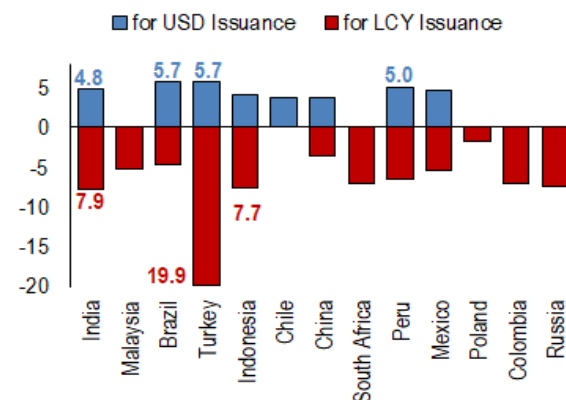


Figure 24. Average coupon and tenor, across different EMs (Percent, Years)



Source: Bloomberg and authors' calculations

Figure 25. Coupon Rates for USD and Local Currency Issuance, across different EMs (Percent)



Note: In Figure 25, the red bars show the coupon rates for local currency issuance. The values are negative only for representational purposes but otherwise the coupon rate is always positive

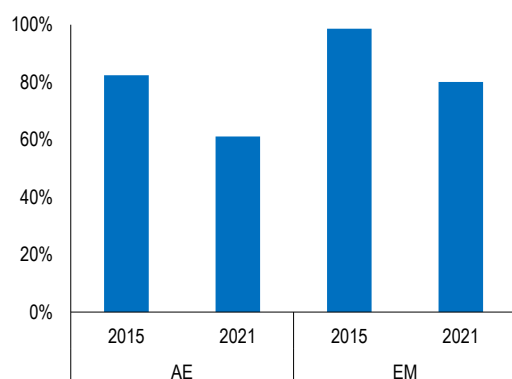
EM ESG Markets Differ from AE ESG Markets

Advanced economies had taken an early lead in the sustainable finance markets and thus the markets have matured significantly more. However, 2021 was the first year where emerging markets gained market share since 2016. Supra-nationals, which can play a catalyst in development local markets²², have also seen a significant rise in issuance.²³ This is crucial, as currently almost half of the EM sustainable debt is issued in foreign currency. This section briefly details some of the characteristics where EM sustainable finance markets differ from those in the advanced economies.

EM ESG ecosystem is more concentrated, but is converging to AEs

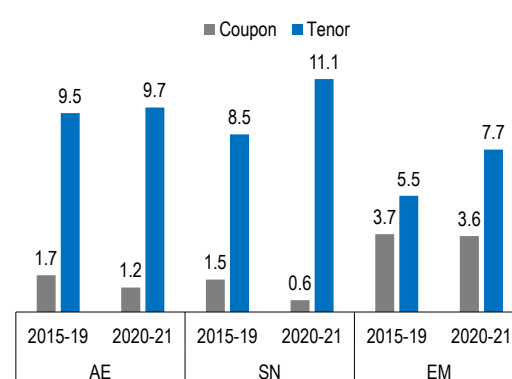
Since 2015, EMDE countries issuing ESG debt have increased from 5 to 32 in 2021, however this market is highly concentrated as the top 5 countries constitute almost 80 percent of the total issuance (Figure 26). AEs in comparison have seen much wider adoption. In 2021, all but 4 AEs issued ESG debt, and the share of top 5 countries in total issuance was ~60 percent. That said, both the segments have become less concentrated over time—indicating the market expansion. Interestingly, EMs' concentration ratio of 80 percent in 2021, is equivalent to the concentration ratio in AEs in 2015.

Figure 26. Share of top 5 issuers, by group



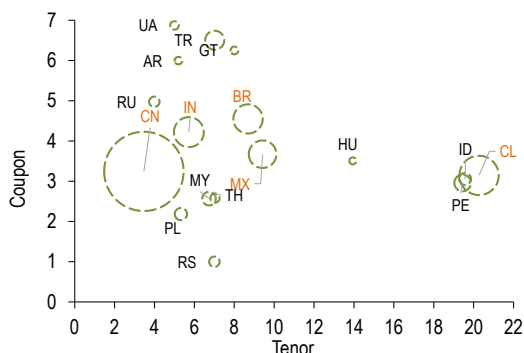
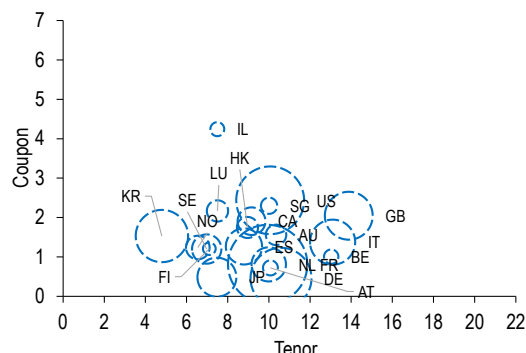
Sources: BloombergNEF, authors' calculations

Figure 27. Coupon and tenor (Percent, years)



²² In their report "Marathon or Sprint? The Race for Green Capital in Emerging Markets, 2021", Amacker and Donovan highlight that EMs need more long-term capital to fund their ESG policies, however the end EM investors view EMs as "macro-driven carry trade" and for shorter durations. In this context, international financial institutions and sovereign wealth funds can provide EMs with patient capital and risk-sharing which will facilitate development of local green debt markets.

²³ Between 2017 and 2021, sustainable debt issuance of supranationals has increased from \$13bn to \$201bn. Of which the institutions related to the European Union issued \$88 bn, while the World Bank Group and the Asian Development Bank issued \$41.74bn and \$2.6bn, respectively.

Figure 28. Average coupon and tenor for EMs**Figure 29. Average coupon and tenor for AEs**

Source: Bloomberg and authors' calculations

EM ESG debt has higher coupons and shorter tenors, reflecting the risk premia:

Owing to multiple factors, ranging from inherent risks (Broner et al., 2002)²⁴, depth of financial markets, liquidity (Mehl and Reynaud, 2005)²⁵, EMs have been issuing sustainable debt at much higher coupon and shorter tenors in comparison to AEs. This divergence is also reflected in the weaker credit ratings for EM issuers.²⁶ Average coupon for EMs in the last 2 years was around 3.6 percent, which compares with just 1.2 percent for AEs. Similarly, while the average tenor for EMs has risen in the last few years, it remains much shorter than AEs. However, some EM countries have raised debt with longer maturities in 2021. For most major EM issuers, except Chile, the average tenor was about 5 years in 2021. Chile, however, raised \$12.4bn in USD/EUR denominated debt, with a tenor of over 20 years. The sovereigns of Peru and Indonesia also were able to issue USD/EUR denominated debt with longer maturities. In comparison, AEs are relatively homogenous with Korea being the only country in the group to have tenor of less than 5 years (Figures 27–29).

Divergent trends in the sectoral contribution: In terms of sectoral decomposition, AEs have seen a rise in issuances from the financial sector, while that from the government-related sectors has declined. This is in contrast to the EM ESG issuers where the relative share of government agencies has risen, while issuances from financials have declined. More importantly, EM markets saw larger issuances from utilities and energy sectors which is encouraging from a market development perspective. The increased issuance from government related entities in EMs also reflect the fact that sovereigns and state-owned enterprises, play a much larger role in the respective financial ecosystems. In terms of the overall

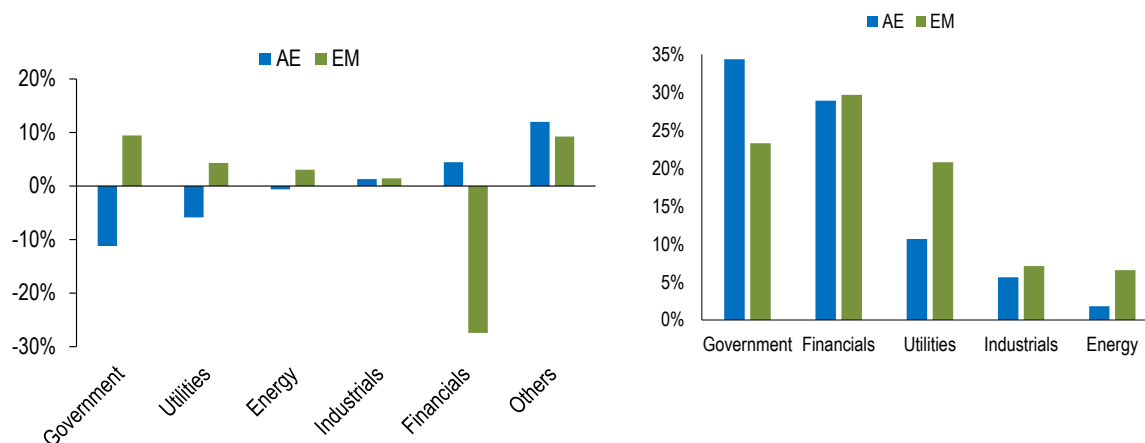
²⁴ In their paper “Why Do Emerging Markets Borrow Short Term?” Broner et al. construct a model as well as empirically test the model findings that long-term bonds of emerging markets bear higher risk premia, which leads to these markets borrowing short-term, albeit at the cost of a potential roll-over crises.

²⁵ Mehl and Reynaud in their paper “The Determinants of Domestic Original Sin in Emerging Market Economies” identify financial environment (includes size of local investor base and political economy considerations) along with macroeconomic policies and sovereign debt management, as key theoretical determinants of domestic “original sin”, i.e., inability of EMs to borrow in domestic currency at long maturities and fixed rates. Further, they empirically establish that the phenomenon is particularly strong in EMs with narrow investor base, and also high inflation, debt service-to-GDP ratio, and an inverted yield curve. While still emerging, the EM ESG debt is following the same trend.

²⁶ Median credit ratings of EM ESG new debt issuance in 2021 was BB in 2021 and has remained around the same level since 2016. In comparison, the credit rating of such AEs debt was BBB in 2021. However, as per Amacker and Donovan’s report “Marathon or Sprint? The Race for Green Capital in Emerging Markets, 2021”, within the EM space credit ratings have been sensitivity to governance risks but not to climate risks.

contribution, government sector remains the largest sub-sector in advanced economies, while financials remain the largest sub-sector for advanced economies (Figures 30 and 31).

Figure 30. Change sector share between 2016–18 and 2019–21 **Figure 31. Share of sectors in 2021**



Source: Bloomberg and authors' calculations

EM ESG: Key Development Areas

Progress on the Green Bond Principles has improved but with a high variation

ICMA green bond principles (ICMA June 2021. Voluntary Process Guideline for Issuing Green Bonds) are voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the sustainable finance markets.²⁷ Proportion of the EM sustainable debt issuance which adhere to these principles has improved over the years across all the four major metrics which supports the development of the sustainable finance ecosystem (Figure 32). However, there is a significant scope of improvement.

- The overall adherence remains quite low at less than half of the total issuance
- There is a big variation across EMs. For the group of EMs which are laggards on these parameters, the adherence is as low as just 20 percent of the total issuance (Figure 33)

While adherence to these principles is voluntary, it can help develop the market in multiple ways: 1) Aiding Investors: by promoting availability of information necessary to evaluate the environmental impact of their Green Bond investments; and 2) Assisting Underwriters: by offering vital steps that will facilitate transactions and market integrity.

²⁷ 1) Project Selection: The issuer of a green bond should outline the decision-making process it follows to determine eligibility of the projects; 2) Management of proceeds: the net proceeds of the green bond should outline the decision-making process it follows to determine the eligibility of the projects; 3) Assurance: the issuer should obtain a third-party verification of green credentials as either: a second-party opinion, third-party certification, green bond audit, or green rating; 4) Reporting: Issuers should report on the projects financed, project performance, and preferably the environmental impact at least once a year.

Figure 32. Proportion of the issuance which has disclosures on the usage metrics of the project, over time (Percent)

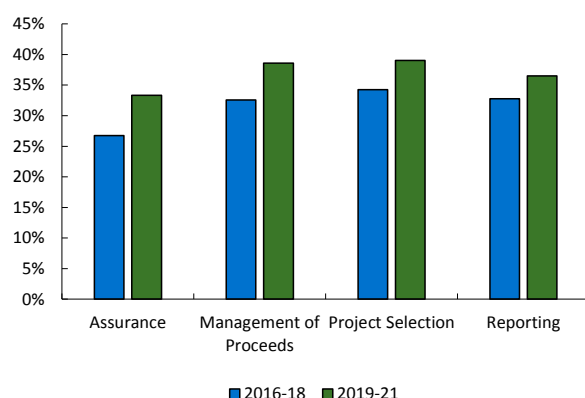
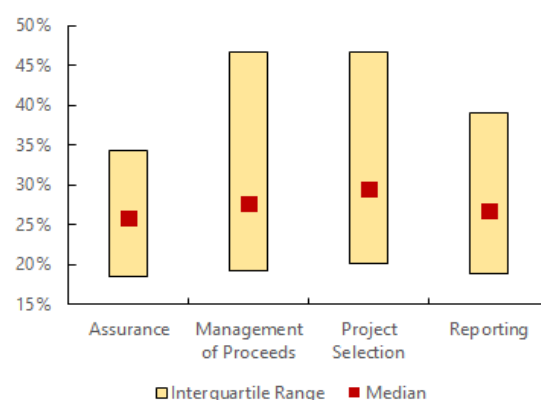


Figure 33: Comparison within different EMs across some of the usage metrics



Source: Bloomberg NEF, Authors' calculations

Note: For Figure 33, the data consists of all the issuance from 2015-2021 end. In Figure 32, the unit is as a percent of the total issuance, and Figure 33 is as a percent of all countries in the sample.

Data Disclosure is poor, especially for the environment segment

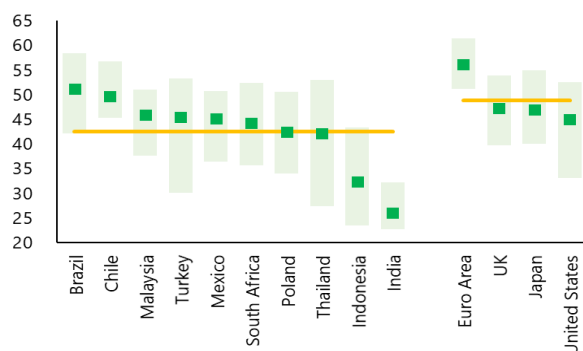
A key challenge with the development of the sustainable ecosystem is the progress on data disclosures. Reliable and comparable data are crucial in order for financial sector stakeholders to assess financial stability risks, properly price and manage ESG-related risks, and take advantage of the opportunities arising from the transition to a green economy.²⁸ Figure 34 plots the extent of data disclosure by major corporates. Emerging Markets have an average disclosure score of 40 which compares with almost 50 for the advanced economies. Furthermore, there is a big variation across EMs with Asian countries (most notably India²⁹, Indonesia and Thailand) lagging significantly on this metric. Within the disclosure metrics, the disclosure is highest for the governance segment followed by the social segment (Figure 35). Environment related disclosure metrics are notably lower, which is especially relevant given the significant climate related risks faced by emerging markets. Data by ESG Risk AI for India shows a very strong correlation between data disclosure transparency and actual ESG scores. This potentially shows that firms with weak progress on the ESG front, do not disclose these metrics which could further amplify the overall financial stability risks.

²⁸ Network for Green and Financial Systems: "Progress Report on Bridging Data Gaps, May 2021"

²⁹ In 2021 India introduced a new ESG related reporting mechanism for companies, BRSR, which is a progress, but more measures are needed for expansion of sustainable finance markets. Goel and Natalucci (Development of India ESG Financial Market, 2021) identify building information management systems and addressing green-washing concerns by defining labels like "green bonds" as crucial next steps towards that end.

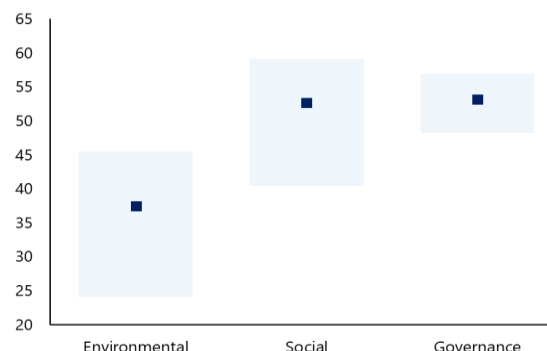
Figure 34. Average ESG Disclosure Score across major EMs and AEs

(Index; Based on bloomberg indices)

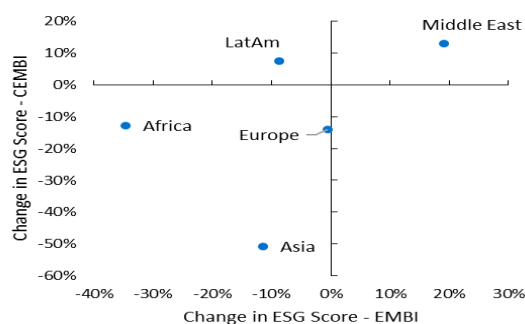


Source: Bloomberg, Authors' calculations

Note: For both the figures, the data is as of 2021-end

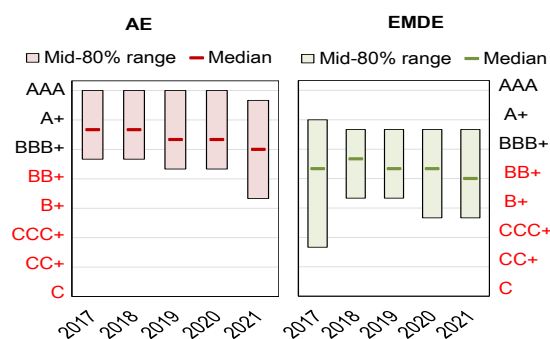
Figure 35: Median Disclosure Score across ESG different segments for EMs**ESG Scores are weak and worryingly, falling**

JP Morgan's data shows that the ESG scores for most EM regions have declined in the last few years and especially post pandemic (Figure 36). The decline reflects the challenged domestic fundamentals of emerging markets (GFSR, 2019). Research has shown a strong correlation between ESG scores and credit ratings.³⁰ The decline in the ESG scores (Figure 37) thus also reflects the strong worsening of the credit ratings for emerging markets in the last few years (Goel and Papageorgiou, 2021).

Figure 36: Median Disclosure Score across ESG different segments for EMs

Source: Bloomberg, JP Morgan and authors' calculations

Note: In Figure 36, the changes are calculated as of end-2019, so capturing the post pandemic change. CEMBI bonds cover the external corporates and EMBI bonds capture the external sovereign (and in some cases—quasi sovereign) bonds. Both the indices are based on the flagship indices by JP Morgan.

Figure 37. Median and mid-80 percent range for debt ratings

³⁰ In their study, Chodnicka-Jaworska et al. study the impact of ESG measure on credit ratings of non-financial institutions across sectors and find higher ESG risk to have a strong negative impact on the credit ratings of these institution. However, the degree of impact varies across sectors. In conclusion, ESG measure have an impact on the reputational and estimation of default risk as measured by the rating agencies.

Beyond these EM specific challenges, there is also a significant debate about the relationship and dynamics between ESG and the overall sustainable finance markets.

1. For instance, [Simpson et al. 2021](#) notes that only one out of 155 upgrades cited reduced emissions as a factor. MSCI's ESG ratings look at a company's exposure to environmental impacts, and not necessarily the company's environmental impact, which potentially contradicts the logic of ESG; and no matter how large a company's emissions are, they may not count in MSCI's ESG rating if regulations aimed at mitigating climate change do not pose a threat to the company's profitability
2. [Baines and Hager 2022](#) also note that there is evidence that the ESG funds from big asset managers not only invest in many of the same "Carbon Majors" (a small group of fossil fuels, cement and mining companies that are responsible for the bulk of industrial GHG emissions) as their non-ESG funds but tend to vote the same way at Carbon Major Annual General Meetings, including on environmental resolutions.
3. While there is an increasing awareness about some of these issues, there still needs to be a lot of progress towards sensitizing financial stakeholders to the importance of these issues. Proposals calling for several SIFIs to stop fossil fuel financing consistent with the IEA's 2050 net zero scenario won less than 13 per cent support from all shareholders ([Temple-West et al. 2022](#)). Global banks provided \$742 billion in financing to coal, oil and gas companies in 2021, despite climate pledges by lenders that signed up to GFANZ ([Hodgson 2022](#)).

Policies

The recent growth of ESG markets represent a unique opportunity for EMs to access more stable funding sources and develop a broader and more mature investor base and financial system. With many EMs highly exposed to climate hazards and already facing related transition challenges, private finance will play a crucial role in mitigating these risks and strengthening the financial sector (NGFS, 2019). But there are also risks that EM policymakers need to monitor and challenges they need to address. Financial stability risks include a different investor base compared with more traditional investors that is potentially more sensitive to global financial conditions—in particular given the technology-heavy composition of many ESG indices. That's an important consideration given the current backdrop of rising interest rates in advanced economies raising interest rates, which is resulting in a tightening of financial conditions around the world. Some of these risks are especially notable for EMs and their transition to a green economy.³¹ From a market development and transparency perspective, sustainability data quality and disclosures are poor for a large number of EMs. While adherence to ICMA principles is rising, there is still a weak tail of countries from this standpoint, and ESG scores have declined for most EMs—especially post pandemic.

Policy options useful to develop mature and transparent sustainable finance markets in EMs include:

- 1) On climate, policymakers should strengthen the **global climate information architecture**. This architecture includes three components: (1) high-quality, reliable, and comparable data; (2) sustainable finance classifications that align investments with climate goals; and (3) a harmonized and consistent set of climate-related disclosure standards. This could help 1) incentivize efficient pricing of climate risks and opportunities; and 2) avoid greenwashing (excessive claims about environmental soundness) and foster sustainable financial markets.
- 2) **Data quality challenges in EMs:** EMs suffer from both availability of data as well as the quality of it. As per an NGFS report, stakeholders face limited availability of forward-looking data in-terms clearly spelt out of emission reduction targets and the transition policies, while also grappling with limited macro data and constraints to access whatever limited data is available. Thus, efforts must be made to standardize data availability, atleast for the biggest corporates. For instance, NGFS recently launched a [public consultation](#) on its repository of climate data needs and available sources. The repository is intended as a directory of available climate data based on specific needs and stakeholders use cases. This is also critical because EMs play an extremely important role in the global value chains and thus a weaker node impacts the data quality throughout the chain.
- 3) In line with other major economies (Shen et al., 2020), EMs can also **develop a better information management system** that may help reduce maturity mismatches, lower borrowing costs, and lead to efficient resource allocation in this segment. For instance, RBI 2019 notes that higher financing costs for the green bond issuers is a significant impediment to market development, and the information asymmetry is a key reason behind that.

³¹ According to joint report by IEA and the World Bank 2021—Financing Clean Energy Transition in Emerging and Developing Economies—in order to achieve net-zero emission by 2050 target, annual clean energy investments in EMs will have to reach \$1 trillion by late 2030, which is 7 times of 2020 levels (~\$150 bn.). Further, IEA expects a large chunk (~70 percent at global level, IEA 2021, “The cost of capital in clean energy transition”) of this investment to be made by the private sector, for whom access to low-cost financing is paramount. The report estimates, while access and affordability are key energy transition in EMs, the nominal financing costs are up to seven times higher than in leading AEs.

- 4) **A formal Green Finance definition** could also mitigate the risks of greenwashing (which is very prevalent as discussed in Elmall and others, 2021) and bring better reporting and disclosure to investors and financiers (European Commission, 2017). NGFS, 2019 also noted that a definition would also improve the financial sector's ability to identify, assess, and control the financial risks emanating from climate change. **Adherence to ICMA's green bond principles**, more specifically, can help strengthen the investor confidence in these products and help establish a local market.
- 5) The **integration of ESG factors into firms' business models**—prompted either by regulators or by investors—may help mitigate some of these risks. ESG issues can have a material impact on corporate risk profile and the system's financial stability (IMF 2019, 2020).
- 6) **There is a strong need to sensitize EM's financial sector about the importance of Green and Sustainable Finance** and the need for accelerating capital investment to facilitate the transition to a low-carbon economy. There are only a handful of institutions that are participating in the sustainable finance market and are signatories of the Principles for Responsible Investment (PRI)
- 7) **Data disclosure requirements** are key in order to enable investors to price in the risks appropriately and develop sustainable finance market in EMs. Some countries like India have launched new guidelines to make these disclosures mandatory. Company disclosures will also lead to an expansion of the policy and research analysis. As noted by Schmittman and Han Teng (2021), most of the analysis so far is focused on the green bond markets. Data constraints in EMs, however, prevent a thorough analysis of bank based green products and issuer-based instruments.
- 8) **Achieving global sustainability disclosures standards** to foster ESG markets and avoid fragmentation in global capital markets and in regulatory approaches. For instance, the IFRS Foundation's International Sustainability Standards Board (ISSB) has recently outlined the necessary steps required to establish a comprehensive global baseline of sustainability disclosures. It intends this global baseline to reduce the existing and further fragmentation of sustainability disclosure requirements.
- 9) **Incentivizing green projects** can also help develop sustainable finance markets and raise the awareness of various stakeholders market. This can be achieved through tax breaks (for solar panels, green instruments for instance), or penalizing firms not aligned with the Paris accord.

Conclusion

Sustainable finance is a key focus area for global investors and policy makers. This working paper is one of the first studies to focus specifically on sustainable finance markets in emerging markets. 2021 was a breakout year for EM ESG markets with record flows across asset classes, most notably the fixed income. Sustainable finance markets expanded not only in size but also across other dimensions—for example, with a meaningful pickup in issuance in EMs excluding China (China was the second largest issuer globally in 2021), and sustainable debt excluding green bonds. The greater share of ESG instruments in the EM financing mix, especially foreign currency, also raises issues related to financial stability in emerging markets. Sustainable finance markets in EMs differ from those in advanced economies as EM ESG ecosystem is still more concentrated, embeds a significant risk premia, and is dominated by the financial sector. EMs also face a number of challenges including data disclosure quality, data standards and declining ESG scores. The paper underlines key policy suggestions that can help address the challenges and help in the development of the sustainable finance ecosystem in EMs.

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