

SustainaWeekly

Limited progress at COP27

- ▶ **Economist:** COP27 made limited progress on the key issues on the agenda. The end communique did not include a pledge to shift away from fossil fuels. The agreement to set up a Loss and Damage Fund was an important step, but there were no specific funding commitments, and it is only a part of the external funding needed. Meanwhile, the step up in emission pledges was modest.
- ▶ **Strategist:** We show that ESG ratings have a modest positive correlation with credit ratings in the case of MSCI ESG ratings, but not of those from Sustainalytics. We argue that screening companies for better ESG prepositions could add a new dimension for credit assessments and ultimately act as an important tool for bond investors to identify companies that have a better credit quality.
- ▶ **ESG Bonds:** There has been a special focus on the debt sustainability of developing countries at COP 27. The IMF and other international organizations have sounded the alert on rising debt distress in those countries. Other climate financing alternatives are then needed to alleviate this so-called 'debt trap'. The Global Sustainable debt market could also benefit from this trend.
- ▶ **ESG in figures:** In a regular section of our weekly, we present a chart book on some of the key indicators for ESG financing and the energy transition.

In this week's SustainaWeekly, we start by looking at what progress was made at COP27, which concluded over the weekend. One of the most used acronyms at COP this year was apparently 'WTF', which of course stands for 'where is the finance'. The agreement recognises 'the growing gap' between the needs of developing countries and the financial assistance available for adaption and mitigation and loss and damage. Although the agreement to set up arrangements for Loss and Damage funding is an important step, we note that an actual commitment to substantial funds is missing. The issue of who pays and how much remains unresolved. Meanwhile, Loss and Damage is a part of the external funding needed to battle climate change, but the funding needs are far broader and greater. We then look at the correlation between ESG ratings and corporate credit ratings for both corporates and financial institutions. We conclude that ESG ratings can add value over and above credit ratings. Finally, we follow up on the topic of climate finance for developing economies, the issues of debt sustainability in many countries and the possible role of the sustainable debt market.

Enjoy the read and, as always, let us know if you have any feedback!

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Limited progress at COP27

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- ▶ **COP27 made limited progress on the key issues on the agenda**
- ▶ **The end communique did not include a pledge to shift away from fossil fuels**
- ▶ **Agreement to set up a Loss and Damage Fund, but no details or commitments**
- ▶ **Recognition on need for mitigation finance for developing countries, but no more money**
- ▶ **Modest step up in emission pledges, but key is any case the implementation**

With COP27 concluding over the weekend, we take a look at what progress has been made. We assess the overall agreement, climate finance for developing countries and the outlook for global warming following the summit. Our judgement on all three areas is that limited progress has been made.

Commitment to 1.5 °C reaffirmed but no pledge on fossil fuels

The COP27 climate summit concluded in the early hours of Sunday. The conclusion was delayed as reaching agreement across various issues proved very difficult and ultimately the result was a watered-down final agreement. The parties reiterated 'that the impacts of climate change will be much lower at the temperature increase of 1.5°C compared with 2°C' and resolved 'to pursue further efforts to limit the temperature increase to 1.5°C'. In addition, it was recognised that 'limiting global warming to 1.5°C required rapid, deep and sustained reductions in global greenhouse gas emissions of 43 per cent by 2030 relative to the 2019 level' and that this required 'accelerated action in this critical decade'. However, more concrete commitments to make the resolve credible were lacking.

Frans Timmermans, Executive Vice President of the European Commission with responsibility for climate policy, expressed disappointment that more was not achieved, stressing 'we have all fallen short'. Alok Sharma, the President of COP26 outlined the areas that were noticeably absent: 'peaking emissions by 2025 is not in this text. Follow-through on the phasedown of coal is not in this text. The phasedown of all fossil fuels is not in this text'. One can argue whether such pledges mean much given that it is actions that matter (as discussed further below). However, it does raise questions about the degree of resolve.

Principle of funding for Loss and Damage

In what was the main step forward following COP27, it was agreed that a fund (and broader funding arrangements) would be set up to provide assistance to poor countries that suffered from climate disasters. The parties recognised 'the growing gravity, scope and frequency in all regions of loss and damage associated with the adverse effects of climate change, resulting in devastating economic and non-economic losses, including forced displacement and impacts on cultural heritage, human mobility and the lives and livelihoods of local communities'. Against this background, there was an 'urgent and immediate need for new, additional, predictable and adequate financial resources to assist developing countries that are particularly vulnerable to the adverse effects of climate change'.

The agreement to set up a fund has been hailed as a 'historic step' because of the underlying (albeit not explicitly stated) principle that wealthier countries that have contributed most to climate change, should support poorer countries that suffer most from it. However, there are no details or concrete commitments at this stage. Without being too cynical, we note that the main concrete action at this stage is to set up a committee, which will work out 'the operationalization of the new funding arrangements for responding to loss and damage and the fund'. In particular the committee will (a) establish institutional arrangements, modalities, structure, governance and terms of reference for the fund (b) define the elements of the new funding arrangements (c) identify and expand sources of funding and (d) ensure coordination and complementarity with existing funding arrangements.

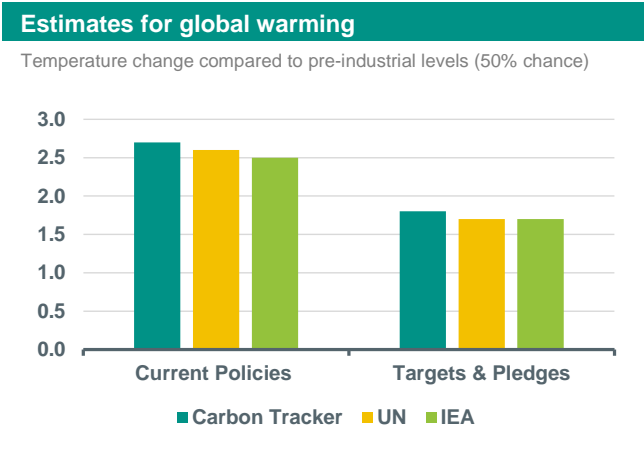
WTF?

One of the most used acronyms at COP this year was apparently 'WTF', which of course stands for 'where is the finance'. The COP27 agreement recognises 'the growing gap' between the needs of developing countries and the financial

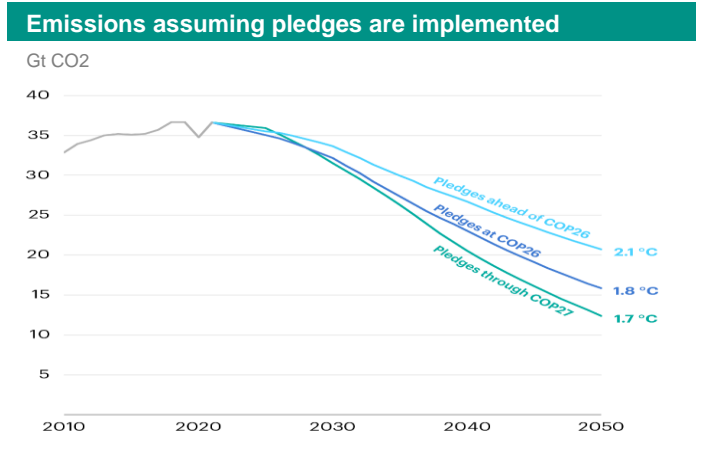
assistance available for adaption and mitigation and loss and damage. Although the agreement to set up arrangements for Loss and Damage funding is an important step, we note that an actual commitment to substantial funds is missing. The issue of who pays and how much remains unresolved. One of the key issues is that a number of developed countries think that large emitters such as China should be contributing to such a fund, even though it is currently classed officially as being on the other side of the ledger. Meanwhile, Loss and Damage is only a part of the external funding needed to battle climate change, but the funding needs are far broader and greater. The external financing needs of developing and emerging economies outside of China are estimated to total USD 1 trillion per annum by 2030 (see our note [here](#)). This covers what is needed to transform the energy system, investing in adaptation and resilience and natural capital as well as for coping with the loss and damage from climate change. Furthermore, large number of developing countries are in risk of debt distress, as set out in another note in this publication.

Trajectory for global warming little changed from COP26

On the basis of the latest information, the outlook for global warming under different assumptions has not changed significantly at COP27 compared to COP26. This reflects that there have been limited updates of country’s emission reduction plans (Nationally Determined Contributions, NDCs) in the run up to or during the climate summit. In addition, of the newly submitted NDCs, only a few have stepped up ambition, and the very largest emitters have not in any case submitted new plans. According to Climate Action Tracker, global warming is heading for 2.7°C based on current policies, but can be as low as 1.8°C if all pledges and targets (including those under discussion) are fully implemented, which are broadly in line with the organisation’s estimates post COP26. These are similar outcomes estimated by the IEA and the UN (see [here](#) for more). The IEA estimates that on the basis on announced pledges, global warming is heading for 1.7°C, which is slightly better than the 1.8°C it estimated following COP26, thanks to new pledges, notably Indonesia’s.



Source: Carbon Action Tracker, IEA, UN



Source: IEA

Implementation gap much more important than pledges gap

In any case, the gap between global warming on the basis of pledges and the 1.5°C scenario is smaller than the gap between pledges and policies. This points to the urgent need to implement the policies and actions necessary to meet the pledges and targets that have been committed to in recent climate summits.

ESG ratings can add value over and above credit ratings

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- ▶ **We show that ESG ratings have a modest positive correlation with credit ratings in the case of MSCI ESG ratings, but not of those from Sustainalytics.**
- ▶ **This MSCI correlation seems to be better when looking at high-yield (HY) companies.**
- ▶ **The fact that we find a correlation with MSCI ESG ratings, but not Sustainalytics, could be explained by the fact that MSCI puts more weight on governance factors, as credit ratings are usually focused on the ‘G’ pillar.**
- ▶ **We argue that screening companies for better ESG prepositions could add a new dimension for credit assessments and ultimately act as an important tool for bond investors to identify companies that have a better credit quality.**

ESG factors can affect a company’s cash flows and therefore, the likelihood that it will default on their debt obligations. Besides numerous research studies confirming this, the point is also set out by the UN PRI (Principles for Responsible Investment) as one of the reasons why investors should incorporate ESG into investment decisions (see [here](#)). As credit ratings are ultimately an estimate of a company’s ability to fulfil financial obligations and reflect therefore its probability of default, one could assume that ESG factors are also incorporated into credit rating assessments. Is this the case in reality, though?

Relationship between ESG ratings and credit ratings

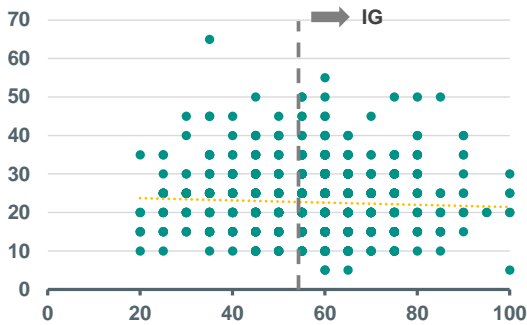
In order to investigate the inclusion of ESG factors into credit ratings, we make use of ESG ratings as a proxy for how a company performs with respect to ESG factors. MSCI ESG ratings, for example, “aim to measure a company’s resilience to long-term, financially relevant ESG risks”. Similarly, Sustainalytics’ ESG ratings “measure the degree to which a company’s economic value is at risk driven by ESG factors” (see [here](#) and [here](#), respectively). Hence, a company that either has low exposure to material ESG factors, or manages them well (or both), will have a higher ESG rating.

If a company is less likely to have its firm value reduced due to ESG factors (that is, it has high ESG rating), then one could also expect it to have a higher credit rating (all else equal). For that analysis, we have looked at MSCI and Sustainalytics as ESG rating providers, and Moody’s and S&P as credit rating agencies – in both cases, due to the large universe of rated companies by these institutions. We have converted Moody’s and S&P ratings to numerical scores, with each rating class separated by 5 (this means that an AAA (S&P) / Aaa (Moody’s) rated company receives a score of 100, an AA+ (S&P) / Aa1 (Moody’s) company receives a score of 95, etc). For MSCI ESG ratings, which are also given in alphabetic form, we have converted it to numerical scores separating each class by 15 (AAA rating is a score of 100, AA rating is a score of 85, and so on). Sustainalytics’ scores were also rounded to the nearest 5 to ensure less variability (this did not affect our final results). Our analysis universe involves both, corporates and financial institutions, although we will use the term “company” going forward for simplification purposes. We do not limit our analysis to EUR issuers. This allows us to have a big sample universe, with around 1,000 observations per ESG rating provider.

Let’s first look at Moody’s. The charts on the next page show the relationship between Moody’s credit ratings and both, Sustainalytics and MSCI ESG ratings. At first sight, we see a big dispersion between credit ratings and ESG ratings: for example, a Baa2 company can have a Sustainalytics’ ESG rating ranging from 5 (negligible risk) to 55 (severe risk). Same is true when also looking at MSCI ratings. However, MSCI ratings seem to have a higher correlation with Moody’s credit ratings than Sustainalytics’. And indeed, as shown by the trendlines on the charts below, there seems to be a small positive correlation between MSCI and Moody’s, while there is no correlation at all when looking at Sustainalytics. And indeed, the correlation between Moody’s and Sustainalytics stands at nearly zero (-0.05 to be more precise), while for MSCI this is 0.2. Moreover, the positive correlation between MSCI and Moody’s also makes sense: a company that performs better in terms of ESG, is, for example, exposed to less litigation risks, transition risks, governance risks etc, which could imply a lower probability of default and therefore, a better credit rating.

No correlation between Moody's and Sustainalytics...

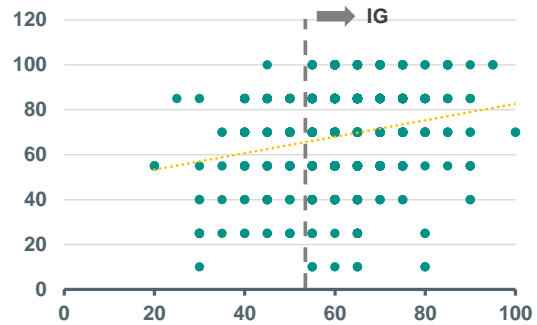
Sustainalytics ESG rating score



Source: Moody's, Sustainalytics, ABN AMRO Group Economics. Note: x-axis = Moody's credit rating. Number of observations: 906. Yellow dotted line indicates trendline.

...while it is slightly positive for Moody's and MSCI

MSCI ESG rating score



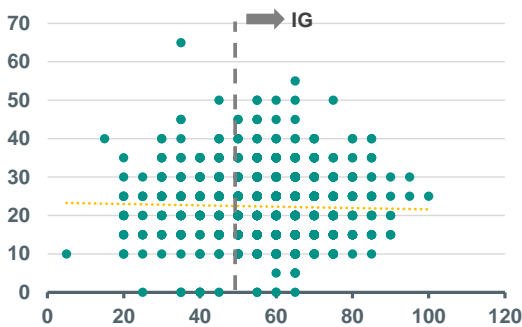
Source: Moody's, MSCI, ABN AMRO Group Economics. Note: x-axis = Moody's credit rating. Number of observations: 602. Yellow dotted line indicates trendline.

We have also analysed whether our conclusions change if we look at exclusively Investment Grade (IG) or High Yield (HY) issuers. This however does not seem to be the case. On the other hand, the correlation between Moody's credit ratings and the MSCI ESG ratings seems to be slightly higher for HY companies (0.2 for HY and 0.1 for IG). HY issuers are usually less transparent and/or lack in the quality of their disclosures, which can impact both, the ESG and the credit assessments. Furthermore, HY issues usually have short or inconsistent track records and management turnover, which can affect assessment of management quality, which is also an input for both, ESG and credit ratings. Another point is that some HY companies have complex ownership structures and/or high ownership concentration (that is, more control of the board of directors by the owner), which could be driven by their higher risk tolerance. Lack of ownership independence also usually weights into both, ESG and the credit quality assessments. That could explain why we also find a higher correlation between MSCI ESG ratings and credit ratings for HY issuers.

Looking at S&P credit ratings our conclusions are the same. There is no relationship between S&P and Sustainalytics ESG ratings, but we do find a positive correlation with MSCI. S&P credit ratings correlation with Sustainalytics stands at nearly zero (-0.04), but this is 0.3 for MSCI. Hence, there seems to be a stronger correlation between MSCI and S&P ratings than between MSCI and Moody's ratings. Also when considering exclusively IG or HY companies, we see a stronger correlation between MSCI ratings and S&P ratings considered as HY (correlation of 0.2 vs 0.1 for IG issuers). Again, correlation with Sustainalytics ESG ratings are zero, independent of the credit rating threshold.

No correlation between S&P and Sustainalytics...

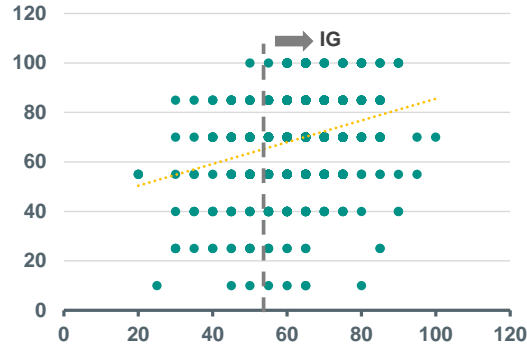
Sustainalytics ESG rating score



Source: S&P, Sustainalytics, ABN AMRO Group Economics. Note: x-axis = S&P credit rating. Number of observations: 1,090. Yellow dotted line indicates trendline.

...While it is again slightly positive for S&P and MSCI

MSCI ESG rating score



Source: S&P, MSCI, ABN AMRO Group Economics. Note: x-axis = S&P credit rating. Number of observations: 724. Yellow dotted line indicates trendline.

One reason that could explain why we only see a relationship between MSCI ESG ratings and credit ratings, is that perhaps MSCI puts more weight into governance factors than Sustainalytics does (see our box at the end of the piece for more details on the differences in methodologies). Credit ratings are usually more focused on governance factors, as some argue that weak governance translates into higher downside risks (as in, bankruptcy risks and therefore the ability of companies to pay back debt) than environmental and social aspects. In that case, fraud prevention and good governance are seen as better protectors against negative credit events, and are therefore more explicitly incorporate into credit analysis. This could also explain why we see a stronger correlation between HY credit ratings and MSCI ESG ratings, as HY companies have a history of performing worse in terms of governance than IG ones. Their smaller size also puts them on the backfoot in terms of strong governance systems versus a large investment grade company.

It is important to note that credit rating agencies have only recently started to incorporate ESG aspects. It was mostly only after 2016 that they started to look at a range of ESG factors to judge companies' ability to reply to ESG risks and assess how these could have potential financial impacts. Hence, while credit ratings are still mostly focused on governance, it could be that as methodology develops, these agencies also start to look more exclusively at the 'E' and 'S' pillars from a downside risk perspective, rather than opportunity one, which seems to be the focused at the moment. Overall however, the fact that we find none (in the case of Sustainalytics) or very low (in the case of MSCI) correlation between ESG ratings and credit ratings highlights that the latter does not seem to fully capture ESG risks. That implies that ESG incorporation into investment decisions can add a new dimension for investors when assessing the credit quality of a company.

Small correlation between MSCI and Sustainalytics

The difference in results when looking at MSCI and Sustainalytics triggered us to also investigate to what extent MSCI and Sustainalytics' ratings are correlated. An analysis from our sample allows us to see that there is almost no correlation between MSCI and Sustainalytics' ESG ratings (see table below), while Moody's and S&P have an extremely high correlation (of almost 1). And even more interesting: there seems to actually be a negative correlation between MSCI and Sustainalytics, of -0.3. That means that a company that scores very well in terms of ESG according to Sustainalytics, could actually score poorly according to MSCI. This negative correlation seems to be more apparent for IG companies.

Correlation matrix

	MSCI	Sustainalytics	Moody's	S&P
MSCI	1.00	-0.27	0.22	0.27
Sustainalytics	-0.27	1.00	-0.05	-0.04
Moody's	0.22	-0.05	1.00	0.96
S&P	0.27	-0.04	0.96	1.00

The above shows why our conclusions have been very similar independent of when considering S&P or Moody's as credit ratings, but have however yielded different results when looking at MSCI or Sustainalytics. A study by Berg et. al (see [here](#)) has shown that when taking into account only the governance dimension of these two ESG ratings, the correlation is even lower. The study shows that while on the environmental and social pillars, MSCI and Sustainalytics have a correlation of 0.37 and 0.27, respectively, this is only 0.16 for governance. Hence, once again, this reinforces our view that it is likely due to MSCI's higher weight on governance factors compared to Sustainalytics, that explains the fact that only MSCI seems to be somehow correlated with credit ratings.

The very (negative) correlation between MSCI and Sustainalytics also allows us to conclude that while incorporating ESG into investment decisions can add a wider dimension to credit analysis of companies, in practice, the different approaches and hence, different views on the ESG profile of a company by different ESG providers should also make this process difficult to apply in practice.

Investors can use ESG to find companies with a better credit quality

Overall, this could prove to be an important factor of consideration for investors. If credit investors are mostly focused on a company's ability to repay debt, whose likelihood is gauged by the credit ratings, a company which has a good MSCI ESG

rating, or one which has just been upgraded to a higher rating, could also eventually prove to have a better credit quality. High ESG-rated companies are also usually more transparent, in particular with regards to their (ESG) risk exposures. They also have a better risk management and good governance standards, and all this should translate as well into a better credit rating, even if only in the long-term. We therefore show that besides financial implications from investing in ESG bonds (such as higher “greeniums” driven by high demand from dedicated ESG funds), credit investors could also add to the list the fact that better ESG-positioned companies (proxied by MSCI ratings) can also develop a lower probability of default. Investors should also therefore take into account the relationship between ESG factors and the financial impact it can have on companies.

What are the key differences between MSCI and Sustainalytics’ ESG rating methodologies?

While both providers mainly identify ESG factors that are material to companies, assign weights for these factors and then score the company against them, there are some key differences in terms of methodologies. First, the definition of materiality differs. For MSCI, both risks and opportunities are considered to be material. That is, both the potential costs that can be incurred from a certain ESG factor as well as the potential to capitalize on it for profits. Sustainalytics, however, considers a factor to be material if its presence or absence in financial reporting is likely to influence the financial risk and return profile of a company. Furthermore, while MSCI scores capture both exposure (how much a company is exposed to an ESG factor) as well as management scores (how well the company manages it), Sustainalytics ESG ratings are ultimately an assessment of the unmanageable risk (which is the exposure score minus the management - or more precisely, “managed” - score). Lastly, while MSCI focuses its analysis on 68 indicators (and 35 “key ESG issues”), Sustainalytics has a broader coverage of 163 indicators.

The Climate Finance Trap

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- ▶ **There has been a special focus on the debt sustainability of Emerging and Developing Economies (EMDEs) at COP 27**
- ▶ **The IMF and other international organizations have sounded the alert on rising debt distress in those countries**
- ▶ **Other climate financing alternatives are then needed to alleviate this so-called ‘debt trap’**
- ▶ **The Global Sustainable debt market could also benefit from this trend**

Emerging and Developing Economies (EMDEs) have been at the centre of COP 27 this year. This also reminded us of their crucial role in the fight against climate change as those economies account for two-thirds of global greenhouse gas emissions (including China), and are also the countries that are most vulnerable to climate hazards. As such, these economies require significant financing in the upcoming years to mitigate and adapt to the physical effects of climate change. However, most of the financing provided by the developed economies is mainly composed of loans, which adds to the high debt levels of EMDE countries. Not to forget the rising interest rate environment, which leads to higher sovereign borrowing costs. These factors lead to the so-called “debt trap”, which makes it difficult for most of those regions to meet pressing climate financing needs.

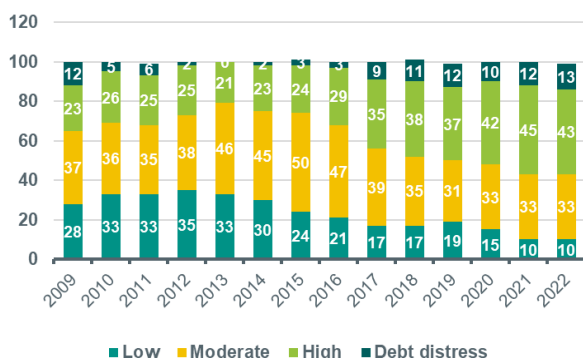
Is Climate Finance pushing EMDE countries into a debt crisis?

As explained in our Sustainaweekly note from last week (see [here](#)), there is a huge external financing shortfall for EMDEs to mitigate and adapt to climate change and there is a lack of support from ‘rich countries to ‘poorer’ countries. Indeed, the commitment taken during COP15 to mobilize jointly USD 100bn per year by 2020 to help developing countries in their climate mitigation and adaptation is lagging. Furthermore, the “debt trap” has also been the subject of many discussions at COP27 given the significant rise of sovereign borrowing costs this year. As highlighted by the OECD report (see [here](#)), loans represented the biggest share of the financial instrument split in both bilateral and multilateral public finance in 2016-2020. Thus, this adds to the debt sustainability issue most of EMDEs are already facing.

This concern was stressed in the summer by the IMF Managing Director Kristalina Georgieva, who asserted that one-third of all developing countries and two-thirds of low-income countries are at risk of debt distress. Particularly as the external debt stocks continue to expand on the back of loan-based financing provided by advanced economies. As shown in the graph below, the proportion of countries in debt distress, or at high risk of debt distress has been continuously rising and has now reached around 60%. Moreover, the rise in interest rates worldwide is an additional headwinds for EMDEs facing a slower economic recovery with government deficits rising since the pandemic. Not to forget the appreciation of the US dollar this year, which causes a higher risk for those economies as most of their debt are dollar-denominated. Therefore, all of these factors combined add to the difficulties of servicing debt for many EMDE countries.

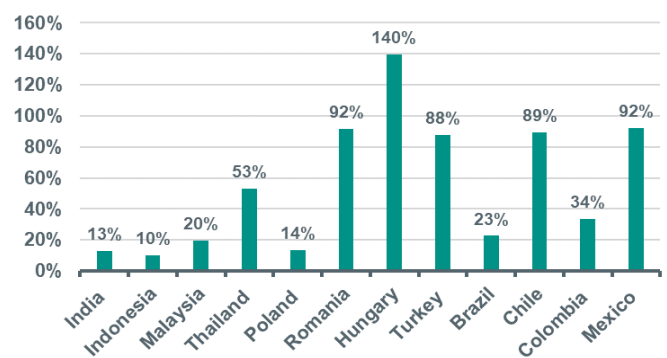
Debt risks continue to rise among low-income countries

Proportion of countries in specific debt distress levels



Borrowing costs have surged in 2022

% Change in 10y Government bond yield (YTD)



Note: Debt sustainability analysis on Low-Income countries, as of March 31, 2022
 Source: IMF LCI DSA database

Source: Independent High-Level Expert Group on Climate Finance

Other climate financing alternatives are needed

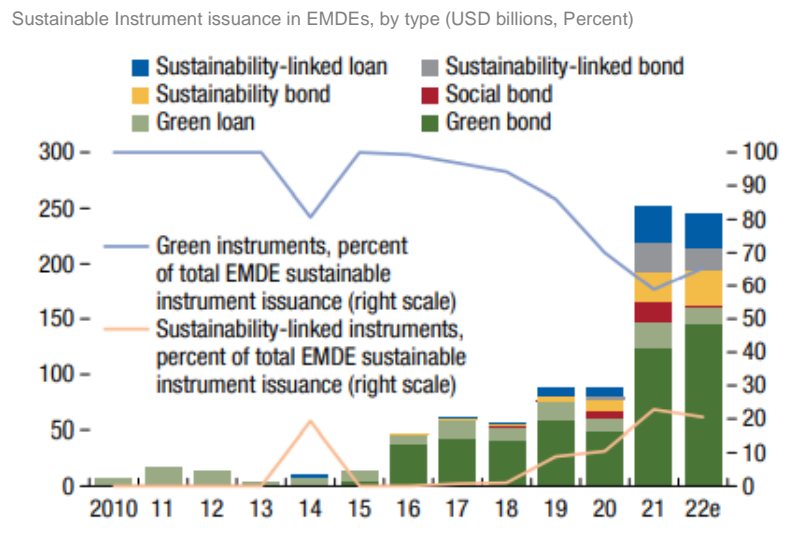
Aside from the need to have the rich countries meet the USD 100bn commitment in the coming years, it seems clear that EMDEs need more flexibility and less budget-constraining financing support. One approach would be to increase the proportion of grants relative to loans as these precipitate more and more countries into unsustainable debt levels. This also refers to a greater reliance on more concessional than on non-concessional finance. Put simply, concessional finance represents a range of products offering below-market interest rates, which makes it a cheaper borrowing facility. Another alternative discussed during COP 27 is a loss-and-damage facility, which would help channel funds from rich countries that contributed the most to global emissions historically, to countries that are on the front lines of climate change.

Sustainable debt issuance expected to continue to rise in the following years

Another alternative to climate finance for EMDEs is Sustainable Instrument issuance. As we can see in the graph below, those financial products already grew significantly in 2021. As of September 2022, 40 sovereign borrowers had issued USD308 billion in those thematic bonds, eighteen of those were from Emerging markets. One advantage for EMDEs in using this market is of course diversification. Indeed, this helps countries diversify their debt mix and spread the risk over different debt instruments. In addition, this also increases the access to financing for countries that would otherwise find difficulty in attracting enough demand in the financial markets if not offering a high (risk) compensation.

Second advantage for EMDEs to issue sustainability debt instruments is to lower borrowing costs. Given the rise in interest rates and the budget constraints of most EMDEs countries to deploy fiscal support, this can offer a (slightly) cheaper funding alternative. Indeed, as shown by an IMF study (see [here](#)), their greenium estimate is on average a 30.4bp for USD-denominated bonds which makes it much larger than that for advanced economies, which is on average just a few basis points currently (see our piece on the Bund greenium [here](#)). Additionally, as the sustainable debt market becomes larger, this will also help to improve liquidity in the market and also attract the private sector to issue more in this market. Therefore, we do expect EMDEs to play a bigger role in global sustainability financial markets in the coming years and increase their share of green financing in their debt mix. However, it is worth noting that sustainability bonds remain debt instruments while the coupons of such bonds can vary widely between Developing countries and thus, only alleviate modestly the debt trap issue.

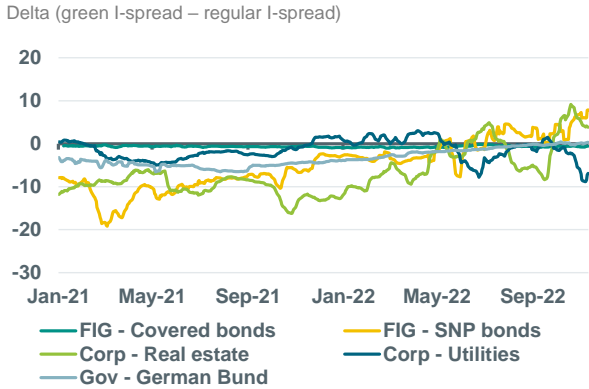
Sustainable Finance in EMDEs on the rise



Source: IMF Global Financial Stability Report 2022

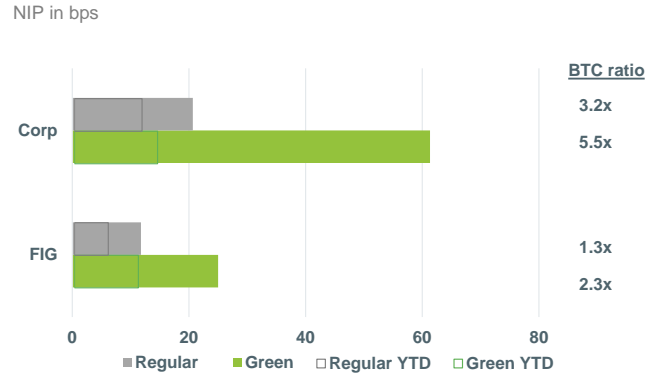
ESG in figures

ABN AMRO Secondary Greenium Indicator



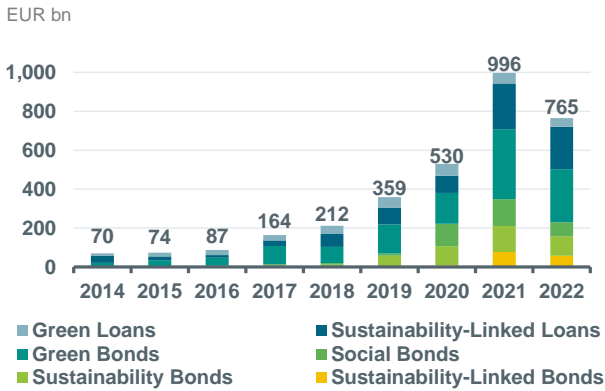
Note: Secondary Greenium indicator for Corp and FIG considers at least five pairs of bonds from the same issuer and same maturity year (except for Corp real estate, where only 3 pairs were identified). German Bund takes into account the 2030s and 2031s green and regular bonds. Delta refers to the 5-day moving average between green and regular I-spread. Source: Bloomberg, ABN AMRO Group Economics

ABN AMRO Weekly Primary Greenium Indicator



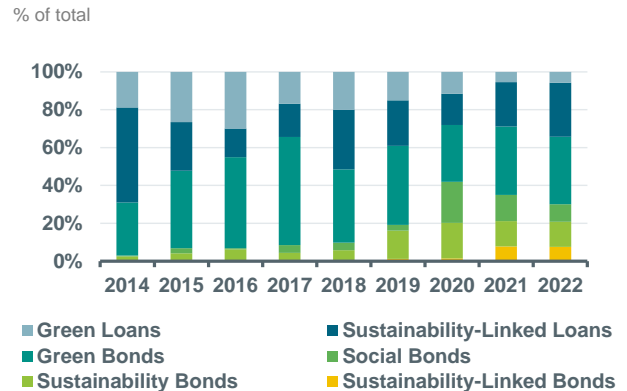
Note: Data until 18-11-22. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics.

Sustainable debt market overview



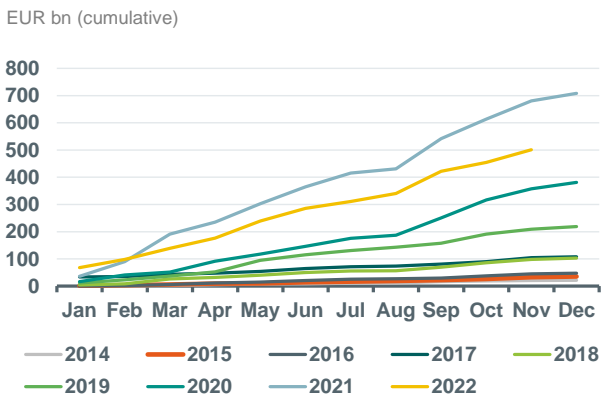
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type



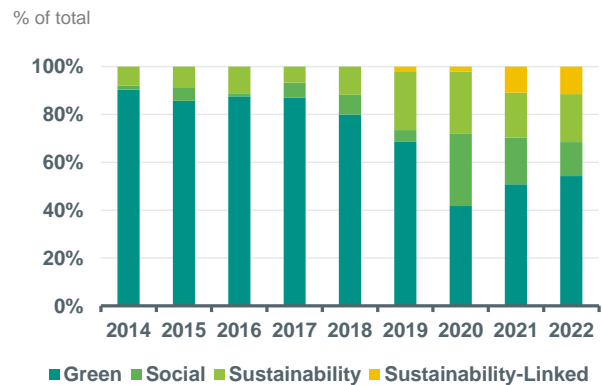
Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance



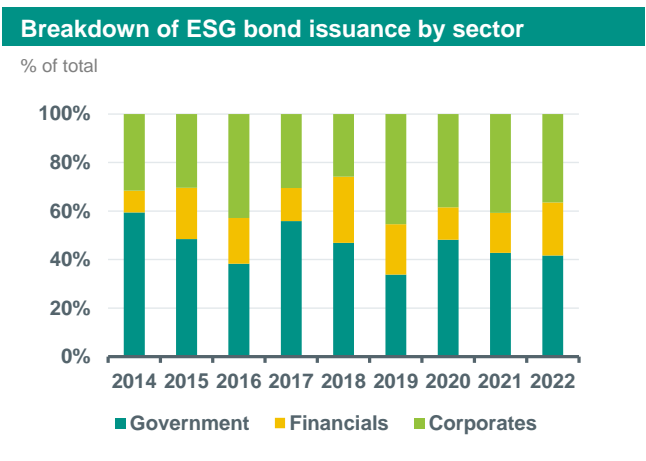
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

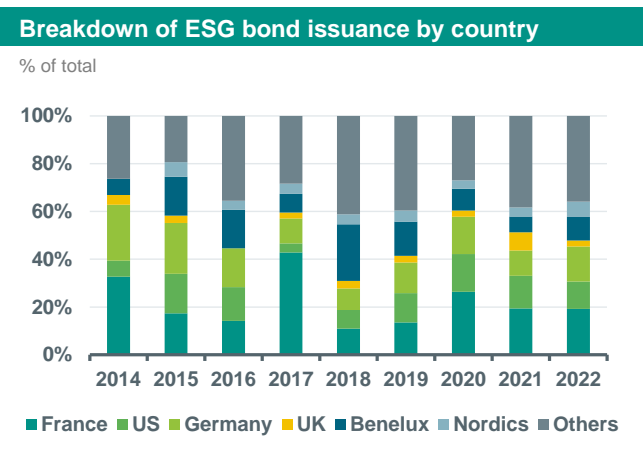


Source: Bloomberg, ABN AMRO Group Economics

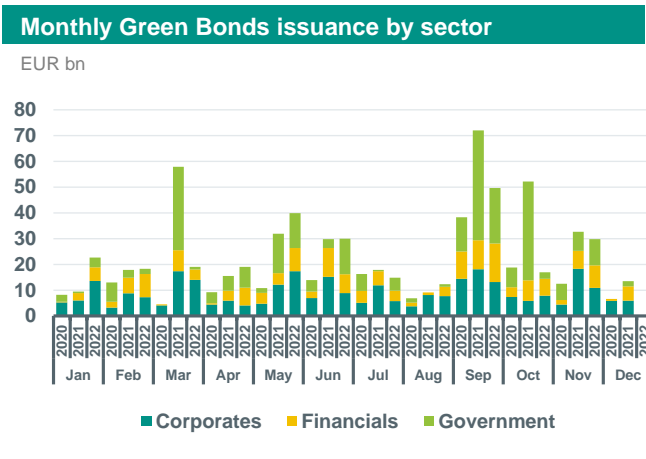
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.



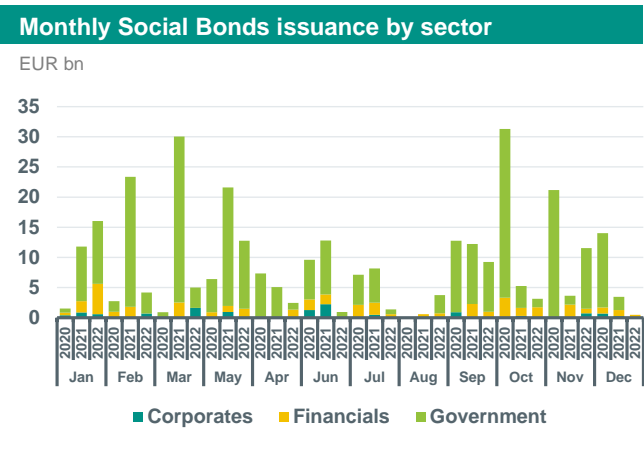
Source: Bloomberg, ABN AMRO Group Economics



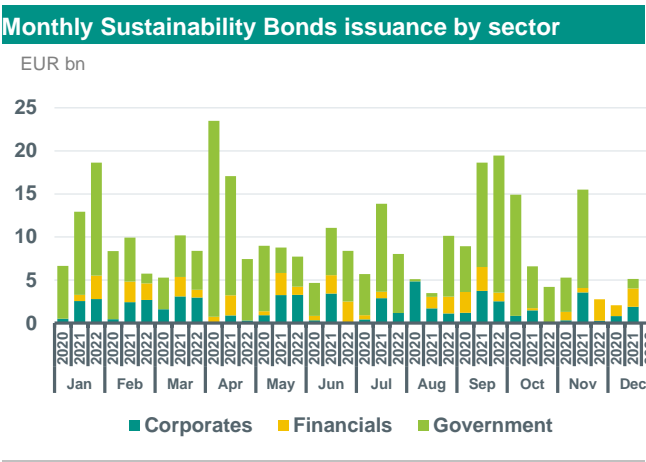
Source: Bloomberg, ABN AMRO Group Economics



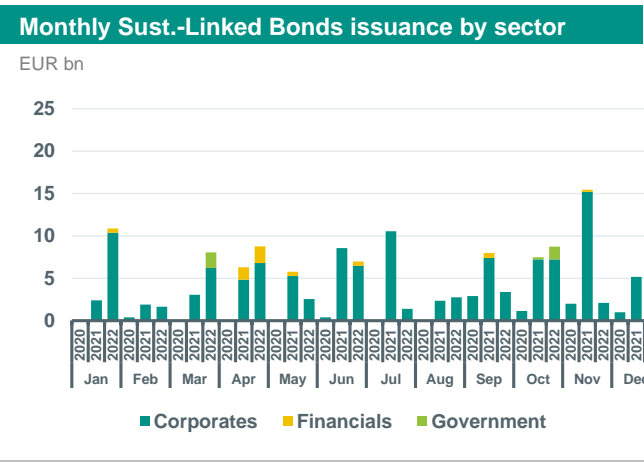
Source: Bloomberg, ABN AMRO Group Economics



Source: Bloomberg, ABN AMRO Group Economics



Source: Bloomberg, ABN AMRO Group Economics



Source: Bloomberg, ABN AMRO Group Economics

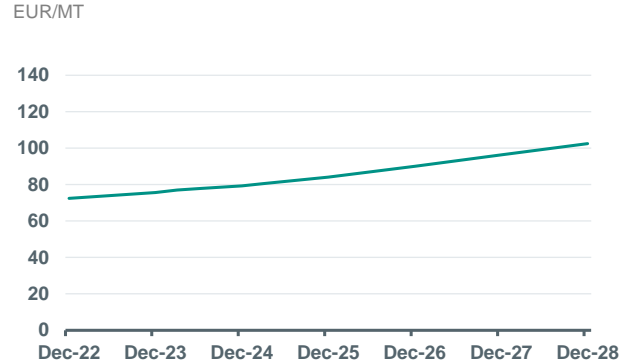
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Carbon contract current prices (EU Allowance)



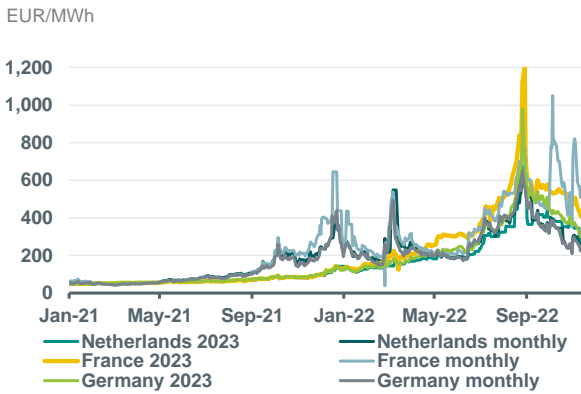
Source: Bloomberg, ABN AMRO Group Economics

Carbon contract future prices (EU Allowance)



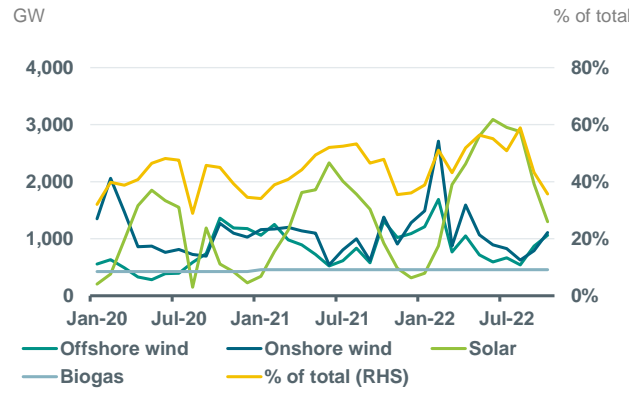
Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)



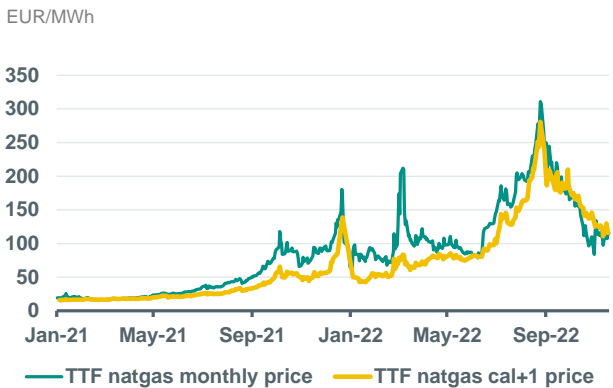
Source: Bloomberg, ABN AMRO Group Economics. Note: 2023 contracts refer to cal+1

Electricity generation from renewable sources (NL)



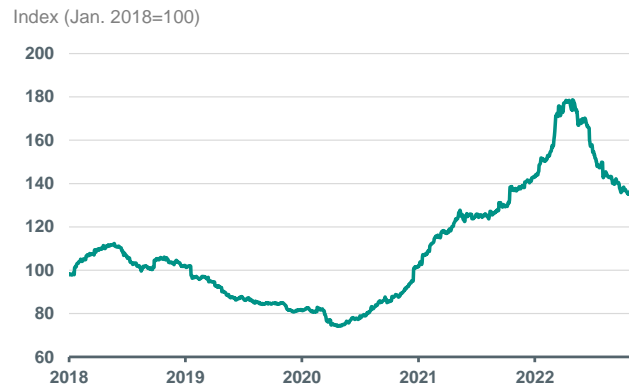
Source: Energieopwek (Klimaat-akkoord), ABN AMRO Group Economics

TTF Natgas prices



Source: Bloomberg, ABN AMRO Group Economics

Transition Commodities Price Index



Note: Average price trend of 'transition' commodities, such as: corn, sugar, aluminium, copper, nickel, zinc, cobalt, lead, lithium, manganese, gallium, indium, tellurium, steel, steel scrap, chromium, vanadium, molybdenum, silver and titanium. Source: Refinitiv, ABN AMRO Group Economics

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