From Junk Bonds to Green Bonds - Do Sustainability Ratings Matter?

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Abstract
The market for green bonds has been growing rapidly in recent years globally, thereby making them one of the most promising financial instruments to support environmental sustainability. For traditional corporate or sovereign bonds, rating agencies have been key actors to reduce information asymmetry to facilitate the development of debt markets. External reviews, certifications, second or third party opinions and in particular sustainability ratings can play a similar role to verify the sustainable feature of green bonds, which in turn can inform credit analysis and impact investment decisions. However, while there is no uniform definition for green bonds yet, common criteria and methodology for sustainability ratings is also lacking. The paper analyses the theoretical economic functions of sustainability ratings for green bonds and the current international approaches and practices for them. It concludes that there might be much room for improvement for such sustainability ratings and that increased market competition among rating providers might be a key condition of the possible future development of these ratings.

Keywords: environmental sustainability, green bonds, climate bonds, ratings

1. Introduction

A green bond is "*any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing eligible Green Projects (...) and which are aligned with the four core components of the GBP"* (ICMA 2017, p. 2.). Several aspects of their rapidly increasing market have been discussed in papers and market commentaries published in recent years. Many of them deal with the evolution of this new asset class and the challenges to establish the necessary definitions and standards for them (see for instance World Bank 2015; OECD 2016). Other pieces of research focus on more specific issues like their investor base (see for instance Bank of America Merrill Lynch 2014) or pricing characteristics (see for instance Östlund 2015; Prag&Andersson 2015). Nonetheless, very few papers have discussed the role of external reviews so far, and even less have focused on sustainability ratings of green bonds.

Ehlers & Packer (2016, p. 4-5.) discusses the many different instruments that have emerged to certify "greenness", including second opinions and green ratings, and highlights that these certification schemes differ across a number of important dimensions. Importantly, the authors consider that a limitation of green bond second opinions is that they do not mandate monitoring and verification on an ongoing basis. However, for investors it would be highly useful to have green bond certifications refreshed periodically. While theoretically index providers can serve this function by excluding bonds that no longer comply with some pre-determined criteria, the authors argue that ratings from major agencies might also be helpful in this regard.

ICMA et. al. (2016, p. 24-25.) discusses the current practices of green bond ratings in some details. Among the advantages, the paper highlights the potential to integrate such ratings with credit rating services so as to help expand the labelling and certification of green bonds into the much broader and deeper mainstream debt capital markets. By that way green bond issuers could benefit from rating agencies' credibility in the mainstream financial markets. At the same time, the paper points out some challenges as well, for instance independence (conflict of interest) issues and the needed specialized expertise. The paper recommends that rating methodologies should reflect that a green bond cannot get a high green bond rating based on good management of proceeds and reporting processes alone if the bond is not funding sound green projects, and that green credentials of the bond should be evaluated against more detailed definitions of green than the high level categories proposed by the GBP.

2. External reviews and ratings

External reviews play an important role in the green bond market. The most widely accepted framework for green bonds, the International Capital Market Association's Green Bond Principles (GBP) recommend that - among other things - an issuer's process for project evaluation and selection and the issuer's management of proceeds be supplemented by an external review. These external reviews can serve as an input into the formulation of the Green Bond Process and also to confirm the alignment of the bonds with the key features of the GBP. The Principles contain a non-exclusive list of four potential types of external reviews: consultant reviews, verifications, certifications and ratings. These ratings are separate from an issuer's ESG rating as

they typically apply to individual securities or Green Bond frameworks. (ICMA 2017).

In this paper, I use the term sustainability ratings for green bonds meaning a qualitative or quantitative approach by which certain grades are provided to the securities which express the extent they are efficiently and effectively contributing to environmental sustainability. Such ratings should be clearly differentiated from credit ratings, which reflect the credit quality of a bond.

Whereas the GBP contain only broad and high level principles, the so called Climate Bond Standards (CBS) constitute a more robust and effective certification system for climate bonds. Since climate bonds are a subset of green bonds, they have to comply with the GBP and also meet additional requirements as set out in the CBS. Accordingly, issuers seeking a Climate Bond Certification have to meet certain pre-issuance requirements which include engaging a verifier to assess the readiness of the issuer and the proposed bond to conform to the standards. Similarly, the post-issuance requirements of the CBS require assurance from a verifier that the issuer and the bond comply with the relevant requirements of the CBS (Climate Bond Initiative 2017).

Sustainability ratings for green bonds do not have a strong role in these frameworks. The current internationally used standards for green bonds only put an emphasis on second party or assurance opinions to provide an independent confirmation for investors about the compliance with the standards. While this is logical and understandable, it can be argued that such opinions have a somewhat limited efficiency from an environmental policy perspective. As explained in details in Gyura (2017), it can be argued that simple yes or no-type opinions are inferior to sustainability ratings.

Most importantly, external opinions without a rating do not allow comparability between different green bonds and therefore do not support true competition among issuers. Neither does their binary nature provide much incentive for the issuers to pursue environmental excellence and to compete with their own previously issued bonds. In the universe where bonds are either green or not green, the superiority of a bond that more efficiently finances projects with higher environmental benefits will not be recognized. What is more, opportunistic issuers may even feel tempted to engage in a race to the bottom, whereby they target a green label with the least environmental efforts (and therefore least costs).

3. Analysis of sustainability rating methodologies

Many companies and NGOs provide ESG (environmental, social and governance) sustainability ratings for companies. Sustainability ratings for green bonds are much less common. Based on Gyura (2017), I analyze three major rating methodologies in the following section based on their global presence and coverage for bonds.

Not surprisingly, the most important players of the credit rating industry have also established their green bond assessment business, and some of them also offer rating-like services. Credit rating agencies explicitly declare that these assessments are not to be confused with credit ratings, and that they are provided as so called Other Permissible Service under the applicable regulation.

Moody's has launched its Green Bond Assessment service in 2016. Its approach is principally qualitative and it focuses on five factors, all of which stem from the Green Bond Principles. These factors are: Organization; Use of Proceeds; Disclosure on the Use of Proceeds; Management of Proceeds; and Ongoing Reporting and Disclosure. A composite grade is constructed out of these factors, which formulates the basis for the overall assessment ranging from GB1 (Excellent) to GB5 (Poor). A bond with a GB5 rating is still a green bond in Moody's opinion, but this indicates a poor approach to "manage, administer, allocate proceeds to and report on environmental projects financed with proceeds derived from green bond offerings" and poor prospects for achieving the "stated environmental objectives". In contrast, a GB1 rating reflects an excellent approach and prospect in the same dimensions (Moody's (2016, p. 2).

Another major rating agency, S&P has chosen a largely different approach. The agency's Green Evaluation is more of a numerical and quantitative nature. While S&P provides a second opinion on the alignment with the GBP, it also assigns a so called "relative green impact score" on green bonds. This relative green impact score is based on scores for three dimensions: transparency, governance and mitigation (environmental impact) or adaptation (resilience level). These are ultimately combined to produce a so called final Green Evaluation, which is on a scale between 0 and 100. This final rating is driven mainly by the environmental dimension. Transparency and governance cannot improve the final Green Evaluation, but they can have a neutral or negative effect on that (S&P Global Market Intelligence 2017).

Within transparency, three factors are scored: the quality of disclosure, reporting, and management of bond proceeds. The governance score evaluates the measures taken to measure and manage the environmental impact of the proceeds of the bond, while the mitigation score expresses the environmental impact of the use of proceeds over the life of the assets, considering several variables (S&P Global Market Intelligence 2017).

Besides the aforementioned large credit rating agencies, other organizations also issue rating-like assessments. CICERO, a Nordic NGO that has been issuing second opinions on green bonds for several years, has applied the so called Shades of Green methodology since March 2015. Strictly speaking, these are not ratings: the three shades of green are used to classify CICERO's second opinions. However, they do perform the functions of ratings as they differentiate between green and greener bonds and allow comparison of different green bonds. The shades reflect an overall, qualitative assessment of how well the issuers' green bond framework supports the transition to a low-carbon and climate-resilient society. By the means of the Shades of Green methodology, the climate and environmental ambitions of the projects supported by the green bond and the robustness of the governance structure of the green bond framework are assessed.

The three shades (light, medium and dark) correspond to an increasing level of supporting a low carbon and climate-resilient or otherwise environment friendly future. The best rating is dark green which is reserved for projects that today already apply the low carbon and climate-resilient solutions of the future. The Shades of Green approach is applied for each of the project types in the framework, and then an

overall shading for the green bond is given (CICERO 2016, Gyura 2017). The differences and similarities of these rating frameworks can be summarized in Table 1.

Table 1: Comparison of rating methodologies
Source: Gyura (2017).

	Moody's	**S&P**	**Cicero**
Nature of rating	Qualitative	Mainly quantitative	Qualitative
What is rated?	(i) Organization; (ii) Use of Proceeds; (iii) Disclosure on the Use of Proceeds; (iv) Management of Proceeds; (v) Ongoing Reporting and Disclosure	Transparency, governance and mitigation or adaptation	How well the bond supports transition to a low-carbon and climate-resilient society
Rating grades	GB1 (Excellent) to GB5 (Poor)	The final Green Evaluation is on a scale between 0 to 100, which is divided into 5 grades ranging from E1 (highest) to E5 (lowest)	Light, medium, dark green

4. Analysis of current ratings

Moody's has published altogether 16 Green Bond Assessments since the launch of this service until June 2017. The issuers had a mixed background such as municipalities, banks and companies. Interestingly, all issues received top (GB1) rating out of the five possible grades (Moody's s.a.). While theoretically it is completely possible that all issues were excellent to "manage, administer, allocate assets to and report on environmental projects financed by proceeds from green bond", it can be argued that it is certainly somewhat unusual that all assessed securities got the best rating.

S&P has only started its Green Evaluation services in April 2017 and therefore could only issue 6 assessments since May 2017. There is slightly more variability here in the final ratings. Again, almost all issues received top grade (E1) with only one issue getting the second best (E2). However, S&P's methodology allows some variability

within the grades. For the E1 graded issues the overall scores ranged from 77 to 92 (S&P s.a.).
Cicero has issued more Shades of Green opinions. Altogether 28 opinions were published until June 2017 (CICERO s.a.). The majority of green bonds got the best (dark green) rating, although the weighted share of medium green rated bonds is higher (2nd Table).

Table 2: CICERO's Shades of Green Ratings Distribution (2015 to June 2017)
Source: Author's calculations based on data available at CICERO (s.a.) and issuers' websites

	Number	Share	Weighted share
Dark Green	16	57%	40,7%
Medium Green	11	39%	58,6%
Light Green	1	4%	0,0%

This indicates that medium green bonds issues were on average larger than those of dark green ones, as also shown on Chart 1 below.

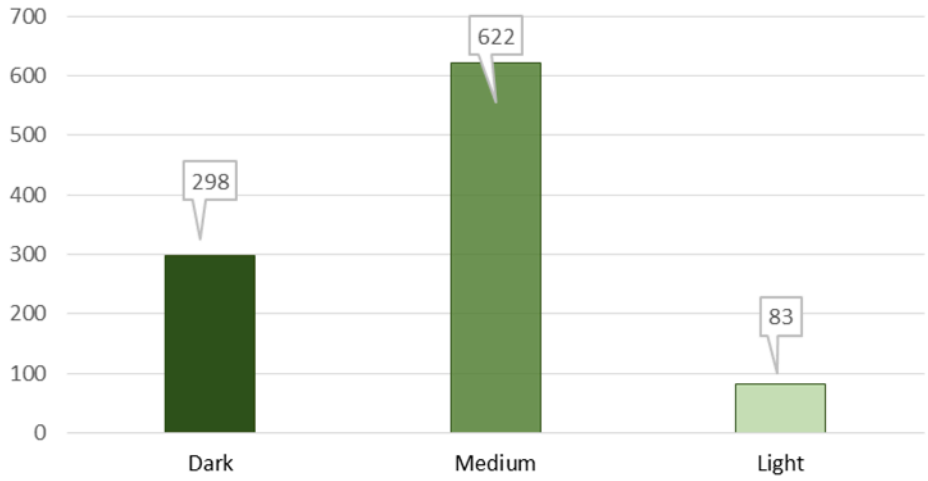

Chart 1: Average issue size (2015 to June 2017, USD million)
Source: Author's calculations based on data available at CICERO (s.a.) and issuers' websites

5. Discussion

As explained in Section 2, there are strong arguments for increasing the importance of sustainability ratings for green bonds. Obviously, it would be equally important to avoid excessive reliance on ratings as well, a failure seen with external credit ratings for (non green) securitized assets in the subprime financial crisis of 2007-2009. The green bond standards themselves do not promote sustainability ratings any more than simple second opinions, and it would be probably unwise to change the standards or

to issue regulations so that such ratings gain importance in a non-organical (non-market based) way. (It is worth mentioning here that in financial regulation regulatory driven reliance on external credit ratings is being drastically reduced.) As a result, it is probably the quality of sustainability ratings that could potentially increase their importance.

Quality in turn might be fostered by increasing competition between agencies providing sustainability ratings. It could be argued that issuers (who currently pay for these services) would order sustainability ratings if the latter was an important benchmark for green investors, something that might be a key element of their investment decisions. In this case the more credible, reliable and informative ratings might provide a competitive edge for green bond issuers using the best rating agencies' services.

But how to decide which rating is the "best", i.e. the most credible, reliable and informative (at a given price, obviously)? A precondition for that the market's selection forces can work is that rating agencies methodology is as transparent as possible. Credit rating agencies put a lot of emphasis on making their rating approach transparent (in fact, they are also legally forced to do so). The current sustainability rating methodologies as published are fairly short and concise compared to credit rating methodologies, even if accounted for being less sophisticated and less complex.

Once that – based on the methodology - investors can understand more thoroughly what factors and how are being rated for a given green bond, it becomes theoretically possible to compare rating (given at a point in time) and reality. For credit ratings, rating performance is easy to capture since assets' credit quality changes throughout the lifetime of bonds or loans. Credit rating agencies periodically and also on an ad-hoc basis issue rating reviews which can track such changes. Obviously, such subsequent ratings to some extent also allow to back test how thorough the initial rating assessment was. (Here an important question is to assess whether subsequent rating changes were driven by foreseeable or unpredictable factors.) By analogy, during the lifetime of a green bond, a subsequent rating might be used to rate – for instance - the extent the green bond framework was adhered to or the projects actually financed by the bonds.

Of course, these are much more difficult to observe externally than the credit quality of a bond, so subsequent sustainability ratings would have to be relying to a large extent on the impact reporting of the issuer. Still, with time it would become possible to back test the accuracy of the initial ratings, and thus for investors to identify the most reliable sustainability rating providers. However, there have been very few (if any) such subsequent ratings so far, which is of course explainable also by the fact that the ratings themselves were only recently issued.

Another effective way to foster competition between sustainability rating providers (complementary to the previously mentioned one) would be if the same green bond issues were rated by multiple agencies. Again this is quite common with credit ratings, but very rare with sustainability ratings. Multiple ratings not only allow the investor to apply the four-eyes principle, but also to assess which rating proves to be the most precise during the lifetime of the green bond. Unsolicited ratings might play

a role here, although due to cost reasons it looks unlikely that such ratings would be issued in the short or middle term future.

In Section 4 I showed that currently top sustainability ratings are quite common. This may be because of several reasons. It is possible that only issuers of the greenest bonds hired rating agencies (a kind of a positive selection bias), or – alternatively – it may be a sign of a grading scheme in which it is fairly easy to receive top ratings. In either case a potential way to incentivize environmental excellence would be to set the "bar" higher time by time, so that bonds need to become even "greener" to get the best rating. While this might raise some comparability challenges in time series, green technologies (and in fact even the green bond standards) are evolving fast, meaning that the greenest investment today might be the least green tomorrow.

Lastly, it would also be important to let the watchers be watched by someone else, so that sustainability raters are exposed to even stronger market discipline. Researchers – be they market analysts or academics – might play a useful role in empirically testing sustainability ratings. However, today the conditions are to a large extent missing for this. There are still quite few green bonds outstanding and very few have sustainability ratings, not to mention multiple ratings for the same green bonds. Time series are also quite short for obvious reasons, and subsequent ratings (rating reviews) are virtually non-existent, too, making rating migrations unobservable. While green bond standards recommend (or in some cases, require) impact reporting, the impact reports published so far do not seem to be a proper basis for rating back testing, for several reasons, but in particular because of non-comparable, non-standardized and often on-audited contents.

Conclusion

As a young and fast-growing asset class, green bonds need to establish and maintain credibility in the eyes of investors. External reviews are one the most important pillars for that. Out of the many types of external reviews for green bonds, sustainability ratings seem to be the most informative and most capable to spur competition in greenness among issuers. However, today very few agencies provide such ratings and very few green bonds are rated from a sustainability point of view. In this paper I have argued that sustainability rating should not be promoted via regulation but rather by the superior quality of them compared to simple yes-or-no-type second opinions.

For that purpose in turn, a stronger competition between rating providers seems to be needed, which might be fostered by increased transparency in rating methodology and the issuance of subsequent ratings and multiple ratings for the same green bonds to make rating accuracies' assessment possible. Here researchers may also have an important role to empirically study sustainability ratings, although the conditions for detailed empirical studies are largely missing today.

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