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Sovereign issuers in the face of the sustainable revolution

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Abstract

In the ecological transition of the world economy sovereign issuers have a fundamental role to play in mobilizing resources to finance the Sustainable Development Goals, as well as mitigating the effects of the current crisis caused by the COVID-19 pandemic through national reconstruction plans that are presented as an opportunity to reassure the commitment to a sustainable economy. Green bonds were the pioneering instrument aimed at channeling these resources. However, after a few years of experience, we begin to observe proposals for financial innovation that suggest the possibility of resorting to more efficient structures to achieve the scalability and consolidation of these financing instruments, such as green certificates and twin bonds.

Keywords: *sovereign green bonds; greenium; sustainability; green finance.*

Introduction

In 2007, the Intergovernmental Panel on Climate Change (IPCC) - a United Nations agency that provides scientific information on climate change and its political and economic impact - published a report called AR4 that presented robust scientific evidence linking human action with global warming. This milestone, together with the observation of a greater number of natural disasters and extreme weather events, constituted the beginning of a global awareness of climate change, and the financial sector began to consider its marginal contribution to the issue. In the capital markets framework, the first major innovation was undoubtedly the issuance of green bonds, the essential element of which is the issuer's commitment to use the funds raised for projects that have a positive environmental impact.

This instrument is of particular importance for meeting the financing needs derived from the Sustainable Development Goals (SDGs) for the year 2030, as agreed in Paris (2015), which remarked the role of the financial sector in this ecological transition, sparking the authentic sustainable revolution. The involvement of the private sector is key in this challenge (Alonso and Marqués, 2019) both due to its exposure through their investment portfolios, but also because of its function as intermediary channeling the necessary funds to transform our economy into a sustainable model. Therefore, there is no doubt that the scope of this challenge in achieving these goals is so huge that success depends on public-private collaboration. It is enough to note that it is currently estimated that the European Union needs EUR 290 billion a year in additional financing to achieve a carbon-neutral economy by 2050. The validity of this transformation of the economic model is highlighted by the recent announcement by such international authorities as the United Nations Secretary General pointing towards the need for the recovery of world economies to be based on a sustainable model (UN, 2020). Likewise, in Europe there is widespread demand for support for the revitalization of the single market and financial recovery in a green and digital transition, as core areas underpinning the relaunch and modernization of national economies (EP, 2020). This is demonstrated by the European Commission's recent commitment to maintain its calendar of programs that began with the European Green Pact (December 2019) and the European Climate Law (March 2020). It is not clear whether the high fiscal costs derived from the current crisis caused by the COVID-19 pandemic will limit progress or delay the transition towards environmentally aligned public policies, but this is undoubtedly an opportunity to lay the foundations for economic growth and ensure minimization of the long-term risks associated with climate change.

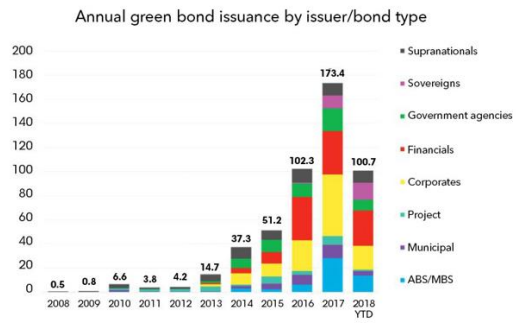
In this sustainable revolution, financial institutions have created an extensive battery of instruments linked to the environment, from green mortgages to credit cards with a limit based on the carbon footprint for retail clients, through certificates or securitization of green assets, such as renewable energy. In Spain, non-financial companies have been pioneers in the issuance of green bonds (Iberdrola 2014) and public issuers have gradually been starting to follow this same strategy for years (the Official Credit Institute - ICO - and Adif Alta Velocidad are two examples). Sovereign issuers have perhaps been the last to join the process of transformation (see Chart 1 – Bloomberg NEF)[1], possibly because their different economic nature makes it impossible to assimilate the operations of a country with a company (Krugman 1994)[2]. Thus, the purpose for which green bonds were created (identification of the use of funds) would be better adapted to the case of private issuers whose environmental impact is limited to the characteristics of the assets on their balance sheet, credibly allowing investors to quantify this commitment, which is viewed as its sustainable reputation. However, sovereign issuers can affect the climate in other ways, specifically by using their regulatory power and fiscal capacity as a means to generate income with repercussions on climate change depending on the policies adopted. For example, if a sovereign were to issue a green bond, which it justifies with the claim that it is to be used to clean its coasts, but then lowers taxes on fossil fuels, would that issuer be fulfilling the transformation that investors expect of their green bond? Similarly, would that sovereign's green bond really be trading its exposure to climate change risk?

[1] Recently, in April 2020, the Community of Madrid launched the first green bond issued by a Spanish public administration, following a conventional commitment structure regarding the use of funds.

[2] In 1993 Jacques Delors argued that the unemployment problem in the European Economic Community was due to a lack of competitiveness, and he used the words of US President Bill Clinton who said that his country was "a great company competing in the world market". This led economist Paul Krugman to review the definition of a country's competitiveness vis-à-vis a company. Intuitively, a large company's income statement is literally that, the result of its profits and losses, so if it cannot pay its employees, suppliers, and debtors, it will run out of business. On the other hand, a country may be more or less content with its economic development, but it does not run out of business. We might think that the balance of its current account balance will determine its position of strength in terms of imports and exports, and will therefore determine the wealth of its population, but it is not so simple. Interdependencies in international trade mean that countries do not compete in a zero-sum game, as for example Coca-Cola and Pepsi could otherwise do by competing for drink sales. Ultimately, the numbers show that the quality of life in a country is determined more by domestic factors than by how the nation competes in international markets.

In 2019, the volume of green sovereign bonds amounted to USD 76 trillion, which despite still representing less than 5% of total living sovereign debt had undergone growth by 60% on the previous year (according to Bloomberg data), largely due to investor demand and popular commitment. That is why sovereign issuers are accompanying this shift towards sustainability with a process of financial innovation, exploring new models that are compatible with the requirements for responsible investment, such as liquidity and scalability of emissions.

Chart 1. Evolution of the issuance of green bonds, by type of issuer.



Source: Bloomberg NEF

This article aims to review in retrospect the origins and evolution of conventional sovereign green bonds, as well as their current situation and possible future scenarios. To do so, recent emissions from Poland and the Netherlands are reviewed, and then two innovative structures that are being assessed by different sovereign issuers today, including their advantages and disadvantages, are analyzed. Of particular concern is the proposal for the issuance of twin bonds by Germany and green certificates by Denmark. Finally, the added value of these new alternatives is evaluated.

Brief retrospective study of green bonds

Following the publication in 2007 of the IPCC AR4 report, a group of Swedish investors and pension funds began to think of ideas to use their available funds to contribute to a climate solution. In conversations with the country's investment banks, they contacted the World Bank[3] due to its position as a leading international body in the fight to reduce poverty, and for its knowledge of economic, social and environmental promotion around the world. In retrospect, the solution seems simple: to ensure that the investment is channeled into programs that have the greatest positive impact for the planet. The idea was clear, but how are such projects to be found? And above all, how can their impact be measured?

To do so, the Swedish investors contacted the International Center for Environmental Research (CICERO), located in Oslo, where a group of leading researchers were able help assess and advise on the impact of the funded projects. Less than a year later, in November 2008, the World Bank issued its first green bond, creating a global benchmark for other issuers (see the box below for details of what is technically considered the world's first green bond, although focused on a smaller scale, issued by the European Investment Bank - EIB-).

In essence, we consider a green bond to mean any simple debt issuance in which there is a commitment by the issuer to dedicate the funds raised to green projects and periodically report on their use and the impact caused on climate change. To do so, the classic debt issuance program is complemented by a new document called *framework* that will collect the details of the issuer's sustainability strategy[4], as well as new *disclosure* or communication requirements for clients and investors, by *reporting* on the use of funds, treasury, selection and monitoring of projects, including the measurement of their impact. All of this is validated by a new role known as external evaluator (ICMA 2018), a service that might constitute one of the main innovations in conventional green bonds, and which focuses on providing transparency to a market in which trust between investor and issuer is cornerstone.

The first green bond had a structured format

At the same time that the World Bank was beginning its journey with the study of its first green bond, what is technically considered the first green bond was issued in 2007 by the European Investment Bank (EIB), classified as a *Climate Awareness Bond* (CAB). Curiously, this first bond was created with a structured format. It was tied to the performance of an equity index, the newly created FTSE4GooD. It was also linked to the destination of the raised funds, which were committed to financing projects in the field of renewable energy and energy efficiency. As a new feature, it included an expiration option, whereby the invested money could be received in cash or dedicated to removing from circulation the equivalent amount of carbon allowances from the *European Emissions Trading Scheme* (ETS).[5]

It took some time before such a structure could be part of the field of sovereign bonds, as it meant a change from the idiosyncrasy of public sector issuance. In most countries when debt management offices raise money, it is never tied to a specific goal, as it is inherent to the philosophy of green bonds. To find the first case of a sovereign issuing a green bond we have to go back to Poland in 2016. Subsequently, Belgium, France and Ireland have followed with green issues, as well as public agencies such as the German KfW and the EIB itself in the supranational issuers subsector. Outside of Europe, Chile, Indonesia and Nigeria have issued green bonds, as well as

[3] For further explanation, see World Bank(2018).
[4] Common practice involves the issuer's adherence to "green principles" such as those promulgated by the International Capital Market Association (ICMA) and the Climate Bonds Initiative (CBI), which normally establish the minimum conditions necessary for inclusion in a framework in order for it to be considered a green bond, namely (1) justify the use of funds, (2) the evaluation and selection of projects, (3) the management of the treasury and (4) the commitment to reporting the impact of projects.
[5] See Alonso and Marqués (2019) for further information on new sustainable financial instruments.

certain semi-sovereign American entities such as the California state pension fund.

Globally, in the public domain, Fannie Mae[6] is the largest issuer of green bonds by annual volume and on a smaller scale, it is worth mentioning that the small country of Fiji issued its first green bond in 2019.

Why do green bonds exist?

A question of price: the *greenium*

The issuance of green bonds can only be financially justified if they offer more value than a conventional bond with the same economic conditions. So, if a sovereign can issue for 10 years with a 2% coupon at a price of EUR 100, then we should be able to issue a green bond that pays the same coupon at a price of, for example, EUR 101. From the issuer's perspective, a green bond offers less flexibility since it requires a greater commitment than a conventional bond, so it would only opt for this type of indebtedness if, under equal conditions, it achieves a better financing cost. From the investment point of view, those agents that are most committed to the sustainability of the planet are possibly interested in knowing about the use that is made of their contributed funds, whereby they not only hope to achieve financial profitability, but also want to define the use that is made of the funds and know about their social and/or environmental impact. It is therefore reasonable to suppose that in exchange for this commitment they are willing to give up part of the financial return.

In other words, a green bond can be broken down into (1) a financial commitment, in the form of coupons and principal to maturity, plus (2) the promise that the funds raised will be used for activities that have a positive impact on the environment. We therefore expect the value of this commitment to be positive in order to justify the existence of this asset class, and we should be able to obtain that value by comparing the financial flows of a traditional bond and those of a green bond with the same characteristics, such as amount, priority of payments and maturity. Following this reasoning, if we go to the market and compare the price of these two types of bonds, we observe that the theoretical assumption that there is a positive premium between the price of green and conventional bonds of the same issuer is very closely fulfilled. In fact, so-called greenium is the premium (or discount in terms of returns) of green bonds at the time of issue. The empirical evidence to date remains inconclusive on this greenium and varies in amount, but on average it would be around 1 or 2 basis points (b.p.) of discount in profitability. In other words, slightly lower profitability is required for issuers to finance green projects compared to other traditional indebtedness, so the market offers incentives (albeit few) to commit to climate change[7].

Going deeper into the scientific literature, numerous studies have already addressed this topic. Serena et al. (2019) analyzes 268,083 issues, of which 1,131 are classed as green, finding that there is no premium for financial issuers, while in the case of non-financial corporates and especially supranational issuers, there is a "*greenium*" in the primary green bond market. In contrast, Karpf and Mandel (2017) find a small negative greenium in the United States municipal green bonds market. A justification for these divergent results can be found in Bachelet et al. (2018), where 89 bonds from institutional and corporate issuers are analyzed. Although for private (small) issuers they find a negative greenium in green bonds compared to conventional ones, this is partly explained by the lower liquidity. On the other hand, for institutional issuers, with greater liquidity, they find a greenium of around 2 p.b. Finally, in a large cross-sectional study over time, Zerbib (2019) estimates the greenium between green bonds and traditional equivalents at an average of 2 bp. for the entire sample (between 2013 and 2017), corroborated after analyzing EUR and USD portfolios separately.

It is not only profitability, it is also stability

This empirical evidence suggests that certain additional considerations to the risk and return expectations may be being considered by investors in these products, such as liquidity, which makes the magnitude of the financial premium that measures green commitment difficult to determine in isolation.

Although this premium may seem small, there is an additional factor to take into account when explaining the growing interest in this type of issue in the market, namely the stability of the investor base. When debt issuers perform debt operations, one of the most valued variables, together with the cost of financing, is frequently the stability of their bondholders, so if the number of sales orders in the secondary market were low and therefore the share price is at its most stable, sovereign issuers would look to attract, in their green bond order books, accounts or investors with a real interest in maintaining their buying position in said securities (*buy* and *hold* accounts). On the contrary, in traditional bonds there would be a higher percentage of less conservative or *fast money* investors, which would make their prices in the secondary market more volatile. In CBI (2018) estimations, green bonds to date have attracted an average of 55% of investors specializing in green assets. For instance, the inaugural Dutch issue had a distribution of up to 82.5% in accounts denominated "*Green real money*" (Reuters, 2019).

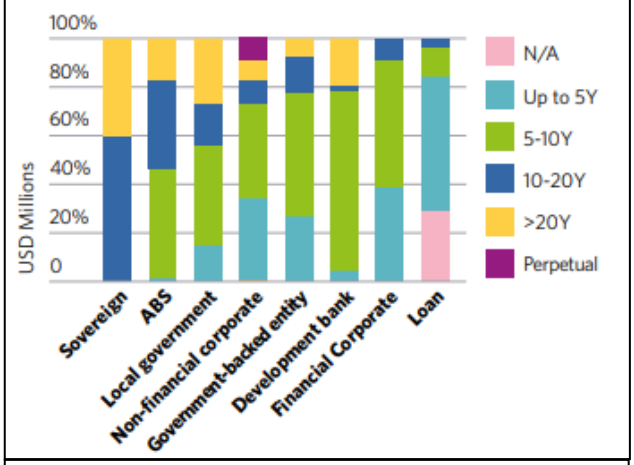
This type of stability is especially important in the case of sovereign bonds, which tend to be considered risk-free reference issuers in their respective jurisdictions.

[6] Fannie Mae is the popular name for the Federal National Mortgage Association (FNMA), an entity guaranteed by the US government whose work is to give depth to the secondary mortgage market, through the acquisition and subsequent securitization of these loans, in order to facilitate reinvestment by financial institutions in the real estate sector.

[7] BBVA (2019) studies the evolution of the greenium of the issuer KfW, as well as the evolution of said premium in the secondary market, observing its volatility, which ranges between 2 and 6 p.b.

The search for stability creates the effect of broadening the investor base that would be attractive to sovereign issuers, since part of this investment profile would be genuinely new, as these managers are less concerned with market volatility, and more with the purpose of their investment. In parallel, it is interesting to observe how the maturities of green sovereign issues are normally longer term than those of other types of issuers (see Chart 2).

Chart 2: Sustainable Debt Maturity Structure by Issuer Type



Source: ICMA Green Bonds – The state of the market 2018

Typically, long-term bond issuers partner with investors such as pension funds and insurers seeking to match the durations of their investment portfolios with their liabilities, this being an associated management strategy.
Therefore, green debt issues would fit with the traditional investor profile of sovereign issuers. Following the same example, 33% was allocated to pension funds and insurers (the majority investor category in the order book) in the inaugural Dutch issue, followed by 31% allocated to investment funds and asset managers.

A matter for the future

As we have seen so far, green bonds are currently slightly more expensive for investors than traditional bonds, although this situation is somewhat inconclusive due to the short history of the market. Thinking about the viability of these financial products in the future, we perform a small exercise in abstraction and ask where things might stand 30 or 50 years from now.

In a favorable future scenario[8] in which the concentration of greenhouse gases is lower than current levels, it would be foreseeable that large investors would come to see green bonds as a luxury asset, resulting in a potential shortage of supply in the primary market.

However, what is considered the base case scenario or BAU –business as usual– by the IPCC is not so optimistic [9], taking global warming to 4.5 degrees Celsius above pre-industrial levels. Given this circumstance, the population is expected to be fully aware of the need to decarbonize the economy more aggressively, and investors should decide to dedicate a higher percentage of their budget exclusively to products with a positive environmental impact, and be forced to focus their investments on green bonds, to the detriment of other less necessary types of investment[10].

While these scenarios are uncertain, the reality is that the odds are skewed towards one in which the environment is not a luxury, but a necessity. Along these lines, we have recently heard how the first vice-president of the European Commission has defended this point before the European Parliament, stating that "the European Green Pact is not a luxury, but a lifeline to emerge from the crisis against the coronavirus [...] Green recovery is not only possible, but crucial, given that Europe would lose twice if we mobilize investments to restore the old economy before turning it green and sustainable"[11].

National experiences

Poland and Holland, the pioneers

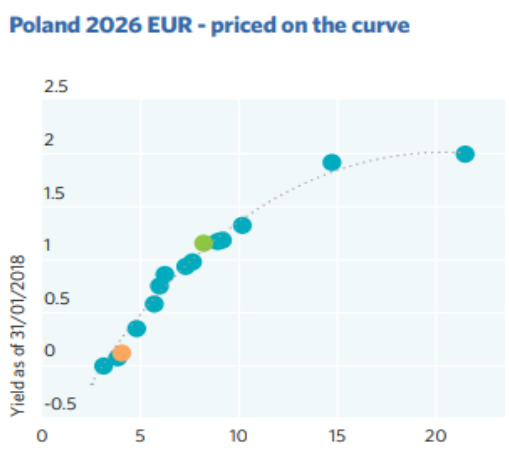
As mentioned at the beginning, on December 12, 2016, Poland issued its inaugural green bond, following the ICMA green bond principles (GBP) that had just been published in June of that same year. This transaction is considered the first green issue by a sovereign and followed a conventional format, involving the evaluation from the company Sustainalytics of its green financing framework, as well as certifying its commitment to (i) the use of funds, (ii) the selection system for eligible projects, (iii) the financial management of the funds raised, and (iv) the reporting or impact report after the issue. Poland thus committed on the financial side to paying a coupon of 0.5% over 5 years on a nominal amount of EUR 750 million, while its environmental commitment was intended to finance renewable energy projects, sustainable agriculture operations, reforestation, national parks, clean transport and forest recovery, explicitly leaving out any use related to unsustainable sectors, such as the burning of fossil fuels and operations related to palm oil. In this first transaction, the issuer had to pay

[8] See "RCP4.5: a pathway for stabilization of radioactive forcing by 2100". Climate Change (2011). Another even more favorable scenario with which the IPCC is currently working would correspond to a RCP 1.9, which would entail a significant decrease in emissions compatible with an increase in temperatures of less than 1.5 degrees Celsius by the end of the century, as has been agreed in Paris (2015).
[9] The so-called RCP8.5 would mark the high range of carbon emissions if no mitigation measures are taken.
[10] Thus, a rise in the price of green bonds could end up leading investors to buy more of them, since although in relative terms they became more expensive (substitution effect), the imminence of the climate impact would lead investors to maintain or increase their effort to invest in sustainable instruments, disregarding other types of assets (negative income effect). This situation, in which a rise in price is associated with a higher demand for the product due to the basic need to dispose of said good, is known in economic theory as a Giffen good or less.
[11] Along these same lines Germany, the UK, China and even the IMF have been mentioned.

a new issue premium of 8 b.p. (i.e. negative greenium)[12], although this was reduced in its second issuance of a green bond in 2018, leaving the price at the same level as its traditional credit curve (see the following chart, CBI 2018).

Meanwhile, the Netherlands was the first AAA issuer to take out a green bond in Europe. The issue was made in 2019, for an amount close to EUR 6 billion, and with a term of 20 years. In this case, the justification of the funds raised is based on the expenses committed both in the current budget, as well as in the year prior to the issuance and subsequent years. However, it included a commitment for at least having

Chart 3: Primary Green Bond Market (Poland)



Source: Climate Bonds Initiative (2018)

50% of the justification done against the budget of the same year of the issue. As in the previous case, this bond was approved by Sustainalytics, who considered their green strategy to be credible and that ICMA's GBP principles had been followed.

Germany, twin bonds

Germany recently announced its interest in issuing its first green bond in 2020, for a potential amount of EUR 10 billion, which would make it the second country with an AAA rating to issue green debt, after the Netherlands. This would also be an important step in the development of this market on a global level since it would constitute the risk-free reference curve in Europe following the same consideration as its traditional debt.

While Germany may not have been the first player in the sovereign green bond market, it presented a good opportunity for a country with one of the most ambitious green tax packages to use strategic debt to finance the more than EUR 50,000 million committed to investment in key sectors that could make a significant contribution to boosting the economy while supporting the planet's sustainability.

Germany's innovative proposal involves issuing two twin bonds, one green and one traditional, at the same time. Both would carry the same financial conditions and they would only differ in terms of the green commitment of one of the bonds (they would bear different ISIN identification codes). To ensure the liquidity of both bonds, the sovereign would commit to exchange them at any time, eliminating any liquidity premium from these green assets. This would therefore offer a solution that would provide depth to the green bond market, seeking to reduce the isolation of this type of debt with respect to the traditional credit curve and laying the first foundations towards the creation of a green reference curve.

Denmark, green certificates

The low liquidity due to this isolation of green emissions may be a particular problem for smaller sovereigns, such as Denmark. Being a small issuer, setting up a new benchmark separate from the traditional credit curve would be so illiquid that it would presumably fail to attract a discount or *greenium* in the primary market. In addition, there would be a certain expulsion or *crowding-out* effect with respect to its own traditional debt, that is, assuming a fixed budget, the government should issue less non-green debt and, therefore, probably damage the liquidity of its credit curve, potentially having to pay an additional premium for illiquidity on all their debt due to the fragmentation of its issuance program, with an impact on the total cost of financing.

Based on this need, Denmark would be evaluating a model that would divide the two commitments that make up a green bond [13]. Although this is still a theoretical development, it is interesting to analyze the advantages of the structure for issuers, as well as the potential it would offer to investors in terms of greater flexibility. In this proposal, the financial commitment would be issued as a traditional bond, while the green promise would be issued as a green certificate. Hence, an investor in possession of both instruments, the traditional bond and the green certificate, would be in a position equivalent to an investment in a sovereign green bond. The green certificate would thus be interpreted as a commitment by Denmark to invest in green assets being at least equal to the amount raised from the sale of the traditional bond and the green certificate.

Denmark would sell this structured green bond in an auction, so that the buyer of a "green package" can have a traditional Danish bond exchangeable for any other sovereign bond of the same maturity, plus the certificate that ensures reinvestment by the issuer of said amount in green assets. The bond will hence be as liquid as any other issue reference, while

[12] See reference, Societe Generale, 2019.
[13] Similar to traditional debt stripping operations, in which the coupons of a bond are separated from the principal, which will be listed separately with individual ISIN codes, in the style of small zero coupon bonds.

the certificate will have a price for which the buyer who has bid in the auction is assumed to be willing to pay a positive amount. So the issuer could quantify the *greenium* directly in the primary market and investors could keep the certificate or sell it in the secondary market, since they will have their own ISIN identification code.

Suppose that in an auction the sovereign sells its bond at a price of EUR 100 plus a green certificate that is valued for example at EUR 1. The issuer hence obtains EUR 101 in the primary market, a price that may fluctuate based on interest rates and the issuer's credit risk: But on what basis would the certificates vary in price? The market would be responsible for pricing the government's level of commitment to its reinvestment in sustainable projects. In a way, the certificate would be a "zero coupon bond with zero amortization at maturity." As strange as it sounds, there would be some financial logic behind that would support the existence of monetary value in a product that has no cash flows. When Denmark gave the investor a green certificate, that is all she would get, the certificate. Who then might be interested in paying a positive amount for this? Maybe major activists who want to show their followers that they are committed to climate change, even going so far as to influence the expectation of a country being committed to sustainability. Furthermore, the certificates would be an interesting piece of financial engineering offering the possibility for credit structuring in order to create synthetic green bonds; for example, pairing an American sovereign bond with a Danish green certificate, allowing large investors to offset the global carbon footprint of their portfolios, fulfilling their commitments to align with the Paris goals (2015) or, for example, the Principles of Responsible Investment (UNPRI), while adapting their financial profile to the needs of their portfolios. Ultimately, a manager could, for example, benefit from buying bonds from Saudi Arabia while adding green certificates to its portfolio, thus being able to justify its net contribution to the decarbonization of the economy to rating agencies and investors, this being a way to facilitate the ecological transition supporting the financing of companies and sovereigns that are currently outside the scope of the green activities taxonomy during this transition[14].

A certificate market that quotes the sustainability of issuers could even be created. If investors believe that the demand for green bonds will increase, they can choose to invest in these instruments, but due to their low liquidity, another cheaper way to position themselves in this scenario would be to buy green certificates, minimizing exposure to the issuer's credit risk on the part of the traditional bond, so it would no longer be necessary to finance the purchase of a bond to take a bullish position in terms of sustainability. We would thus achieve an efficient way of assessing the sustainability of the countries in the market that would complement the assessment of their public policies that are committed in the framework of the Paris Agreement (2015) to the so-called *National Determined Contributions* (NDCs), and climate metrics based on the production of goods and services in the country, such as, for example, adaptation indexes as calculated by the Notre-Dame Global Adaptation Initiative.

Conclusion

We are shifting from a market based on the fiduciary duty of managers to their clients towards one in which the people are committed to climate change and thus incorporate it in all their investment preferences. Green bonds have therefore changed investor behavior, leading some of the biggest managers to publicize their purchases of this type of asset and communicate their responsible investment strategies[15].

In the ecological transition, sovereign issuers play a fundamental role in mobilizing resources to finance the SDGs. This is of even greater importance in the current scenario of implementing recovery measures in the wake of the crisis caused by the COVID-19 pandemic. The emphasis on planning for green reconstruction means green bonds appear to be a central instrument for satisfying these plans.

After a few years of experience of issuing green bonds, we begin to see other proposals for financial innovation that suggest the possibility of resorting to more efficient structures for the issuance of sustainable public debt. There is still a long way to go, but in the future, responsible investment managers would benefit from knowing the true level of compliance with national climate commitments and separating it from each country's level of credit risk, an area in which the current *greenium* is unable to offer a credible conclusion due to the distortion caused by liquidity differences between green and traditional public debt. The new financial structures analyzed here would allow this effect to be isolated, directly in the price of the green certificates in the Danish model, or indirectly, from the price differential between the "twin" green bonds of the German proposal.

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[14] The first transition bond aligned with the recently published Taxonomy of green activities of the European Commission has just been issued by the gas company Cadent. For further information, see BNP (2020).
[15] See, for example, BlackRock.

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