Green finance: how greenium is evolving

In this series of articles, Nadège Tillier, Padhraic Garvey, Benjamin Schroeder and Antoine Bouvet examine corporate greenium in the euro market, greenery in the sovereign and SSA space, the emerging market pioneers in green and sustainable bonds, and more

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By sector, we found that the greenium was lowest in technology, media, and telecom

We addressed the greenium issue last year in a series of articles that can be found here, and we specifically looked at the theory and practice of the greenium concept here. We noted that the pricing of sustainable finance products should theoretically benefit from reduced existential risk, and if such issuance has an ancillary benefit for wider stakeholders whether customers, employees or investors in the institution in question. Despite the avalanche of supply in this space in recent years these perceptions tend to continue to dominate, manifesting in strong demand at primary, and persistence of the new issuance greenium in secondary market trading.

Support for sustainable issuance continues to strengthen. While a greenium helps for new issuance, it's typically not the determining factor. In fact, there are issuers that fully accept a green discount at launch and/or issue in sustainable space fully in the knowledge that secondary lines trade at a discount to grey bonds. The benefit is still a large and diverse book. For most though, there is a greenium; the win-win scenario.

As an aside, even US issuers that might have, for whatever reason, not gone down the sustainable issuance route to date could well find rationale in doing so in the years ahead as they face US Securities and Exchange Commission disclosure requirements on climate change preparedness. It's not that this requires sustainable issuance per se. It's more that all corporates find that they must pay more attention to sustainability issues as a matter of course, arguably making the dive into sustainable issuance less dramatic.

Our key takeaways from our analysis covering corporates, sovereigns and emerging markets

Our global analysis of environmental, social and corporate governance (ESG) issuance spans sovereigns, SSAs (sub-sovereign, supranational and agencies), European and US corporates and emerging markets sovereigns. We make the following central observations from our analysis:

- Obtaining a greenium remains a baseline assumption for new issuance. The avalanche of ESG issuance has tended to dampen its size, but not to an extent that is particularly significant. The typical expectation centres on a greenium in the low single digits, but it can be much higher.
- Greeniums also tend to persist into the secondary market and roll down the curve. They tend not to be dominated by duration so that a larger greenium price effect (or green price premium) can be seen in longer maturities. These then roll down the curve over time.
- There are also many examples of ESG bond discounts (the opposite to a greenium), both in primary and secondary. A discount in primary is typically maintained on secondary. This can come down to bond peculiarities, but can also reflect greenwashing concerns (less common).
- We found that the greenium tended to shrink during the recent bout of credit spread widening, especially as the Russia/Ukraine crisis erupted. That said, once that calmed the greenium tended to reassert itself.
- While the latter might suggest a lack of liquidity in ESG lines, often it was the opposite. Ease of liquidation has often meant that the more liquid lines can be forced to underperform. We saw some evidence of this in the price action seen in the past month or so.
- There is no evidence of a material difference between the bid/offer available on ESG lines relative to grey lines. On a case-by-case basis, some differences can be found, but in a generic sense we cannot conclude that ESG has either a higher or lower bid/offer versus grey.
- Consequently, although ESG issuance has a reputation for being bought and held, we find no convincing evidence that this has been necessarily detrimental to its liquidity. Clearly, exceptions can be found in individual circumstances, but generically we find minimal disruption in liquidity.
- For the odd ESG bond that displays a significant discount (opposite to a greenium), there can be an issue with liquidity, as there is also some evidence that such bonds can have a tendency to exhibit wider bid/offer spreads.
- A special study in the benchmark EUR corporate space finds evidence that volatility in ESG lines is less than that of grey lines over a longer time frame. By sector, we found that autos and utilities were least volatile, while chemical and technology, media, and telecom (TMT) were more volatile.
- Also by sector, we found that the greenium was lowest in TMT, followed by utilities, and highest in industrials. There are many examples of exceptions to this, but these are the generic outcomes, with the average greenium in TMT at 2.1bp, 2.8bp in utilities and 4.4bp in

industrials.

- In the SSA space, at the onset of the Ukraine invasion, we observed a tendency of the SSA greenium to grow, at least temporarily. For some issuers that move has already been reversed but it suggests that periods of illiquid market conditions favour green bonds.
- To conclude that 'greenness' is a factor that affects the pricing of all green bonds, we would ideally want to see a degree of correlation between the greenium of green bonds within the same curve, indicating that they are a substitute for each other in investors' mind, and across issuers. We indeed found a tendency for green bonds to trade with lower yields than their theoretical 'grey' yield, but no cross-issuer correlation. The greenium observed is on a case by case basis.

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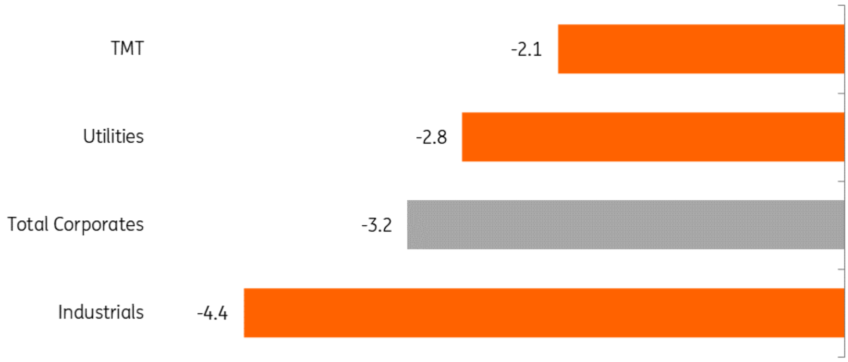
With investors and issuers more eager to take part in the sustainability bond market, the greenium subject has become a recurrent focal point

Greenium confirmed, although disparities remain the norm

With investors and issuers more eager to take part in the sustainability bond market, the greenium subject has become a recurrent focal point. Do green bonds offer any advantage to issuers and investors in comparison to plain vanilla grey bonds? Do green bonds trade inside their own curve?

The answer is yes. Our analysis, conducted in March 2022, shows that globally, corporate green bonds are priced 3 basis points tighter than their plain vanilla grey bond comparables. Three basis points may not seem a lot but this has to be put in perspective with the very large size bonds corporates issue on the markets (for the EUR Investment Grade market, between €350m and €2bn).

Corporate green bond spread premium per sector (in basis points)

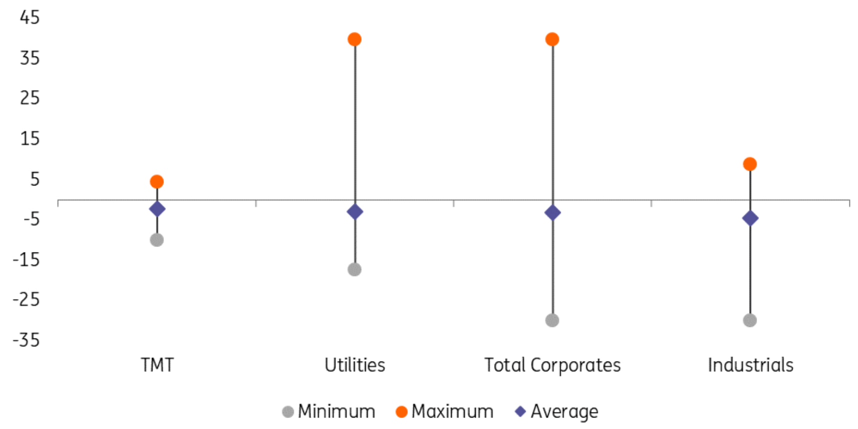


Source: Markit, ING

The greenium varies slightly from sector to sector and is not easy to interpret. However, industrials, with a 4 basis points greenium, include issuers that offer green bond curves trading significantly inside their own grey bond curves. Some of these corporates are within the automotive industry. The favouring of automakers' green bonds over grey bonds could indicate large support from investors for sustainable mobility investments in comparison to traditional mobility products, which are largely associated with pollution issues.

If the global picture proves again the existing greenium for corporate bond issuances, the details also show strong disparities within green bonds in terms of discounts and premiums. For instance, within the utilities sector, the maximum discount (green bond spread above the grey curve) stood at 37 basis points. This demonstrates that not all green bonds offer greenium – on the contrary. The lack of greenium cannot always be explained, but when an explanation is plausible it often relies on the size of the bond (too small or too large) or the investors' perception of the green bond framework or the company's sustainability profile. In some rarer cases, the lack of greenium can also be due to issuers exclusively issuing green bonds over the past few years, leading to the pricing of both curves, green and grey, at the same level.

Corporate green bond spread maximum premium and discount per analysed sector vs. grey bonds (in basis points)



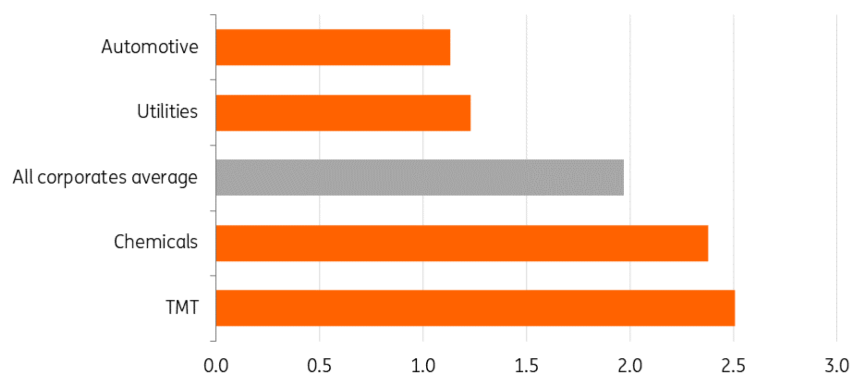
Source: Markit, ING

Corporate green bonds benefit from a lower spread volatility

Our second analysis, looking at green and grey bonds' volatility on the euro market between January 2021 and March 2022, brings another insight. Our corporate bond universe constituted of 130 corporate senior bonds and shows that green bonds have less volatile spreads than grey equivalents, in every sector we analysed: utilities, TMT, automotive and chemicals.

Overall, between January 2021 and March 2022, the corporate senior green bonds of our universe showed average volatility of 0.06 compared with 0.13 for the grey bonds (expressed as standard valuation). Corporate bonds' overall volatility is relatively low in comparison with other financial products such as stocks. However, the outcome of our analysis shows that corporate grey bond spreads are proportionally twice more volatile than green bond spreads.

Grey bond spreads volatility vs. green bond equivalents per sector (x) January 2021-March 2022



Source: Markit, ING

The European Union's sustainability targets for 2030 and 2050 and the recent RePowerEU package that puts emphasis on the emergency to switch to clean energies will continue to support green bond issuance in the coming years. In parallel, investors' demand for green and other forms of sustainable bonds has only intensified with growing dedicated funds. For capital markets, the question around greenium will remain in the spotlight, however, bond performance is certainly not the only motivation behind the green bond label.

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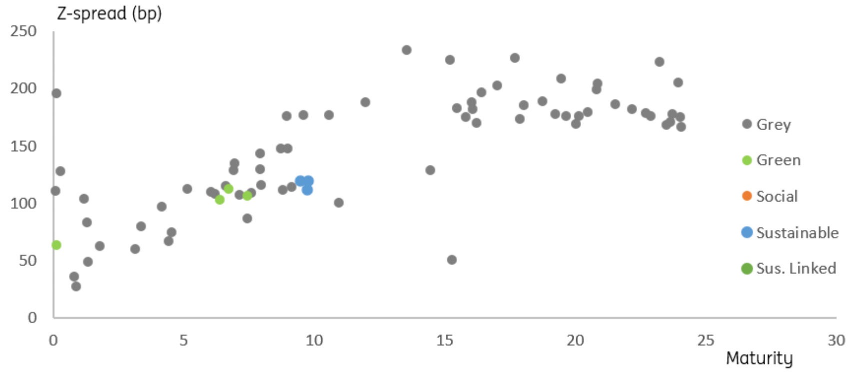
Source: Shutterstock
View of Central Park in New York City

US corporate ESG issuance spans the full spectrum

Environmental, social, and corporate governance (ESG) issuance in the USD-denominated corporate space has been steady over the past number of months. Typically, US corporate names are more likely to issue ESG paper in USD-denominated products, whereas European names are more likely to issue EUR-denominated ones. We find that USD-denominated ESG bonds are just as likely to manage a greenium as EUR-denominated ones. Multinational or global names have been open to issuance in both currencies, and others.

The baseline expectation is for new issuance in USD-denominated ESG bonds to commence with a greenium. The greenium is typically in single digits, and often in low single digits. Some don't have a greenium to speak of at all, but there are not many examples of ESG bonds trading at a significant concession to surrounding grey issues, barring bond peculiarities to do with coupon size or unusual holding characteristics.

Example of ESG issuers in the energy space



Source: Macrobond, ING estimates

The spectrum of the type of ESG issuance has also been wide and ranging. Green bonds remain the most popular ESG vehicle, but there is an ongoing smattering of sustainability and sustainability-linked issuance happening on an ongoing basis too. And there has been some US corporate social bond issuance too – not much, but it helps complete the full array. The growth area of late has been in sustainability-linked issuance, although green issuance continues to dominate.

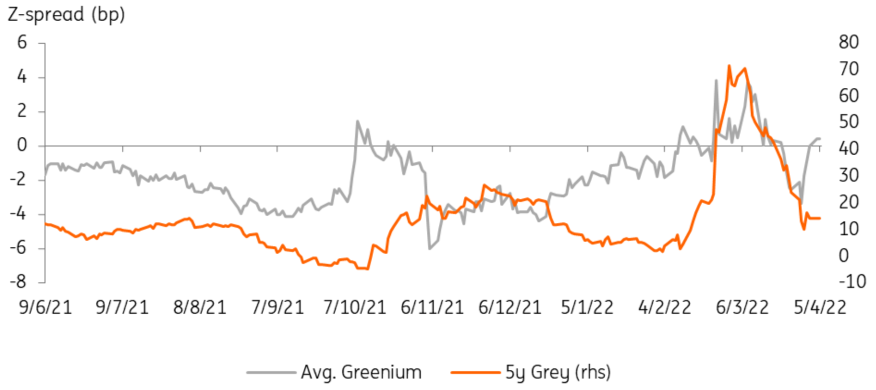
It has also been quite a wide-ranging market in terms of sector. ESG issuance in autos remains popular, and in energy, which is reflective of the quest to be seen as more ESG responsive than they might have been historically. ESG issuance has also been spanning other sectors ranging from food and beverage, real estate, transport, technology, pharmaceuticals and finance, and across a myriad of maturities all the way out to 30yrs, with the 10yr being the most popular.

ESG may be buy and hold, but there's no evidence they lack liquidity

We find that the ESG lines do tend to end up at accounts that are more minded to hold the paper on books rather than churn them through numerous buy/sell opportunities. At the same time, there is no clear evidence of a difference in bid/offer spreads in ESG lines relative to grey ones. While there may be individual and unique circumstances where there is a difference, in the vast majority of cases there is no discernible difference based on where traders price them on the secondary market.

In certain situations, there has been some evidence of greeniums in US corporate paper shrinking as credit spreads widened, especially during the recent spate of widening seen at the end of February and early March when the Russia/Ukraine war really hit the marketplace. While this would suggest that ESG lines suffered from a degree of illiquidity, in many cases it has been the opposite. In fact, the ESG lines were the easier ones to get liquidity from and were thus more prone to be used as a selling vehicle when liquidations were required, causing them to underperform. As the widening became less panicky, most of the greeniums that had shrunk tended to subsequently re-assert themselves.

Example of movement of credit spread alongside the greenium (energy sector)



Source: Macrobond, ING estimates

The greenium is persistently there, and helps, but is not not dispositive

Issuers of ESG lines and claims of ESG compliance will receive increasing credibility among investors and other stakeholders as we face the US Securities and Exchange Commission disclosure requirements that are set to be implemented in the coming years (we expect they will). While these will require quite a considerable amount of time and effort to apply, they will at the same time help to assuage sporadic greenwashing accusations. And indeed can help switch on some ESG issuance for some corporates that have not done so yet.

The greenium attainable is an attractive aspect to help take some corporates over the line. However, it has not been the determining factor for most US issuers. There could well be questions on the logic of ESG issuance were they to persistently trade at a discount to grey bonds. But for now, that does not tend to be the case. Rather the ESG market tends to come with a virtual guarantee of tight launch versus adjacent grey lines, and typically through to exhibit a greenium.

Moreover, our analysis of the secondary market shows that the greenium persists, with ESG lines tending to remain through adjacent grey yields as they roll down the curve. The basis point differential is also not that responsive to maturity, although that clearly means that the value of the greenium is more pronounced for longer maturities when expressed in price terms. A happy medium remains in play where issuers are keen to issue and investors invest at yields that tend to be through grey lines.

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Sovereign and SSA: the vain search for a greenium benchmark

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Periods of illiquid market conditions may favour green bonds

Given their benchmark role, we examine how the premium associated with sovereign and SSA ESG bonds – and green bonds in particular – has evolved. Not only as the market has matured, but also as the overall market environment has turned more volatile as central banks fight inflation and geopolitical factors shake risk sentiment. What adds to the challenge of analysing the "greenium" in the sovereign and SSA space, in particular, is that often the mission of the issuer itself is already to a degree in alignment with sustainability principles – blurring the lines between the conventional "grey" and ESG bonds of an issuer. Think of the World Bank or even the European Investment Bank (EIB). And in some cases, it goes as far as an issuer only being active in ESG bonds such as the French agency CADES which only issues social bonds.

The sovereign bonds space has seen more governments enter the €-green bond market over the past few years. However, this often means one or two larger green bonds from an individual issuer rather than an entire complementing green curve to the existing bond curve. Theoretically, the "greenium" should be easier to measure, but at the same time having only a few bonds to analyse makes it more difficult to distinguish the green factor from other idiosyncratic bond stories. One simple example is supply activities, as sovereign issuers reopen the green bonds themselves or just surrounding grey bonds. But It may also just be that the one green bond under scrutiny happens to be in a maturity bucket being sought after more generally.

The main EUR sovereign entrants to the green bond market

Issuer	Entry	Nr Bonds	Avg greenium (bp)	Range (bp)
France	Jan 2017	2	3	0.7-6.6
Belgium	Mar 2018	1	10	
Ireland	Oct 2018	1	10.2	
Netherlands	May 2019	1	5.6	
Germany	Sep 2020	4	3.2	2.1-4.9
Italy	Mar 2021	1	2.6	
Spain	Sep 2021	1	1	

Source: Debt agencies, ING estimates

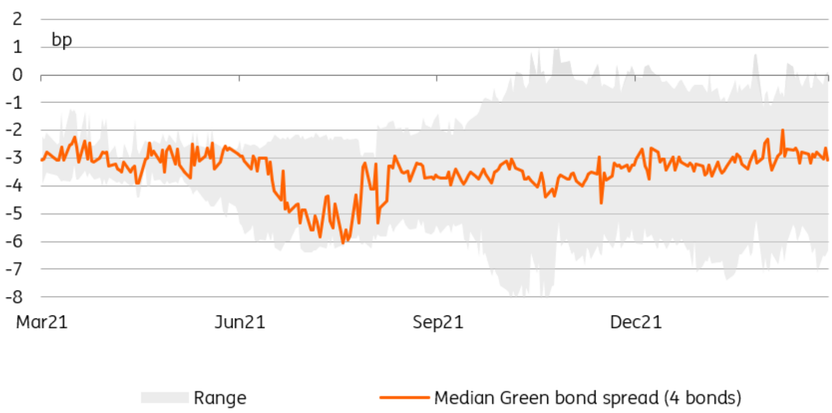
ING estimates (end March)

Green Bunds – the challenges of building a green benchmark

Germany is an exception in that it planned to build a benchmark green curve from the onset. In fact, each green bond has a grey twin bond with otherwise identical features that is increased in size alongside every issuance in the green bond.

In theory that should make for easy reading of the greenium. But then it is also managed greenium. The German finance agency uses retained amounts with the explicit purpose of "ensuring secondary market tradability comparable to conventional German Federal securities". Even so, a look at the evolution of the Bund greenium shows a wide variation – over time and across bonds. Since early 2021 the 5Y German green bond has seen its premium rise from a relatively stable 2bp to over 8bp before falling back to 5bp. Currently, the four German green bonds command premiums between 2bp and 5bp.

Virtual reality: German 'managed' greenium

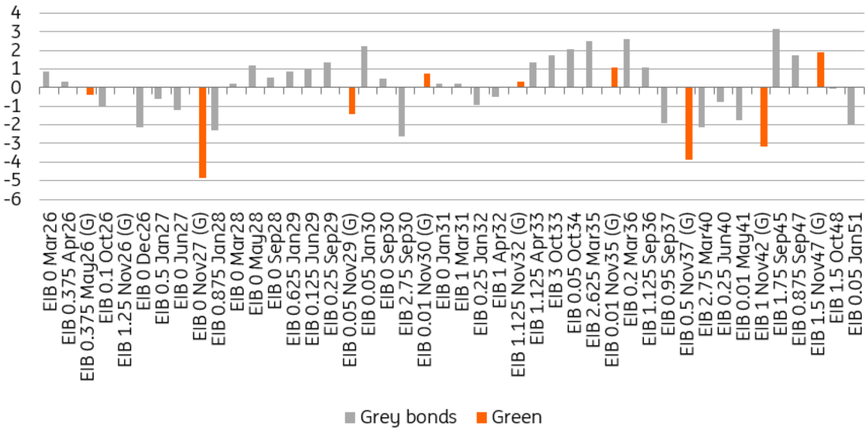


Source: Refinitiv, ING

Green SSA bonds, in a perfect world…

The SSA bond market is a more fertile ground for a comprehensive analysis of the greenium, its characteristics, and its drivers. SSAs have been early adopters of green bonds, and prolific issuers. This means enough bonds and enough history to avoid the usual biases likely to cloud any green bond calculation (among them country, sector, and maturity skew).

Not all EIB green bonds have a lower yield than the grey curve implies



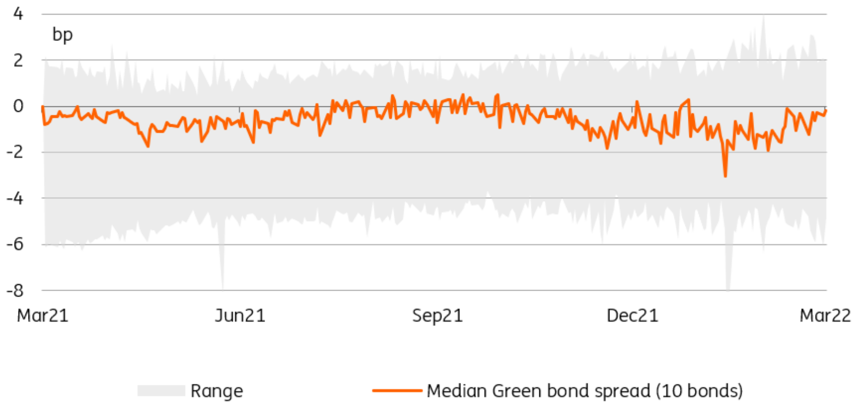
Source: Refinitiv, ING

Our conclusion is that despite more often than not displaying a positive greenium (ie green bonds trading with lower yields than grey equivalents, and thus shown as a negative number in our charts) other important pieces of the green bond jigsaw are missing.

Important pieces of the green bond jigsaw are missing

To conclude that 'greenness' is a factor that affects the pricing of all green bonds, we would ideally want to see a degree of correlation between the greenium of green bonds within the same curve, indicating that they are a substitute for each other in investors' mind, and across issuers, suggesting that investors are at least as much interested in the bonds' 'greenness' as in its issuer.

The range of EIB greeniums is wide

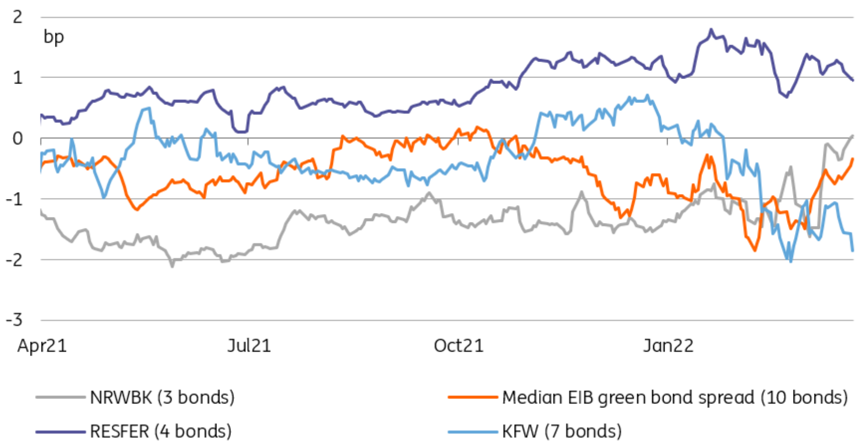


Source: Refinitiv, ING

...even SSA greeniums aren't correlated

Starting at the individual issuer level, and taking the EIB as an example, far from all green bonds trade with a positive greenium even if average and median greenium suggest lower yields for EIB green bonds. In addition to a relatively wide range of greeniums within the same curve, we find little to no correlation between them. Taking a sample of four large issuers from across the eurozone, the EIB, German bank KfW, Réseau ferré de France (RESFER), and Dutch financial institution Ned WaterschapsBank, we also find a tendency of green bonds to trade with lower yields than their theoretical 'grey' yield, but no cross-issuer correlation.

The greenium of SSA issuers doesn't look very correlated



Source: Refinitiv, ING

Periods of heightened volatility and lower market liquidity can be revealing of an asset's trading behaviour. As we pointed out above, it is hard to generalise but, at the onset of the Ukraine invasion, we observed a tendency of the SSA greenium to grow, at least temporarily.

Periods of illiquid market conditions may favour green bonds

For some issuers that move has already been reversed but it suggests that periods of illiquid market conditions favour green bonds.

This is a more controversial claim than it seems. A positive greenium is justified in part by a supply and demand imbalance, something that rarely goes hand-in-hand with better liquidity. We would also expect that green bond investors have a longer typical holding period, making the effective free float of green bonds smaller than their grey peers.

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Chile is a huge player in the ESG space. Pictured: Santiago

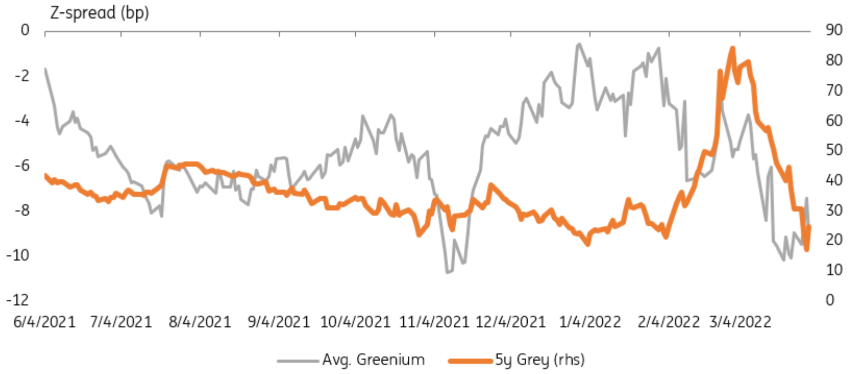
Central European pioneers in green and sustainable issuance

In Central Europe, Poland has been the pioneer, launching its first green bonds in 2019, followed by Hungary in 2020 and Serbia in 2021. In every case, they are EUR-denominated bonds. All of them share the positives of having heavily oversubscribed books at issuance, and all can claim a material greenium in terms of where they trade on the secondary market.

Slovenia also issued a EUR-denominated sustainable bond in 2021, which trades with a definite greenium, at some 5bp through the grey curve. Hungary also launched local currency green bonds, one in 2022 and a second one earlier this year. They trade tight to the grey curve, with an ad hoc moderate greenium.

The greenium does jump around a bit. We saw that as spreads came under widening pressure recently, the greenium fell away, and the subsequent re-tightening helped reassert the greenium. However, we've also seen the reverse correlation. At times it can be determined by the types of players driving the market. We also don't read it as a lack of liquidity in environmental, social, and corporate governance (ESG) bonds. Rather, sometimes the easier to sell product can be sold first, resulting in a perceived underperformance.

Example of emerging market sovereign issuer average greenium vs grey spread movement (bp)



Source: Macrobond, ING estimates

The rationale here for green issuance is threefold. First, ESG issuance still comes with a novelty value that helps secure a strong book at issuance. Second, and in a parallel fashion, ESG issuance has a captive audience that will show up at issuance. And third, ESG issuance is seen to place the issuer in a positive light. Stakeholders – from investors to citizens to international observers – take note with a positive gloss.

Apart from the various hurdles that need to be overcome in terms of documentation, project identification and subsequent monitoring, issuers come away with an overall glow of positive kudos for going down that route in the first place. So-much-so that it in a way places pressure on other comparable issuers to step up and do the same.

Selected ESG issuers in emerging markets

	Green	Social	Sustainable	Sustainable Linked
EMEA				
Poland	X			
Hungary	X			
Serbia	X			
Slovenia			X	
Latam				
Chile	X	X	X	X
Mexico			X	
Peru		X	X	
Asia				
Indonesia			X	

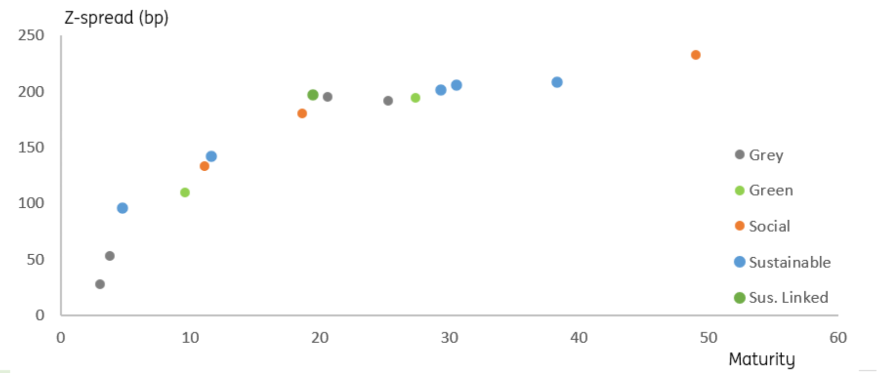
Source: ING estimates

Looking forward, Turkey, for example, is well advanced in structuring its sustainable framework and will use this to look at opportunities for green, social or sustainability bonds in the future. Other issuers in the Central and Eastern Europe space are also looking at options in ESG issuance, but in many cases it is a bit of a slow process.

Key Latin American players: Chile is a huge player in the ESG space

One of the more interesting players in the emerging markets sovereign ESG space is Chile. Issuance of Chilean green, sustainable, sustainable-linked and social has seen its CHILE hard currency ticker on Bloomberg littered with ESG issuance options in the USD space. In fact, there are more ESG lines (11) than there are grey lines (4). Similar proportions are in evidence for EUR-denominated Chilean bonds.

Chile issues along the whole spectrum of ESG bonds



Source: ING estimates

Interestingly, in this case, there is more of an ESG bond discount in evidence than a greenium. Certainly the ESG lines in the belly of the curve trade at a discount to and extrapolation between grey bonds, and for longer maturities, ESG lines tend to trade flat to or at a higher yield versus grey lines. We calculate a generic ESG bond discount of some 10bp for Chile USD paper; no greenium there.

But this is an interesting case in point. Of its last 12 USD lines issued since 2019, 11 of them are ESG bonds. And four of those have been issued in 2022 year-to-date, despite the existence of an ESG discount. This is a clear example of an issuer that has flipped towards ESG. All new lines issued in 2021 were also ESG bonds.

This is an example of an issuer that is not in ESG issuance for the greenium. Rather Chile sees itself in the pioneering space for sovereign issuance, and followed that through by being the first sovereign to issue a sustainability-linked bond in March 2022. The positives don't have to be in the price; that sustainability-linked bond was eight times oversubscribed, although it is also the cheapest bond on the Chile curve.

Other interesting issuers

- Peru has also dipped into the space with two USD-denominated sustainable bonds launched in 2021, and one EUR-denominated social bond. The EUR bond does seem to exhibit a

moderate greenium versus an extrapolated grey curve, while the longer-dated USD bond trades at an ESG discount to the interpolated grey curve.
- Mexico has issued two EUR-denominated sustainable bonds, one in 2020 and the second in 2021. Both trade about flat to the grey curve, maybe a tad through at times for a very moderate greenium.
- In Asia, there are some examples of ESG issuance to note. Indonesia issued its first sustainable bond in 2021, which traded flat to a moderate pickup versus the grey curve. So no material greenium here.

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