The Green Bond

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SEB Green Bonds Website

Executive Summary

The green bond market returned to its more serrated pattern of issuance and growth through 2Q18, overcoming a weak spot in May and delivering its second highest quarterly figure to date of **USD 47 bn**, up 21% YoY. This outcome compensated for more moderated growth in 1Q18 to raise the **1H18 figure to USD 83 bn**; up 18% YoY with at least 85 issuers active in 16 currencies working to set a 1H period record.

Issuance **cooled considerably in July**, looking to be down by at least 40% YoY, taking the whole market to **USD 87 bn** YTD (up only 6%). Total cumulative issuance approached the **USD 500 bn** mark and a solid **pipeline** of announced deals remains.

The decreasing growth rate overall for the market has its roots intertwined in a number of dynamics, most of which are not specific to green finance. The **overall bond market has slowed** in 2018 and fickle market conditions have held back issuance globally in July.

Despite this, **positive augurs abound for 2H18**, with the market continuing its fruitful quest of sectoral diversification with 24 repeat issuers in 1H18 and large economies featuring heightened activity (e.g. the U.S. corporate market) alongside new sectors.

Our 2018 base-case issuance scenario is revised to **USD 185 bn** (in line with recently revised 2017 Bloomberg figures), with the possibility to surprise to the upside and cross to **USD 210 bn**.

Issuance from **Agencies** and **Municipalities** appear well below their potential, down -53% and -26% YoY, respectively. We are placing agencies on watch for a **downgrade** to their potential for 2018 issuance at the same time as we **upgrade** the potential for **Sovereigns (USD 17 bn)** and **Supranationals (USD 14 bn)**.

Corporates have been particularly buoyant with **USD 40.3 bn** up by 27% YoY. Financials have been the driving force behind this vitality with **USD 24 bn up 85% YoY**, and look to be on track to exceed our estimate. After a great 1Q, non-financial corporates lagged somewhat and were down 14% YoY, well below potential. **Green covered** bonds emerged strongly in 1H18 taking the total to USD 6 bn. This trend looks set to continue with vigour in 2018 as the financial case behind green mortgages continues to strengthen. In May, **SEB launched Green Mortgages**, offered with a 10 bps reduction on the interest rate paid.

Geographic activity is already very broad and dispersed; with **34 jurisdictions** featuring green bonds YTD. The center of gravity for the market pulled back somewhat on its shift towards **Europe** in 2018. This shift has been driven by European corporates and sovereigns and has been underway alongside increasing policy attention; as the European Commission **Technical Expert Group on Sustainable Finance** started its work in July on making proposals in relation to the priorities of its Action Plan on sustainable finance.

The Green & Social Bond Principles AGM was held for the first time in Asia and attended by nearly 1,000 market participants, leading to some **positive developments**.

Letter to the Reader

"SEB thanks you for the trust you showed in re-electing us for the Executive Committee of the Green & Social Bond Principles. We will continue to do our outmost to serve in a way which serves the broader market and allows all of us to access information in a format which simplifies references and comparisons."

(Continues, pg. 2)

Christopher Flensborg
Head of Climate & Sustainable Finance, SEB

SEB Climate & Sustainable Finance Review

Guest contributors welcomed in this edition:

SEB's **Gabriella Eriksson** on the importance and complexity of External Reviews;

S&P Global Ratings on how ESG factors may affect corporate credit ratings;

UN Environment on climate change and the costs of capital to developing countries.

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Letter to the Reader (full text):

First of all SEB thanks you for the trust you showed in re-electing us for the Executive Committee of the Green & Social Bond Principles. We will continue to do our outmost to serve in a way which serves the broader market and allows all of us to access information in a format which simplifies references and comparisons.

We are beginning to see the first results of the European Commission Sustainable Finance Action Plan and have already observed an increase in activity from clients in a number of European jurisdictions, leading to a promising outlook for 2019. As part of its work on implementing the Action Plan, the Commission set up a Technical Working Group on Sustainable Finance in spring 2018 and SEB was elected as a member. We will keep you updated through this publication as the results begin to emerge.

What is also promising in the mid-term is the rise in corporate lending which we and a number of our peers are experiencing currently - a fact meaning that corporate treasurers are spending an increasing amount of time examining their funding options, hence, leading to prospects for larger corporate issuance ahead - and thereby also more attention to the Green Bond market.

However, the ongoing uncertainty around Brexit and rising trade tensions leads to increasing risk on currencies and could lead to a short-term dip in the growth of Green Bond issuance.

As a milestone, we have recently seen the first credit rating agency report (from Moody's) that provided direct credit-positive reflections on the back of an issuer setting up a Green Bond Framework and issuing, and as such we have dedicated a part of this edition to ratings and climate/environment risk considerations.

This development is a fact which will force increased transparency around issues like governance, monitoring, and the weight of, as well as strategies surrounding pre and re-financing matters.

Lastly, SEB had the privilege to chair a working group under the GBP/SBP this year which looked into the increasing services offered by External Reviewers - my colleague, Gabriella Eriksson, in this edition shares our thoughts on this area and some of the insights she gained from chairing the working group.

Enjoy your reading,

Christopher Flensborg

Head of Climate & Sustainable Finance, SEB

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Christopher R. Kaminker, PhD
Head of Research, Climate & Sustainable Finance; Senior Advisor, Large Corporates & Financial Institutions

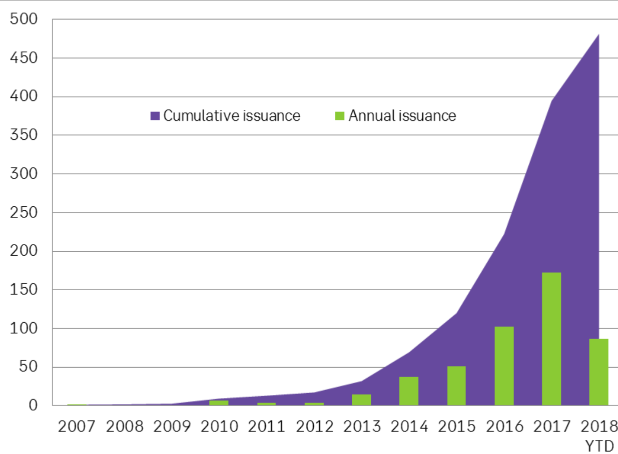
1. Green Bond Market Review and 2018 Outlook

The green bond market returned to its more serrated pattern of issuance and growth through the second quarter of 2018 (2Q18) with the market overcoming a weak spot in May and delivering its second highest quarterly figure to date of **USD 47 billion**, up 21% Year-over-Year (YoY). This outcome compensated for more moderated growth in 1Q18 (+14%YoY) to raise the **1H18 figure to USD 83 billion**; up 18% YoY with at least 85 issuers active in 16 currencies working to set a 1H period record for this nearly decade-old market.[1]

As shown in Figure 2, the robust 2Q ending was largely attributable to outstanding results in April and June. On the back of more supportive market conditions, April issuance exceeded last year's levels by 49% ending with USD 14.5 billion. Even though May was down slightly YoY on total issuance volume of USD 13 billion, the month saw the highest number of issuers Year-to-Date (YTD)[2], with 55 individual entities foraying into the green bond market.

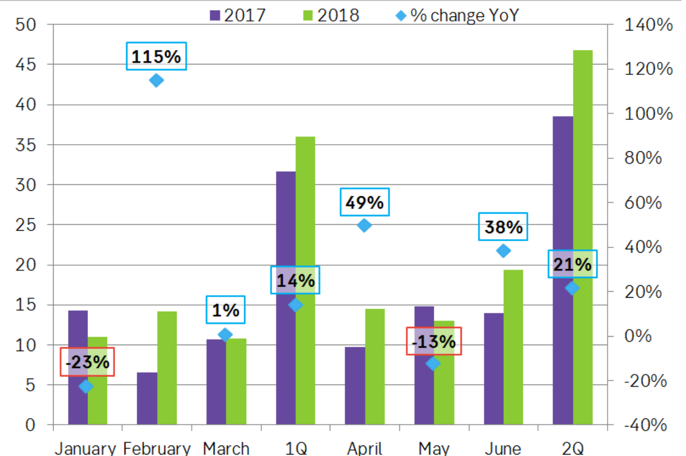
June clocked in with USD 19.3 billion; from 42 issuers in 15 jurisdictions, split encouragingly evenly between new and repeat issuers. A syndicated EUR 4 billion tap of the Green sovereign OAT from Agence France Trésor took its outstanding volume to EUR 14.8 billion (the largest single green bond in the market) and added to the impressive June haul, boosting the monthly totals by 38% over the previous year.

Figure 1. Total Cumulative Issuance (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data

Figure 2. Periodic issuance (USD Bn) and % change YoY



Source: SEB analysis based on Bloomberg and SEB data

It was a fitting result for a month that also featured the Green & Social Bond Principles AGM with some positive developments; held for the first time in Asia (Hong Kong) and attended by nearly 1,000 market participants. SEB was honoured to be re-elected to the Executive Committee and this edition features a contribution from Gabriella Eriksson on the importance and complexity of External Reviews; an area that SEB has worked on for nearly a decade.

By the end of July, total cumulative green bond issuance was heading towards the USD 500 billion mark (Figure 1) and a solid pipeline of announced deals remains for 3Q, or later in 2018 (see Section 2). However, the market appeared to cool considerably in July – perhaps packing its bags early for the summer after an energetic spring – and at the time of this writing looked to be down by at least 40% YoY. As such, by the end of July the whole market was only up by 6% YoY, with **USD 87 billion** of cumulative issuance YTD.

The slowdown in July and also the decreasing growth rate overall for the green bond market (from its nearly exponential last few years) has its roots intertwined in a number of dynamics, most of which are not specific to green finance. The overall bond market has slowed in 2018 and fickle market conditions and downside scares have held back corporate IG and HY issuance globally, throughout July. According to Dealogic figures, global bond markets were initially encouraged by one of the strongest first quarters on record (USD 1.95 trillion of volume issued in 1Q18), started to drop off in 2Q18 to USD 1.68 trillion (with 5,110 transactions); the lowest second-quarter volume in the past 3 years, and lowest 2Q number of deals in the past

[1] SEB's revised 2017 year-end figure has not changed since the last edition, and matches BNEF/Bloomberg figures.
[2] Henceforth, YTD will refer to the period of 1 January 2018 – 27 July 2018

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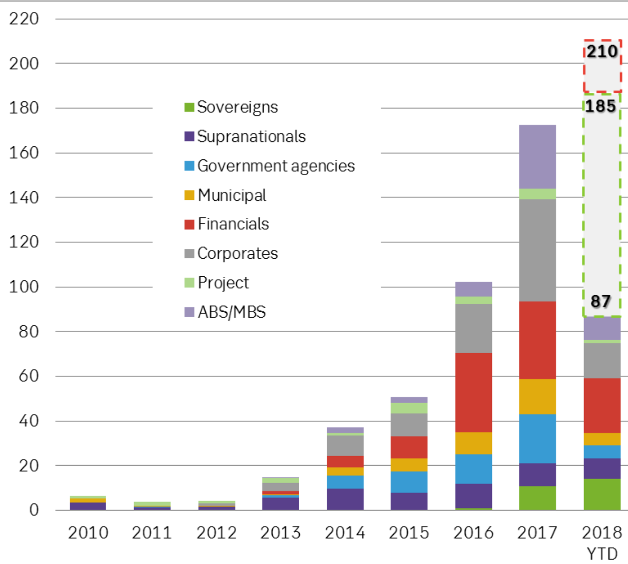
six years. Bond activity continues to be affected by news of interest rate hikes and market reaction to the current political environment. All these signals, mixed with instability in other markets, raise questions pointing to the end of the current credit cycle.

It is also worthwhile pausing for two methodological notes here. First, as described previously it takes some time for the full volume of green bonds issued to be catalogued (including Chinese, securitizations, project bonds, and other private placements).[3] Second, SEB uses the "deal effective date" listed on Bloomberg to determine month of transaction to reflect a more accurate picture of the market dynamics and momentum around the day of the actual trade (as opposed to dates of announcements or settlements). This is important in a relatively small market where a single large issue (such as the aforementioned syndicated OAT June 26 tap – which settled in July) can sway the monthly figures significantly. Even so, July issuance looks to be quite low compared to levels experiences over the last two years.

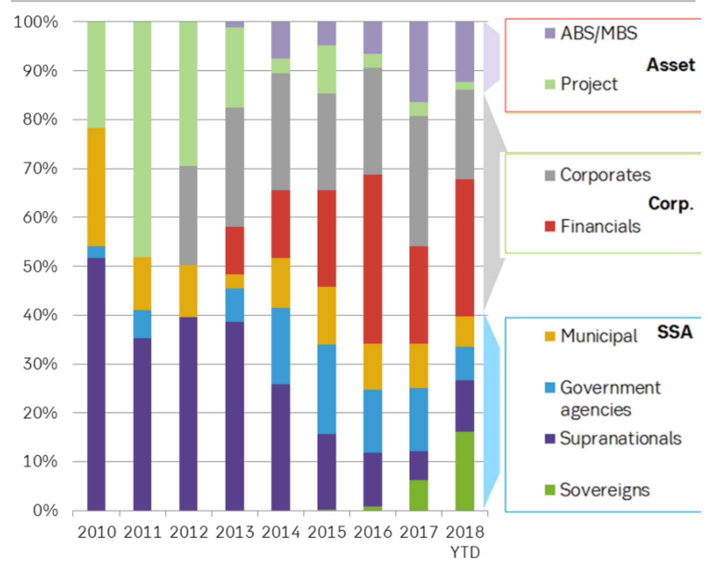
Despite the apparent slowdown in July, positive augurs abound for H218, with the market continuing its fruitful quest of sectoral maturation and diversification (compare Figures 3 and 4); with over two dozen repeat issuers coming to market in 1H18; some large economies featuring heightened activity (e.g. the US corporate market, Spain, Germany, Japan, and Indonesia) alongside new sectors (e.g. shipping and pension funds); while issuers in other jurisdictions are taking time to digest the rapid acceleration and development of the market, and consolidating strategies elsewhere, including for social and sustainability bonds. The market will have a chance to reassess pricing and take stock of macro risks like forex and trade volatility over the summer before returning with a clear backlog of trades in the autumn.

Figure 3. Green bond market growth (USD Bn) by sector



Source: SEB analysis based on Bloomberg and SEB data. SSA: Sovereign, sub-sovereign (municipal/regional), Supranational and Agency.

Figure 4. Sectoral evolution (% share of annual issuance)



Source: SEB analysis based on Bloomberg and SEB data

A powerful constitution of underlying green infrastructure investment dynamics on both risk and opportunity sides of the equation as well as new policy attention stands ready to continue to support the momentum from 2017 and bolster green bond issuance in 2018 as issuers across sectors find green projects on their balance sheets. As of 1H18, renewable energy continued to be the largest use of proceeds allocation for reporting issuers at 48%, followed by green buildings and sustainable transportation at 26% and 14%, respectively.

As just one example of the dynamics in the clean energy space, a mixed picture in 2018 is emerging, with dollar investment in solar under pressure while commitments to wind power, electric vehicles and batteries are running above 2017 levels. The slippage in solar reflects two main developments – significantly lower capital costs for photovoltaic (PV) projects, and therefore fewer dollars spent per megawatt installed; and a cooling-off in China's solar boom.

[3] SEB uses Bloomberg (BNEF) data which includes self-labelled green bonds as well as those tagged by Bloomberg as green bonds. For methodologies used to qualify green bonds see Bloomberg (2018) *Guide to Green Bonds on the Bloomberg Terminal*. Asset-level bonds, schuldscheine and private placements are included and pure plays are excluded. The data are supplemented by SEB from other sources to provide a more current assessment of issuance, since there is a lag for some green bonds being uploaded to the Bloomberg Terminal.

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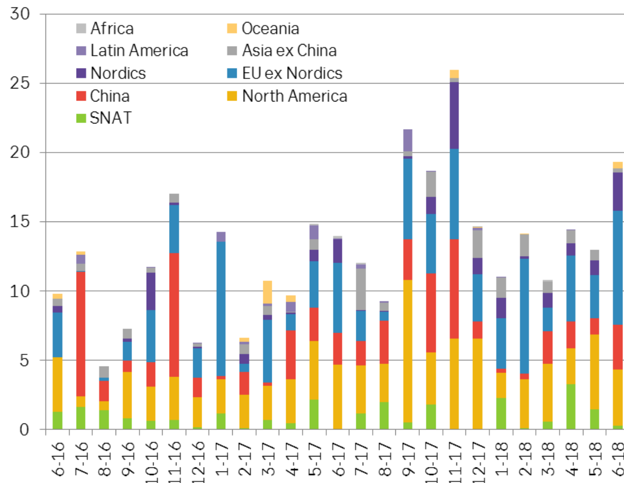
According to BNEF, reflecting this dynamic, global investment in clean energy[4] stood at USD 138 billion in 1H18, down just 1% YoY but 2Q18 saw a rise to +8% YoY to USD 77 billion.

At the same time, the companies currently committed to the RE100 campaign (125 companies from 20 countries committed to 100% renewable power) will need to procure an estimated 172TWh (equivalent to Sweden's annual power demand) of additional renewable energy generation by 2030 to meet their targets. If corporations were to meet this demand through PPAs, it could catalyse 87GW of new solar and wind build, representing a potential USD 94 billion investment opportunity.

Figure 5. Regional distribution of green bond issuance



Source: SEB analysis based on Bloomberg and SEB data

Figure 6. Top 15 geography by issuance in 2018, incl. Supranational

Rank	Geography	YTD 7/2018 ($ Bn)	Rank Change YoY	Issuance Volume Δ YoY
1	USA	18.5	=	-13%
2	CHINA	9.4	+1	-22%
3	FRANCE	9.2	=	-38%
4	SNAT	9.1	=	57%
5	BELGIUM	6.1	NEW	∞
6	SPAIN	4.9	+4	124%
7	SWEDEN	4.3	=	47%
8	CANADA	3.5	+5	125%
9	NORWAY	3.0	+17	1618%
10	GERMANY	2.8	-5	-20%
11	NETHERLANDS	2.8	-5	-16%
12	INDONESIA	1.9	NEW	∞
13	SOUTH KOREA	1.6	+8	426%
14	ITALY	1.5	-2	-19%
15	JAPAN	1.4	+1	130%

Source: SEB analysis based on Bloomberg and SEB data. SNAT: Supranational

Geographic activity is already very broad and dispersed; with 34 jurisdictions[5] (excluding Supranationals) featuring green bond issuance in 2018, compared to 40 in 2017 (and 50 in total since 2007). In 1H18, Iceland (Landsvirkjun), Lebanon (Fransa Bank) and New Zealand (Auckland Council) joining the ranks of countries with domestic green bond issuers. In a sign of how the market is diversifying geographically, the top three countries for 2018 (as well as stalwarts such as Germany and the Netherlands) were all running below their issuance levels from last year by double digits.

The center of gravity for the market pulled back somewhat on its shift towards **Europe** in 2018 (Europe still accounted for 45% of 1H18 issuance compared to 37% YoY). An analysis of moving Last Twelve Months (LTM) of green bond issuance shown in Figure 8 visualises how cumulative LTM figures for Europe (ex-Nordics) have been rising continuously over the last two years to reach USD 53 billion, and the Nordics have almost tripled their contribution since October 2017 to USD 15 billion.

As previously described this shift driven by European corporates, financial institutions and sovereigns, has been underway alongside increasing policy attention; as the European Commission adopted its sweeping Action Plan on Sustainable Finance and the Technical Expert Group on Sustainable Finance (TEG) started its work in July on making proposals in relation to the priorities of its Action Plan on sustainable finance. The main tasks of the group are to assist the Commission in the development of:

- An EU taxonomy of environmentally sustainable economic activities;
- An EU Green Bond Standard;
- A category of "low carbon" indices for use by asset and portfolio managers as a benchmark for a low carbon investment strategy;
- Metrics allowing improving disclosure on climate-related information.

[4] Renewable energy excluding large hydro-electric projects, plus equity-raising by companies in smart grid, digital energy, energy storage and electric vehicles.
[5] Classified by Ultimate Parent Country of Risk.

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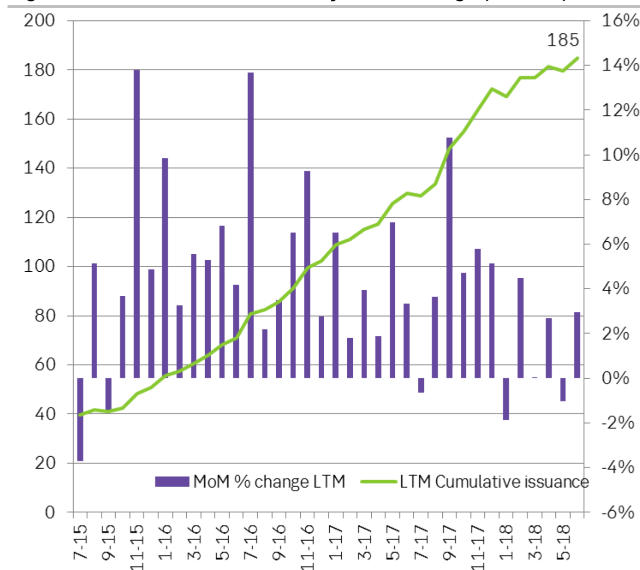
SEB, represented by Marie Baumgarts (Head of Group Sustainability) was also privileged to have a representative elected to the EC TEG, following a highly selective process.

In terms of country rank (Figure 6), with USD 18.5 billion of issuance YTD the United States rested comfortable in familiar first place which it had held all throughout 2017. Green securitisations from five issuers account for 58% of US issuance; with Fannie Mae cataloguing their market leading USD 10.2 billion of green MBS issued through 1H18. In June, SEB had the honour to act as Co-manager and Green structural advisor when Fannie Mae successfully issued a USD 535 million 10-year Green Guaranteed Multifamily Structure (GeMS) mortgage backed security. SRI investors made up for over 40% of the number of participating accounts, a new record for Fannie Mae.

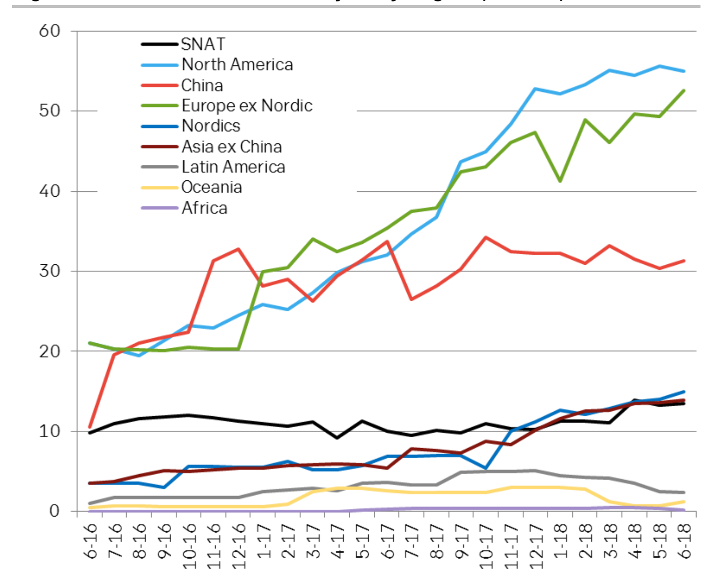
At least three other US-securitisations occurred in 1Q focused on rooftop solar PV as well as PACE receivables. In a very positive development for the market sales of green bonds by U.S. corporates in 1H18 jumped over municipals, exceeding their full year 2017 volume already and are on pace for a record year, split between financials (17%) and non-financials (7%). The remaining 16% of the US market came from 25 municipal entities, including the California Infrastructure & Economic Development Bank, State of New York and D.C. Water; and a handful of project bonds.

Figure 7. Last Twelve Months Analysis / % change (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data

Figure 8. Last Twelve Months Analysis by Region (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data.

As shown in Figure 6, a less serrated, more regular and granulated Chinese market returned to second place, adding at least USD 9.4 billion YTD according to Bloomberg figures. The distribution is dominated by corporate borrowers, split between financials (50%) and non-financial corporates (30%); the remainder comes from agencies (such as China Export-Import Bank) along with a burgeoning set of green securitisations. 2Q18 saw the largest quarter for Chinese green ABS issuance with 5 deals totaling USD 659 million.

Using Bloomberg figures, Chinese issuance appears to be down 22% YoY; however, official figures show Chinese issuance standing at USD 13 billion (Onshore: USD 7.77 billion/ Offshore: USD 5.25 billion) which would equate to an 11% hike YoY. CBI finds that out of the USD 13 billion only USD 9.3 billion meet international green definitions; which explains the difference in the numbers. LTM figures in Figure 8 show that Chinese issuance has been above USD 30 billion for almost a year, but has drifted down from a peak of USD 34 billion to around USD 31 billion.

At the same time, as can be seen in Figure 8, LTM issuance from Asia-ex China has almost tripled over the last year, passing Supranationals as a category to touch USD 14 billion in June, with Japan, South Korea, Indonesia, Hong Kong, Singapore, Malaysia and others making increasingly significant contributions as some of these economies add policy incentives to stimulate the market.

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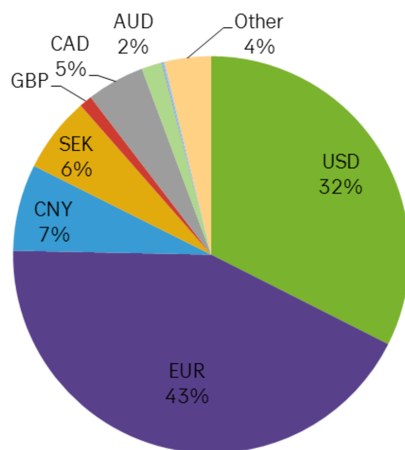
The French green bond market, in third place with only seven individual issuers; with the Agence France Tresor's sovereign OAT taking making up a third of the volume and two thirds coming from corporate non-financial (Engie, Paprec) and financials (BNP Paribas, CA-CIB and Fonciere INEA).

Supranationals held steady in fourth place by rank but by issuance volume were up 57% YoY, with eight multilateral and regional development banks active in a wide variety of currencies and maturities through taps as well as new lines, totaling USD 9.1 billion. The European Investment Bank was leading the pack into July by volume.

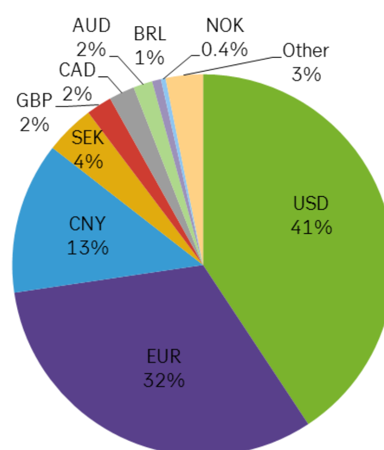
Other notable geographic hotspots include Sweden, up 47% YoY in terms of volume with USD 4.3 billion of issuance courtesy of 11 repeat issuers, helping to nearly reach its full year 2017 result half a year in advance. Norway was another very bright spot, leaping 17 places in the league tables with issuance soaring 1618% YoY to pass USD 3 billion.

Figure 9. 2018 YTD green bond issuance by currency



Source: SEB analysis based on Bloomberg and SEB data

Figure 10. Cumulative green bond issuance by currency 2007-2018



Source: SEB analysis based on Bloomberg and SEB data. SNAT: Supranational

In terms of currencies (Figures 9-10), the key takeaway from 1H18 was that the market shifted towards Euros, reaching 46% at one point before falling back to 43%. This trend is driven by strength in the corporate EUR market, with financials as well as non-financial corporates, such as utilities, alongside sovereigns favouring EUR. The USD green bond market (32%) made its return to the stage with the retrospective integration of Fannie Mae's green MBS (as they report figures quarterly) and 18 U.S. municipalities. CAD, AUD, and SEK also proved popular currencies to target for supranational issuers raising green capital in 2018. The percentage of all SEK denominated bond issuance in green format surged to a world record of 16% in 2Q18 2018, up from 6.6% over the course of 2017.

SEB's annual regional analysis (described in previous editions) suggests that 2018 will be a year of consolidation with more modest growth. This is reflected in our base-case scenario showing the market having the potential to grow to **USD 185 billion in 2018**, with the possibility to surprise to the upside once again and cross to **USD 210 billion**. SEB revised its base case scenario upwards by 7% to reflect the adjustment in Bloomberg's own revisions to its year end 2017 totals (up 7% to USD 173 billion).

The SEB USD 185-210 billion range was constructed "bottom up" through a sector-by-sector analysis described in edition 1Q 2018 (1) that examines the potential for issuance across geographies and within the categories of Sovereign, Supranational, Agency, Municipal (and sub-sovereign), Corporate, Securitizations, and Project Bonds.

An analysis of moving Last Twelve Months (LTM) of green bond issuance shown in Figure 7 visualises how cumulative LTM figures have trended ever higher over the last two years, surpassing USD 100 billion in January 2017, peaking in December 2017 at USD 163 billion, pausing in January and then rising up to USD 185 billion in June but likely to fall to USD 175 billion or so over the summer before resuming its climb.

A waterfall diagram presented in Figure 11 shows how the USD 87 billion of issuance YTD can be broken down by classical public (SSA) and private (corporate and asset level) splits. SSA

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issuance was down by 2% YTD compared to last year. Sovereign issuance is exceeding our expectations (passing full year 2017 levels already) with seven active issuers, and as such we upgrade our year end potential figure to USD 17 billion, with further upside potential commensurate with the half dozen countries mulling sovereign issues for 2018/19.

Supranationals have been exceeding expectations, up 57% YoY, and approaching 2017 full year issuance figures already by June. As such, we upgrade this sector to USD 14 billion for 2018. However, issuance from both agencies (such as National Development Banks and other domestic public financial institutions) and municipalities are well below their potential, down -53% and -26% YoY, respectively. We are placing agencies on watch for a downgrade to their potential for 2018 issuance.

The corporate green bond market has been particularly buoyant overall with USD 40.3 billion up by 27% YoY. Financials have been the driving force behind this vitality with USD 24.4 billion up 85% YoY, and look to be on track to exceed our estimate based on the assumptions we set in place at the beginning of the year. The issuance of green covered bonds grew strongly in 1H18 with four new bank issuers in 2018 taking the total to USD 6 billion outstanding from seven issuers. This trend looks set to continue with vigour in 2018 and beyond as the financial case behind green mortgages continues to strengthen. In May, SEB launched Green Mortgages, offered with a 10 basis point reduction on the interest rate paid to anyone with housing that Sweden's National Board of Housing, Building and Planning have assigned an A or B rating for energy efficiency.

After a great 1Q, non-financial corporates lagged somewhat as discussed above and were down 14% YoY. We believe this level of issuance is well below its potential, due to the fact that some truly expansive geographies and sectors have yet to even get going.

With regards to other types of green bond issuers, securitisations appear to be well on track up by 6% YoY at the end of 1H18. Finally, it has been a fairly busy year to date for green private placement project bonds, which are also proving popular financing mechanisms in emerging and developing economies.

Social and Sustainability Bond Market Update

As noted above, growth prospects for the green bond market in 2018 can be expected to be balanced by issuers and investors taking time to absorb the impressive acceleration that has occurred in the market to date, while calibrating their strategies and also considering opportunities via **emergent social and sustainability bond** financing channels.

This trend is already clearly visible in the market. Social bond issuance in 2Q18 came to USD 2.4 billion in 6 currencies resulting in a H1 2018 total of USD 4.7 billion. Sustainability bonds were also plentiful in 1H18, with 2Q18 seeing USD 2.6 billion issued in 3 currencies, taking the YTD volume to USD 7.5 billion, up from USD 5 billion YoY.

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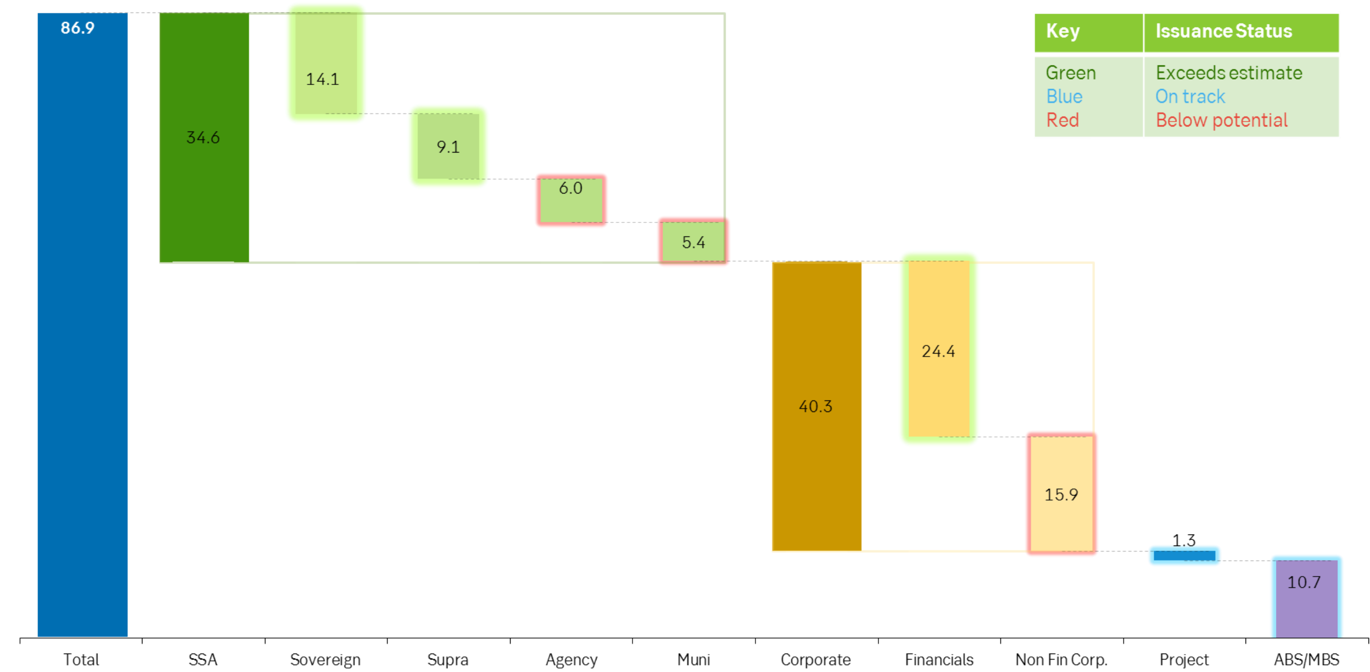
Figure 11. Green bond issuance in 2018 by sector and sub-sector (USD Billion)



Notes: ABS/MBS = Asset Backed Securities/Mortgage Backed Securities; SSA = Sovereign, Supranational, Agency and Municipal, Regional and other sub-sovereign; Financials include Real Estate and Insurance; N-F Corp. = Non-Financial Corporates. SEB uses the BICS sector classification system with some adjustments using Bloomberg/MSCI green bond sector classifications. Bloomberg (see Guide to Green Bonds on the Bloomberg Terminal) methodologies used to qualify green bonds, including Schuldscheine and private placements, and excluding pure plays.

Source: SEB analysis based on Bloomberg/BNEF and SEB data.

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2. Publicly Announced Green, Social & Sustainability Bond Pipeline[6]

- Al Omrane (Dirham)
- Banco Nacion Argentina
- Bancolombia
- Credit Suisse (EUR)
- EIB Sustainability Bond
- Epsa
- IREDA (Green Masala)
- Korea East-West Power
- Mexico City (MXN)
- Monash University
- New Development Bank (Green Panda)
- Nigeria Green Sovereign (Tap)
- NY MTA
- OCBC NISP
- San Francisco PUC
- State Bank of India (USD)
- Walloon Region

[6] As of 31 July 2018

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Climate & Sustainable Finance SEB

3. External reviews – the importance and the complexity

Gabriella Eriksson
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Transparency and quality are two words often used when describing the green and social bond markets and are often referred to as two critical facets to safeguard.

External reviews are meant to do precisely that. And so, market participants look to independent third parties with assessment skills across a range of fields (such as environmental or social vetting knowledge or verification, assurance or scoring skills) to provide this type of input. In fact, the external review is perceived as so central to the green and social bond issuance process that voices are occasionally raised to make it a core principle of the Green & Social Bond Principles (GBP/SBP), elevating it from the level of a recommendation. It appears increasingly in policy and regulatory discussions around the world, with some jurisdictions making it mandatory, or even attaching labelling and certain monetary incentives to offset incremental costs of procuring an external review.

Nonetheless, while there is sufficient evidence to point towards a general appreciation of the external review as an important feature in the market, one may also note that there is a broad range of review services and assessment types on offer. Over the last decade, some 50 institutions now offer such a service, however their offerings are difficult to compare given the amplitude of methodologies and models in combination with a lack of uniform language for expressing these variations. Navigating this increasingly complex ecosystem of services has already become a challenge to market participants. Thus, on this basis, and following a consultation among its members and observers, the GBP/SBP launched a work stream with the aim of providing market participants with greater clarity on external reviews.

SEB volunteered to chair this working group on external reviews and had the privilege to do so over the past year. It has been a journey both in terms of consolidating and digesting the views and knowledge presented to the group, but it has also been a rewarding process from the point of view of finding an efficient and effective approach to making the universe of external review services more accessible. Engaging in this topic has inspired us to share our own experience and opinions from working with external reviews:

Why are external reviews important?
Taking a step back and looking at the concept of external reviews from SEB's experience over the years, we can say that they have proved important in several aspects and also to many functions in the bank. SEB has been an underwriter of green bonds for a decade, but we are also an investor (also with a dedicated green bond fund). Importantly, we are also a green bond issuer and have gone through the process of obtaining an external review ourselves. So, a few words on how we perceive the value of external reviews from those three perspectives;

1) As an underwriter we are in the business of financial due diligence, but with a green bond we also make it part of our own five pillar process (GBP four core components and the review recommendation) to always conduct environmental due diligence. Obtaining an external review on the green credentials of the bond allows us to evaluate and verify the quality and the transparency, and of course also to outsource the environmental due diligence (and associated work load) to the appropriate parties, credible and independent experts, and in so doing, secure prudence for the issuer and the bank before going ahead.

2) Therefore, the procedure of going through an evaluation by an independent expert also reduces the headline risk for the issuer. We think that one of the principal yet perhaps more subtle benefits of going through a green bond issuance process is that it activates and mobilises human capital – the external review process and dialogue issuers enjoy with experts is a fundamental part of this calculus. SEB has helped numerous issuers (together representing about 1/6 of the issued green bond volume globally) in the process of entering the green bond market and has thus had the privilege to follow the impact that the dialogue with the second opinion provider has had. As a result of this dialogue and the questions raised during the assessment, almost without exception, the issuer has taken the chance to re-evaluate potential pitfalls and how to best handle them going forward, as well as addressing this in their green bond framework.

Hence, to reiterate, and as recognised by many others in the market, we believe that the procedure of issuing a green bond contributes to preparing the issuer not only for the issuance in itself but may also positively impact the capability of handling climate and environmentally

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related challenges internally. Perhaps this is indeed what the credit rating agency Moody's alluded to, for the real estate logistics company Prologis, in a report published in February (ahead of issuance) that stated "the establishment of a green bond framework is credit positive". This was highlighted in an article in the Financial Times recently.

3) Almost all of these benefits to the underwriter and to the issuer also accrue to the investor. Beyond these, the external review is useful to investors as it provides insight into the green credentials as well as alignment with the GBP, certifications, standards and similar. In other words, it facilitates making an informed investment decision not only from the familiar financial risk-reward perspective, but also from a climate and environmental perspective.

Indeed, in a recent investor survey conducted by the GBP/SBP, among 51 (out of 56 possible) respondents from the buy-side member and observer universe, 37% responded that they require an external review of the bond and/or framework. And 80% said they found the External review form (a form filled out by reviewers of an issuer's framework/bond) useful, which likely indicates that the external review is an important tool in the investment decision even for the investors to which an external review is not (yet?) a mandatory investment criteria. Similarly, several stock markets keeping specific lists for green bonds have made the publication of an independent external review criterion for inclusion.

Nonetheless, the investor survey also flagged suggestions for improvement around transparency and comparability as well as clarity on independence – topics which were all addressed in the GBP/SBP work on external reviews this year.

How can complexity in the external review ecosystem be addressed?
The aim of the working group on external reviews was to create more clarity, with the end result being twofold. Firstly, a reframing of the definitions of the four review categories set out in the main Green and Social Bond Principles document and secondly, the creation of a mapping template to be filled out by reviewers (on a voluntary basis of course) providing further information on their respective review services.

Market participants have witnessed a dramatic expansion in the external review ecosystem in recent years with a subsequent increase in complexity. As mentioned, we are aware of some 50 review providers, all of which, to a varying degree, have their bespoke models, approaches, scope and regional focus. In addition, some of them may offer more than one type of service. Consequently, the task of the working group was to capture some of this variety for the purpose of refining the GBP/SBP definitions and to structure the template such that it reflects the main characteristics of the review offerings on the market. Simply put, this voluntary template is meant to give external reviewers a new vehicle to articulate their valuable input and analysis in a structured manner that extracts important information which can be compared by market participants in order to facilitate a market functioning more efficiently.

We approached the task by reaching out to a number of reviewers with an established experience across a variation of review types to ensure a representative sample. Their presentations provided us with valuable input, highlighting important parameters to be reflected both in the definitions and in the template.

Seen in the light of our own experiences over the years, we would like to share some of SEB's main takeaways of this work stream with you:

- With a more profound understanding of the services available came the realisation that we all, reviewers not exempted, may have slight variations in perception of the terminology and vocabulary used in the market. Consequently, restricting the description of the services to the four review types defined in the GBP/SBP may not be sufficiently granular nor may it necessarily accurately reflect a common understanding of the underlying definition of each review type (Second Party Opinion, Verification, Certification, Green Bond Scoring/Rating). In addition, it is not unusual for a review service to combine several review elements, which together may be classified into more than one of these four review types. This example of ecosystem complexity led to the introduction of a more granular outline in the template, the Building Blocks, which in combination with the four review types (which consequently were also refined) may provide market participants with a higher level of insight into the services offered. Taking this a step further, this may indeed point towards a need for a certain harmonisation of language.

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- The concept of independence was almost unanimously underlined as an important feature in order to safeguard credibility (among working group members and reviewers alike as well as parties external to this work stream). This led to the clarification in the GBP/SBP definitions that consultancy services and second opinions from third parties should be conducted separate from one another.

- Lastly we would like to highlight the depth and range of knowledge and skills the review providers represent, each with a variation in their core focus, enabling issuers to find a good match with their needs - be it a solid allocation assessment, a proper assurance on the investor reporting, a confirmation of alignment with the GBP/SBP, a comparison with a standard, a verification letter for a certification, an in-depth environmental analysis of green project categories, a judgement of performance criteria or an evaluation of the green and social impact of a bond, and so on. In essence, the review service requested may be articulated in relation to the characteristics of the issuer's project or asset portfolio as well as in relation to the conditions set by timing and assessment procedures and thus the perceived fit with the capabilities of various review providers.

- More importantly, this also translates well into the investor perspective, for example in relation to the fit with required confirmations of certain investment criteria or to enable investors to get a fast overview of the quality of the individual frameworks or bonds. A well structured overview of the review services space will allow investors to better understand what type of assessment they receive from the respective review services.

To conclude, we would like to take the opportunity to thank everyone involved in providing valuable input, and for contributing to the work performed in the working group, throughout presentations and through efforts elsewhere. We would also like to raise the importance of ICMA, not only for their critical contributions to the work during this year, but also for hosting the infrastructure and empowering the working groups to get more traction when reaching out.

Further information
The mapping template is available online at the GBP/SBP webpage under External Reviews / External Review Service Mapping. This is also where the completed templates will be posted.
https://www.icmagroup.org/green-social-and-sustainability-bonds/external-reviews/

Many of the topics raised during the work and points addressed in the template were also further developed (through additional consultation with a broader set of reviewers) and formalised in a voluntary guidance document for external reviewers ("Guidelines for Green, Social and Sustainability Bonds External Reviews", which can be found under the same link as above). This effort, conducted as a separate work stream, was designed to contribute to the integrity of the market by providing further clarity on the role of external reviews. The Guidelines include (i) an updated typology of external reviews, (ii) ethical and professional standards and (iii) organisation and content.

Further updates from Green & Social Bond Principles AGM

The updated versions of the Green Bond Principles, Social Bond Principles and the Sustainability Bond Guidelines were published at the GBP/SBP AGM & Conference in June. Some of the key changes to the Principles this year included:

- GBP: Distinction between suggested project types and five high level environmental objectives, namely climate change mitigation, climate change adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control;
- GBP: Reference to international and national initiatives to produce green taxonomies and classifications;
- SBP: Refinement of the definition of target populations that benefit from Social Projects;
- GBP and SBP: Revised definitions of external review services; Emphasis on timely reporting by issuers to investors in the case of material developments;
- SBG: confirmation that ESG or sustainability themed bonds are not aligned unless fully consistent with the four core components of the Principles.

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Translations of the 2018 versions of the Principles into several languages are underway.

Making Progress on Impact Reporting

During Q2, the Working Group on Impact Reporting for green bonds produced suggested metrics for reporting on Clean Transportation Projects in addition to metrics for Waste Management and Resource-Efficiency Projects published earlier in the year.

Similarly, the Social Bond Working Group developed a Harmonized Framework for Impact Reporting for Social Bonds including core principles and recommendations for issuers as they develop reporting processes. The document also provides a reporting template covering quantitative and qualitative information that issuers can adapt to their own circumstances.

Mapping to the Sustainable Development Goals

Although not designed as a framework for investments, the Sustainable Development Goals (SDGs) launched in 2015 by the United Nations and adopted by 193 countries, have been proactively embraced by the investment community as a means of additional evaluation to track the Environmental, Social and Governance (ESG) impact of investments. In response to this trend, a High-Level Mapping of the Principles to the SDGs has been published. At this stage, 15 out of the 17 SDGs have been identified as relevant to Green, Social or Sustainability Bond eligible project categories. A spreadsheet supplement was released alongside the guide, which contains a more detailed listing of the SDG targets mapped to the GBP and SBP.

Investors Feedback

The Research Working Group launched by the Executive Committee in Q1 2018, has published the results of its inaugural survey undertaken in Q2 which targeted the buy-side to extract patterns of investor behaviour in the green, social and sustainability bonds market. The survey found that 68% of investors will not account for a bond from pure plays as green, social or sustainable, if not aligned with the Principles. Read the full Summary of Investor Survey published on the Resource Centre.

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Climate & Sustainable Finance SEB

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4. How ESG Factors May Affect Corporate Credit Ratings

Environmental, social, and governance risks and opportunities – collectively known as ESG – are of growing interest to all market participants. With the potential to affect the capacity and willingness of an entity to meet its financial commitments in various ways, it is important to understand how S&P Global Ratings incorporates ESG factors into credit ratings – and, crucially, the material impact they can have on ratings.

Climate impacts on credit

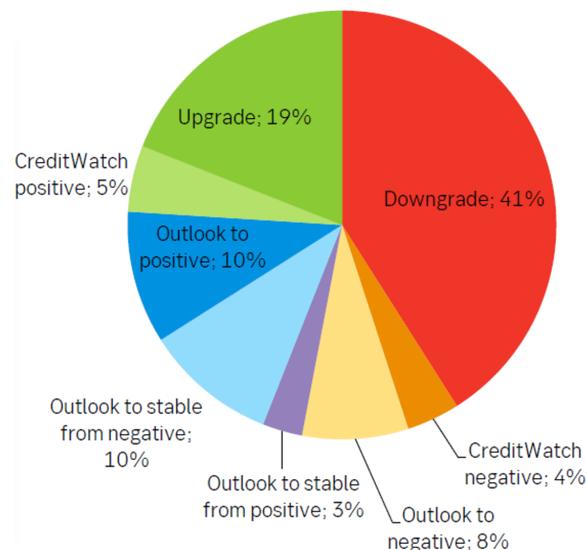
With rising temperatures comes a plethora of new environmental risks and opportunities. The most palpable of these is physical risk. As defined by the Task Force on Climate-Related Financial Disclosures (TCFD), physical risk comprises increasingly frequent and severe weather events and longer-term changes to climate patterns. Notably, this may have financial implications for companies, such as direct damage to assets and indirect impacts from supply chain disruption – which could have a material impact on corporate credit quality.

Other risks can involve the transition to a low-carbon economy. This may entail extensive policy, legal, technology and market changes – all of which throw up new risks for companies. Change, however, may also bring new opportunities. For example, organisations that pro-actively look to new markets or assets types may be able to diversify their activities, thereby better positioning themselves for the transition to a low-carbon economy. This could also have a material impact on credit quality – in the positive direction.

Environmental and climate (E&C) risks and opportunities can affect the capacity and willingness of an entity to meet its financial commitments in many ways. As such, S&P Global Ratings incorporated E&C factors, where material in our view, into the qualitative considerations and forecasts for the entities we rate.

Moreover, recent S&P Global Ratings research found that – from mid-2015 to mid-2017 – E&C risks and opportunities featured in a significant 717 of 9,000 ratings actions. That is, when a rating is either raised or lowered, when an outlook is revised, or when a rating is placed on CreditWatch. Also meaningful is that, out of the 717, an E&C risk or opportunity was part of the key rationale to a ratings action in 106 cases. Of these, 56% were negative and 44% positive.

Figure 4.1. Rating Actions Related To E&C Risk



Source: S&P (2017) How Environmental And Climate Risk and Opportunities Factor into Global Corporate ratings

The results from this research contrasted with the previous two-year review, which looked at ratings actions between mid-2013 and mid-2015. In that research, 79% of ratings actions with an E&C factor as key to the rationale were in the negative direction, with only 21% in the positive direction.

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So what does an increasing number of positive ratings actions associated with E&C factors mean? While it is difficult to draw conclusions at this stage, some potential contributory factors could be that more companies have effectively mitigated E&C risks, or that more are benefiting from various transition opportunities or from changes in environmental policy.

The risks

After physical risk, the two most common E&C factors to affect ratings updates in our most recent study were transition risk and policy and legal risk. Both of these indicate the rapidly expanding global trends of mitigation and adaptation, as countries around the world attempt to slow global warming and fortify themselves against its consequences.

Indeed, policy actions around climate change are continuing to evolve. The objectives of these actions generally fall into two categories – those that aim to constrain actions that contribute to climate change, and those that promote adaptation to climate change. Examples include implementing carbon-pricing mechanisms to reduce greenhouse gas emissions and promoting more sustainable land-use practices.

There has also been a recent increase in climate-related litigation claims by property owners, municipalities, states, insurers, shareholders, and public interest organizations. Reasons for such litigation include the failure of organizations to mitigate impacts of climate change, failure to adapt to climate change, and the insufficiency of disclosure around material financial risks. And as the value of loss and damage arising from climate change grows, litigation risk is also likely to increase.

The material impact

In 2015, S&P Global Ratings downgraded Volkswagen (VW) to A-/A-2 because of transition risks and policy and legal risk – as well as reputation risk. Our assessment of VW's risk management framework included our view of VW's management of its material environmental and social risks. And so, following the admission that the company installed software designed to manipulate diesel engine exhaust emissions in 11 million vehicles, there were wide-ranging negative consequences. This is because we believed that VW's breach of U.S. environmental law – and potential other laws elsewhere – represented a significant reputational and financial risk over the medium term.

However, there have also been positive ratings actions as a result of regulatory changes and management of those changes. For example, Vattenfall AB’s outlook was revised to stable from negative – a change that can be categorised under transition risk and policy and legal risk. The key rationale was threefold: improved business risk profile due to the sale of lignite assets; regulatory changes in Sweden and Germany around nuclear waste; and increased commissioned capacity from the expansion in wind production under different supportive subsidy schemes. We deemed that the sale of the lignite assets, completed in September 2016, reduced the company's exposure to negative political intervention, merchant power prices, and carbon dioxide emissions, and transferred a large amount of asset-retirement obligations.

S is for Social

The “S” in ESG comprises the social risks that a company faces. Defining these risks is no easy task, as they are linked to complex and dynamic interactions between a company, its stakeholders and the society at large. S&P Global Ratings has identified two main categories of social factors relevant to our corporate credit ratings: internal social factors and external social factors.

Internal social factors comprise risks and opportunities associated with a company’s management of human capital and safety. These factors are typically internal to companies or their suppliers and are therefore – to a certain extent – under their control. Human capital management, for example, relates to a company’s capacity to develop a long-lasting productive workforce, while reducing potential operational disruptions from workforce mismanagement. In most cases, we expect social risks and opportunities to have direct impacts on companies through increased costs, operational disruptions, and lower quality of products or services.

On the other hand, external social factors include risks and opportunities associated with a company’s exposure to trends such as: demographic factors to do with population growth and composition; changing consumer behaviours, including increasing awareness about the

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environment, health and privacy; and social cohesion risks and opportunities stemming from geopolitics, conflicts, community unrest or terror attacks.

While external factors are less within the company's control than internal factors, we found that internal factors of safety and human management have had a historically greater impact on global corporate credit ratings. In our review of social factors in global corporate credit ratings between mid-2015 and mid-2017, we found 346 cases where social factors (both internal and external) were explicitly identified as relevant to the rating, and 42 cases where social factors – both event-driven and those occurring over a longer time period – resulted in a rating action. Moreover, we found social factors contributed less frequently to ratings actions than E&C factors. However, when social factors were material to the ratings, the consequences were overwhelmingly negative to credit quality compared to E&C factors. And while the cases were spread across various sectors, retail and restaurants, leisure and sports, and regulated utilities were the most frequently affected.

For example, Israel Electric Corp. (IEC) was put on CreditWatch Negative placement one year ago, due to negative implications associated with the strike by IEC's employees. This consequence of an external social risk, human capital management, led us to revise IEC's liquidity assessment to less than adequate from adequate, exposing the rating to a multi-notch downgrade.

That's not to say ratings changes in the positive direction, as a result of social factors, aren't possible. For example, last year Pacific Gas & Electric Co. was upgraded on the basis on an internal social factor of safety management. The one-notch upgrade resulted from a gradual improvement in the company's business risk profile following the 2010 San Bruno gas transmission explosion. The company had since strategically implemented a multi-tier approach to rebuilding its reputation and reestablishing its credibility with all of its stakeholders – including demonstrating a safety culture with tangible results.

Managing and mitigating

Lastly, governance. When assessing corporate ratings, we consider factors such as the strength and durability of an entity's business, the size and structure of its financial commitments, its liquidity, and – importantly – the quality of its management and governance. This entails adequate practices, policies and processes at both management and company-wide levels. Moreover, the management and governance assessment includes consideration of environmental and social risk management, as relevant.

Ultimately, a diverse range of E&C risks and opportunities has been present in our ratings actions and it is important to note that they have the potential to affect the creditworthiness of companies. So how companies manage these risks, seize new opportunities, disclose their exposure, and approach environmental and climate factors may prove crucial in determining their financial viability.

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5. Summary from Climate Change and the Cost of Capital in Developing Countries

Great efforts are being made to integrate climate related risks into financial market decision-making. Exemplifying this is the work of the Financial Stability Board's task force on climate related disclosure, market leadership initiatives such as the Global Climate 100, and the newly established Network of Central Banks on Greening the Financial System.

In principle, the prize for success is a win-win. Owners of capital take improved account of risks previously mis-specified, and often under-estimated or simply ignored. Moreover, the world becomes a safer place for humans as higher risk, carbon intensive or climate vulnerable assets are re-priced and capital flows towards low carbon, climate resilient investment, lending and insurance opportunities.

The good news is that, in practice, all of the above is happening and will increasingly happen. The not-so-good news is that these developments will directly hurt some of the world's poorest and most climate-vulnerable nations.

The market logic is impeccable. Climate vulnerable countries are higher risk in a world of accelerating climate change. Integrating climate into financial market decisions crystallises such risks into a higher cost of capital. Most of these countries are amongst the poorest in the world. The problem is not climate per se. After all, the Netherlands is largely below sea level, but its wealth and several centuries of infrastructure investment have made it one of the better investment bets in a world facing climate change. So being climate vulernable, through no fault of their own, and being poor, means that they face the ravages of climate change, and now in addition face a higher cost of capital.

Perfect market logic, but in no way a just and equitable outcome.

The 'V20' group of climate vulnerable countries asked the UN Environment to commission work to surface this problem and so start a process of working out solutions. UN Environment, with financial support from the Swiss-based, Mava Foundation, commissioned Imperial College Business School and the School of African and Oriental Studies to figure out the numbers associated with this perverse and problematic outcome.

The fruits of this initial work, 'Climate Change and the Costs of Capital to Developing Countries' has just been published. The econometric modeling suggests that climate vulnerability has already raised the average cost of debt in a sample of developing countries by 117 basis points. In absolute terms, this translates into USD 40 billion in additional interest payments over the past ten years, on government debt alone.

Incorporating higher sovereign borrowing rates into the cost of private external debt, we estimate that climate vulnerability has cost these countries USD 62 billion in higher interest payments across the public and private sectors. The report indicates that additional interest payments attributable to climate vulnerability could increase to between USD 146 – 168 billion over the next decade.

Figure 5.1 demonstrates that countries with greater sensitivity to climate impacts tend to have higher sovereign borrowing costs. Figure 5.2 indicates that the relationship is reversed for countries with higher social preparedness.

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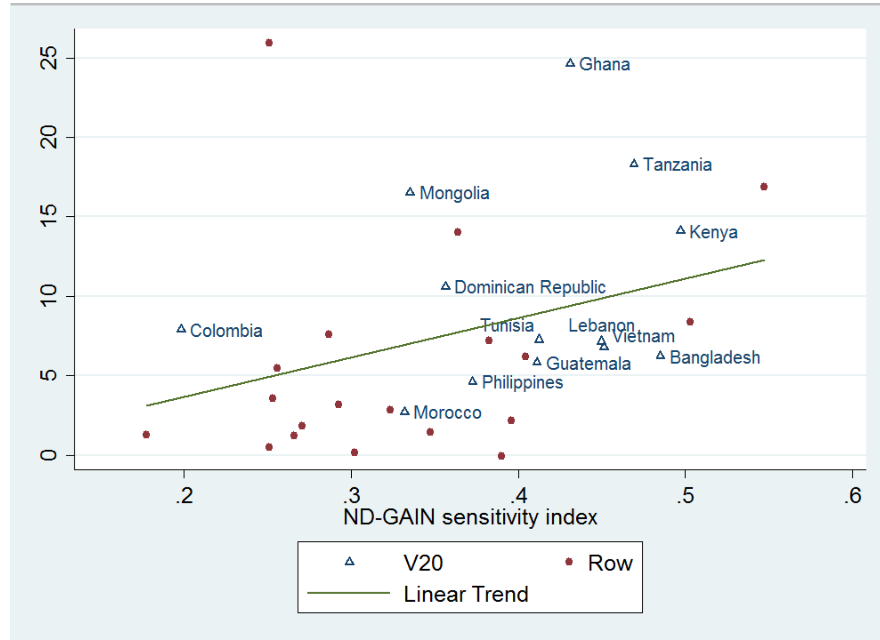
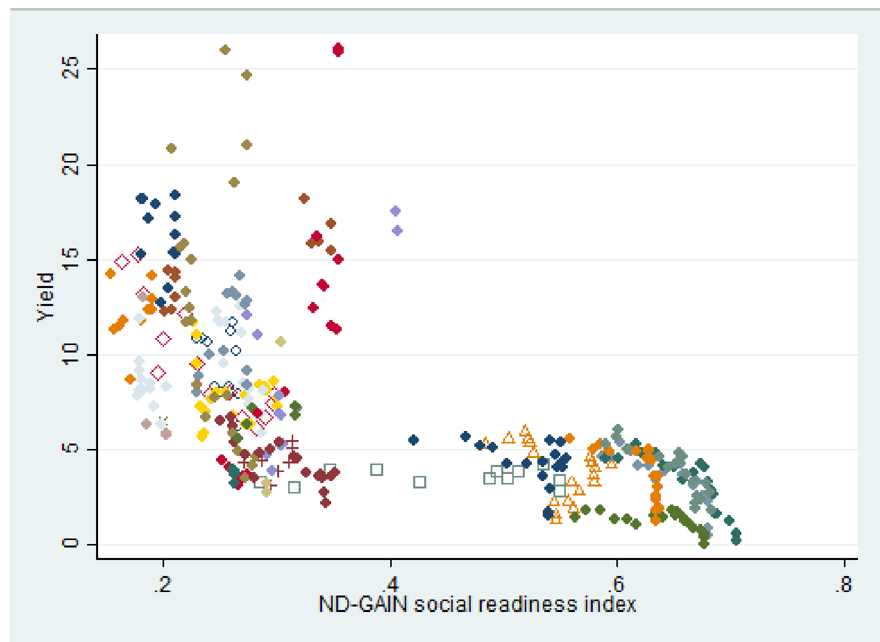
Figure 5.1 Cost of debt and ND-GAIN Sensitivity, 2016



Source: Compiled with data from Bloomberg and ND-GAIN

Figure 5.1 Cost of debt and its relationship to ND-GAIN Social Readiness Index Sensitivity, 1996-2016



Source: Compiled with data from Bloomberg and ND-GAIN.
Note: Excludes multilateral debt.

The quantitative conclusions, in a nutshell, are that for every ten dollars paid in interest by climate vulnerable developing countries, an additional dollar will be spent due to climate vulnerability. This effect of integrating climate risk into financial market decision making, which is expected to at least double over the next decade, poses a major financial burden to present-day economic challenges of many developing countries.

What then can be done? The report describes a range of market and policy initiatives that can help reduce these additional financial burdens by improving the resilience of affected countries. To be effective, climate adaptation initiatives must accomplish at least one of three imperatives: reduce the costs of climate impacts, improve the speed of economic recovery, and/or cost-effectively transfer climate-related financial risks. These imperatives are not mutually exclusive.

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That said, the increase in the costs of debt servicing associated with climate vulnerability is an issue of concern beyond economics and finance. It touches upon a country's capacity to fund education, health, infrastructure, and enable basic standards of living. Because poorer countries tend to have relatively weak sovereign ratings and higher borrowing rates, they are particularly sensitive to new financial risks. Greater overall debt burdens could prevent poor countries from funding the investments required to protect their citizens and economies from the physical manifestations of climate change, at a time when those investments are most needed.

Clearly these challenges do not eminate from poorer countries themselves, and so might need then to be addressed through international co-operation. Possibly some compensation mechanism could be considered, most usefully if used to incentivise low carbon, climate resilient infrastructure investment that would protect citizens, improve productivity and economic development prospects, and ultimately in turn reduce the cost of climate risk senstive capital.

The full report can be downloaded from: http://unepinquiry.org/publication/climate-change-and-the-cost-of-capital-in-developing-countries/

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