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ESG Debt Issued by Regional Governments in Spain: Financing Sustainable Development or Usual Public Expenditure?

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ABSTRACT

Sustainable debt bond is an emerging instrument aiming at providing companies and governments with extra resources for financing social and environmental policies and attempting to make progress on the Sustainable Development Goals. Regional governments in Spain have issued sustainable bonds in recent years to finance different spending programmes. However, these relatively new debt instruments present controversial issues: debt cost, funded projects, financial green & socialwashing, discouraging the use of other key fiscal instruments for sustainable development. This paper develops a thorough analysis of how these sovereign sustainable bonds are used by the public sector. This study examines five regional governments in Spain that have issued bonds with ESG criteria (green, social and sustainable [GSS] bond), seeking to use their resources more responsibly and to promote a more sustainable and inclusive economy. The aim is to show what motivates different governments to issue this type of debt. That is, a genuine awareness of sustainable development where ESG bonds offer significant advantages over conventional debt, or whether, on the contrary, the strategy responds to financial criteria. The results reveal significant limitations of this new type of debt as a key instrument for financing and accelerating sustainable development. In fact, ESG debt can encourage financial green & socialwashing and discourage the use of key fiscal instruments for sustainable development.

1 | Introduction

Since the benchmark creation of the Green Climate Fund during the fifteenth United Nations Framework Convention on Climate Change (UNFCCC) at the 2009 Conference of the Parties (COP) in Copenhagen, green finance has undergone considerable evolution and is now an important financial instrument. The first green bond emerged in 2008 as a joint initiative of the World Bank and the Swedish financial group Skandinaviska Enskila Banken. The concept of green bonds has evolved steadily and is currently included in GSS (green, social and sustainability) bonds and SLBs (sustainability-linked bonds). All together they are referred to as 'sustainable bonds' which are issued by agencies, multilateral institutions and private companies and, more specifically, 'sovereign sustainable bonds' which are issued by governments (OECD 2023a). The main mission of all this kind of bonds is to finance services and economic activities linked to the Sustainable Development Goals (SDGs). In Spain, some regional governments – known as autonomous communities (ACs) – have begun in 2015 using these borrowing instruments, specifically GSS bonds, to cover part of the spending needs for essential public services and green projects.

Such initiatives give the public sector a double dividend. On the one hand, they represent an opportunity to accelerate the transition towards a more environmentally and socially sustainable

society. Considering insufficient resources and increased spending needs stemming from the successive crises of recent years, these new debt instruments could provide extra resources at lower risk for public finances. On the other hand, these bonds generate greater confidence on the part of investors, as the destination of the resources is made explicit and information asymmetry is reduced. In consequence, environmental, social and governance (ESG) bonds could reduce the debt cost because of the so-called 'greenium', that is lower bond yields for lenders in exchange for a stronger fiscal position for them.

However, the sustainable bonds issuance is not without controversy. It is important to discern if the projects they finance really contribute to ecological transition and the SDG targets and economic growth (Iwanicz-Drozdowska et al. 2025), or if they merely encourage financial green & socialwashing (Agliardi and Agliardi 2019; Bhutta et al. 2022; Causevic et al. 2022; Han et al. 2024; Lupo-Pasini 2022) or other different reasons. The objective is to check whether the (sub-)sovereign sustainable debt is motivated by a genuine concern to promote new projects that contribute significantly to sustainable development objectives through transformative sustainable finance strategy (Jager and Dziwok 2024) or if, on the contrary, the strategy is to resort to this debt instrument because of the influence of the current regulatory framework and because it represents greater financial attractiveness and resource savings. In other words, the question is to what extent the financial sustainability tactics (trying to reduce the cost of debt) or the social or environmental sustainability strategies explain the adoption of ESG debt.

More specifically, the aim is to analyse to what extent the regional governments in Spain are resorting to these new debt instruments with the aim of addressing their financial challenges, relegating the transition strategy towards environmental and social sustainability to a secondary position. Identifying the real purposes for the use of new sustainable financial instruments by governments is an essential pre-condition for establishing more effective regulation that really contributes to the transition towards a sustainable economy. Our main hypothesis is that regional governments' access to the sustainable debt market is not driven by social and environmental sustainability, but rather on the strategies and regulations promoted by the European Commission for financing the ecological transition, as well as on the demands and requirements imposed by the financial sector in the debt market, which takes over the function of financing sustainable development projects that were previously undertaken mainly by specialised public institutions (Gabor 2021). The initial overview is that the sustainable debt market does not present significant innovations compared to the conventional debt market; if this were the case, it could happen that the ESG bond market ends up being a hodgepodge for covering overhead costs and programmes without clear sustainable development objectives.

To frame this problem, it is necessary to consider that debt instruments act as incentive and disincentive mechanisms that clearly affect the revenue and expenditure decisions of public administrations. Access to cheap, low-risk and unconditional financing could lead to changes in the design and implementation of public policy, particularly tax policy, which may run counter to the SDGs that ESG sovereign debt mean to promote. There is no doubt that environmental taxation, wealth levies and tax benefit structuring (López Pérez et al. 2023; Vence and López Pérez 2021) are also decisive tools for financing the transition towards a new sustainable economic model, yet it is crucial to ask to what extent highly affordable financing might motivate the reduction or elimination of fiscal instruments that could contribute to sustainable development goals. Consequently, it is also desirable to ask if access to new sovereign sustainable debt instruments should also be linked to compliance with other key policies (e.g., tax instruments) for the transition to a more sustainable society.

To explore these issues, this paper focuses on the analysis of the main financial characteristics of the sub-sovereign sustainable bonds issued by regional governments in Spain. The analysis and results of this research make an important contribution to the literature, given the lack of studies on the actual experience in the use of these instruments, not only by the regional governments in Spain but also by other governments in general. Providing empirical results on this issue is crucial in view of the key role played by the public sector in the transition towards a more sustainable economic model. Therefore, the results achieved could provide new insights for better regulation and better design of public policies financed by these debt instruments.

Following this introduction in Section 1, Section 2 offers a review of the potential implications of sovereign sustainable bonds for financing strategies in the transition towards a more sustainable economic model. Section 3 analyses how the resources obtained through GSS bonds are used in Spanish ACs. The main results are presented and discussed in Section 4. Section 5 contains the main conclusions, and the limitations are indicated in Section 6.

2 | New Financial Instruments for Sustainable Development: ESG Criteria Bonds

The transition towards a sustainable economy requires a shift in the behaviour of the agents involved: producers, consumers, investors and public entities. Whilst various traditional policy instruments can promote this shift (regulation, taxation, fiscality, R&D), the academic literature is gaining momentum around the need to broaden the focus and incorporate macroeconomic financial and monetary policies to promote a transition towards a more sustainable economy (Aglietta and Espagne 2015). The financial crisis of 2008 also opened a window for international institutions such as the OECD, the IMF and others to develop proposals in these areas which progressed quite smoothly until 2015 (Krogstrup and Oman 2019; OECD World Bank and UN Environment 2018). This means that autonomous initiatives in the financial sector have been very limited in the early years and that policies have not been very active in that direction. However, the process has accelerated in recent years and a new generation of financial instruments driven by financial and monetary policies has emerged.

Expansion of these financial instruments is backed by a specific monetary policy implemented by the Central Banks. The criteria for monetary creation, especially through Central Bank loans to the financial sector, can incorporate a bias or conditionality that orients these resources towards sustainability. This could

be implemented in two ways: through selective orientation of their credit policies to the private financial sector, and through priority backing for issuing public (or private) debt aimed at investing in sustainable assets, activities or initiatives. However, in the case of the ECB, its monetary policy strategy remains very limited. From 2022 onwards, the ECB began to bias its corporate purchases towards issuers with better weather performance, excluding those issued by the public sector. This shift covered both the Asset Purchase Program (APP) and the Pandemic Emergency Program (PEPP) but has been discontinued as of July 2023 (Navarro and Arnal 2024).

Attention to ESG criteria is one of the fastest growing phenomena in the financial industry. The financial sector has strongly promoted the ESG market since 2014. For example, the outstanding amount of globally issued ESG bonds has grown from nearly $50 billion to $1 trillion in less than 10 years, and the number of ESG ETFs worldwide has also increased almost tenfold in 6 years (European Central Bank 2025).

Two different types could be highlighted amongst the new debt instruments that have been developed according to these criteria: the GSS bonds, targeting to finance or refinance projects with an environmental and social impact, at least in theory, and they are linked to a monitoring and impact report (MIR); another type is known as SLBs, usable to finance or refinance a combination of ecological and social projects tied to the achievement of some sustainability targets but are not tied to a resource-use tracking approach. This flexibility allows SLBs to be used for general financing needs. However, the financial characteristics of these bonds may vary depending on whether predefined ESG objectives are achieved (OECD 2023b).

This range of sustainable bonds has gained significant relevance in recent years, both for corporate sustainable bond markets and for sovereign bond markets. The quantitative volume of both global markets is quite disparate, but the trend is very similar. Sustainable bonds issued by companies was USD 74 billion in 2016 and peaked in 2021 at USD 622 billion; the total issuance seems to be reduced in 2022 (USD 516 billion). In any event the level remains high and the ratio to the total corporate bond issuances reaches 15% in 2022. These trends are also common for sovereign sustainable bond issuance. Public issuance rapidly increased since 2016, reaching a record level in 2021 (USD 128 billion) and suffering a decline in 2022 (USD 106 billion). Despite this increase, the share of these issues in total public debt remains low at 1.9% in 2022, much lower than the share of the corporate bond market (IMF Climate Change Dashboard 2023; OECD 2023a; Global Sustainable Investment Alliance 2021).

Such recent endeavours have afforded the public sector, enterprises and diverse stakeholders the opportunity to tap into new resources and assist the genesis of sustainable operations. These innovative financing approaches have yielded increased returns associated with diminished risk whilst advancing a shift towards a more sustainable socio-economic paradigm (Berges and Ontiveros 2021; Hildebrand et al. 2018). In any case, there are unresolved questions about who gets access to these mechanisms, who the winners and losers are, regional inequalities, differences to regular bonds, whether these tools really respond to sustainable development objectives, to what extent they promote financial greenwashing and socialwashing or whether they further entrench the financialisation of the global economy (Aglietta and Espagne 2015; Gerald 2005; Lapavitsas 2011).

Some studies indicate that sustainable bonds do not actually provide more inexpensive funding. Belloni et al. (2020) found no evidence they were either more expensive or cheaper and advised that they should be compared to 'vanilla bonds' rather than conventional bonds. Such a comparison would indicate that financing is more cost-effective for green bonds (Baker et al. 2018; Flammer 2018, 2020; Karpf and Mandel 2018). Those authors also reported no evidence of reduced emissions because of financing green projects through green bonds. This suggests a risk that green bonds may be used for financial greenwashing. Accurate analysis would involve more rigorous control and examination of specific projects.

The OECD (2017) provides a systematic approach on the results offered to investors and issuers regarding sustainable bonds. Specifically, the advantages for investors materialise in the form of increased transparency and decreased risk. The latter aspect would prove pivotal in bank strategies. Since the 2008 financial crisis, these institutions have endeavoured to reduce balance-sheet and exposure to risk (Campiglio 2016), so this type of bond could play a key role in that process. The disadvantages are related to market size and lack of legal standardisation. For issuers, the advantages seem less clear and are limited to improved reputation and economies of scale, whilst the disadvantages are associated with higher issuance costs and possible penalties. A controversial issue is how the sovereign issuers could accept a strong contractual commitment with the financial investors and the difficulty to establish (and accept) penalties in case of non-compliance with sustainability commitments (Lupo-Pasini 2022).

A first approximation to the empirical reality reveals that the projects covered by sustainable bonds are highly concentrated within a handful of capital-intensive sectors. For instance, green bond resources have mainly gone to financing the energy transition. The energy sector has absorbed 36% of all green bonds issued since 2014 ($454.3 billion), followed by the construction sector (30%, $356 billion) and the transport sector (19%, $234 billion) (Climate Bonds Initiative 2023). Together, these three sectors account for 85% of the total resources from green bonds.

The excessive concentration of green bonds to finance the energy transition is coherent with EU strategies that consider it a priority objective. This bias towards climate policy indicates that the current definition of an environmentally sustainable economy revolves primarily around developing renewable energy and energy efficiency, opening up new fields for global finance and contributing to green growth strategies. However, a narrow focus on energy issues, though they are essential, may mean that only partial amendments are introduced to the current linear model of production and consumption. This would greatly limit the transition towards an economy that is compatible with ecosystem sustainability (Vence 2023).

The public sector has an important role to play in the transition to a sustainable socio-economic model. Public financing drives

the model and the public sector itself addresses market or systemic barriers and failures in the shift towards new economic and social paradigms (Fernández et al. 2022; Lazonick and Mazzucato 2013; Mazzucato 2013, 2018).

The shift towards a circular and sustainable economy requires that funding from sustainable bonds be employed to embrace more disruptive activities and business models. This would stimulate new sectors, open new markets and develop new infrastructures aimed at reducing the consumption of non-renewable resources, extending the useful life of products, re-using and repairing goods or recycling materials (Vence 2023). The goal should be to direct these funds towards the design and implementation of 'mission-oriented policies' (Mazzucato 2018; Mariana and Semieniuk 2017) promoting a transformative-progressive Green Finance strategy (Jager and Dziwok 2024) and avoiding financial green & socialwashing. To drive the development of a more resilient and sustainable society, a financial ecosystem must be created that encompasses diverse public and private mechanisms working in tandem, focusing on both production and consumption.

In the Spanish legal and institutional framework, the regional governments provide primary essential services and hold significant competencies for promoting environmental and economic issues. For example, regional governments manage responsibilities for essential public services (health, education and social services) and retain responsibilities in various economic areas with a high social and environmental impact. Furthermore, through regional financing law, they have the autonomy to apply green taxes and to increase or reduce key taxes for sustainable development. The regional governments are therefore at the forefront of the transition towards a sustainable paradigm. However, regional governments have faced severe financing challenges stemming from the 2008 financial crisis. Resource deficits coupled with diminished investment and institutional initiatives constitute a barrier in the transition towards a more sustainable model (Aranda-Usón et al. 2019).

The regional governments are no strangers to this new debt instrument, and some of them have consistently resorted to the sovereign (sub-sovereign) sustainable bond market over the last few years. Regional governments might be motivated to venture into sub-sovereign sustainable bonds because this market shows higher yields and liquidity and lower volatility than the closest corresponding brown bonds (Bachelet et al. 2019). The idea is that access to these debt instruments will promote greater investor confidence by generating a more sustainable economy and by reducing information asymmetry. As a result, these bonds enjoy a negative premium and green/social investment can be financed at a discount. The determination of greenium in ESG sovereign debt is a recent topic in the literature, and the results are still far from definitive (Ando et al. 2024; Baker et al. 2022; D'Amico et al. 2023; Grzegorczyk and Wolff 2022). This is a crucial point to consider, as it would reduce the financial burden on the regional governments and free up resources that can be allocated towards public services. However, these instruments require an established (institutional) issuer reputation or a green check to reduce asymmetric information and provide assurances to investors against greenwashing of bonds. In conclusion, the sustainable bond market would generate a win-win; on the one hand, lenders would reduce risk and borrowers would reduce costs and both would promote a more sustainable economy. However, this win-win has not yet been observed in empirical reality (Lupo-Pasini 2022; UNDP 2022).

Financial attractiveness of these debt instruments may certainly be a key factor in their use, but it is also important to consider the regulatory factor. The Next Generation funds and the financial strategy associated (European Commission 2021) as well as the European Green Bond Standard (European Parliament, Council of the European Union 2023) have served as a boost and incentive for the issuance of ESG bonds by member countries, as the Commission is expected to fund 30% of the NGEU programme through green bond issuance. At the same time, the Spanish government refers to these new debt instruments in its Recovery and Resilience Plan (Gobierno de España 2021), indicating the need to boost this market and creating a Green Paper on Sustainable Finance in Spain (Ministerio de Economía, Comercio y Empresa 2024).

In addition, new financial instruments should be developed with the entire ecosystem of fiscal instruments in mind, as public spending and taxation also play a role. The key is the creation of a policy mix (Krogstrup and Oman 2019; OECD 2010). Discernment is needed to identify which policies and projects ought to be funded through debt, which should be financed via taxation, and how the two should be coordinated. Access to and use of these new financial instruments should be integrated with a fiscal strategy that promotes a more socially and environmentally sustainable model. This highlights the imperative of ensuring coherence amongst the various tools when designing and employing instruments aimed at financing a more sustainable economic paradigm.

Consequently, ACs bear the risk of financing the transition to a more sustainable model through new debt instruments that may prove costlier and generate a greater financial burden than conventional ones. Additionally, funds from ESG bonds could even be allocated to mature, low-risk sectors or low-impact social policies that would slow or even stall the transition.

In summary, financial innovation through ESG criteria bonds is expected to accelerate progress in transitioning towards a more environmentally friendly socio-economic model and achieving sustainable development goals with respect to traditional debt and fiscal policy mechanisms. However, the literature is still incipient and the results inconclusive. Further empirical analysis is needed to obtain a clearer picture of the positive and negative aspects of the actual implementation of this financial instrument. Such information could improve its design and implementation in the move towards a society based on the principles of sustainable development.

3 | Evolution of ESG Financing in the Spanish ACs

The research covers ESG debt issuance by regional governments in Spain for the 2018–2024 period.

3.1 | Data and Methodology

To achieve the objective of this paper we part from the study and analysis of the so-called MIR. The process of issuing sustainable debt is preceded by the development of a strategic plan, which establishes the lines of action and objectives pursued to respond to the 2030 Agenda and the Sustainable Development Goals. At the same time, Sustainable Financial Frameworks are developed, linking public finances with financial practices geared towards sustainability, promoting investment in projects that generate a positive impact on economic, social and environmental sustainability. The Sustainable Financial Frameworks identify the destination of resources and the projects selected. The objective, therefore, is budgetary transparency and rationality in public spending.

Once the resources from the sustainable debt have been executed, the MIR is issued aiming at transparency of investor information. This monitoring report is produced by the issuer itself and sets out the financial terms and conditions of the issue; selected eligible budget programmes, description of the selected projects, environmental and social indicators and expected impact of the bonds. These reports are highly relevant. The objective is precisely to demonstrate the social and environmental impact of the financial resources used to avoid greenwashing and socialwashing. However, as will become clear, the indicators are not sufficiently defined and are not the most appropriate for measuring impact.

The systematisation of the information provided in the MIR allows us to make a homogeneous comparison between the different territories issuing GSS bonds. Therefore we check MIR published by the ACs (Gobierno de Navarra 2019–2022; Gobierno Vasco 2018–2021; Junta de Andalucía 2021–2023; Xunta de Galicia 2020–2021) aiming to analyse three key elements for the objective pursued by this work: volume and cost of ESG debt, impact assessment and selection criteria, and changes in the structure and rating of the debt of the ACs.

However, the period of GSS bond issuance is not homogeneous amongst regions. The emission period comprised 2018–2024 in the Basque Country, 2020–2024 in Galicia (in 2022, Galicia just issued sustainable loans), the years 2019, 2020, 2022 and 2023 in Navarra, and 2021–2024 in Andalusia. The Community of Madrid, which is the largest GSS bond issuer, indicates that it has issued for the entire 2016–2024 period. Yet, the information provided is much more limited. The region does not issue MIR, but one identified as a financing report. These reports simply indicate the amount of debt and the destination of the resources.

Aiming to compensate for the lack of transparency and contrasting the information we also classify and rank (by type of instrument, volume and interest rate) all the debt issues issued by all the regional governments registered at the Bank of Spain for the period 2018–2024. This allows us to make a comparison of the interest rates of the bonds, debentures, notes, loans and sustainable debt issued over the selected period. A total of 216 issues are included, including all the instruments indicated, made by Madrid, Basque Country, Navarra, Andalusia, Galicia, Asturias, Castilla y León, Balearic Islands and Canary Islands and which represent a total volume of Euros 35,157.57 million. Madrid is the region that has issued the most debt during the indicated period, representing 43% of the total.

In the case of Madrid, the sustainable debt issues issued in 2016, 2017, 2018, 2019, 2020 and 2021 do not appear registered in the Bank of Spain as sustainable debt but are identified as conventional bond issues (for this reason, our study period begins in 2018, as this is the year in which the rest of the ACs begin to issue sustainable debt). In the case of sustainable loans granted for 2017 and 2019, the interest rate is also not made public. That is, whilst the Community of Madrid indicates that a total of Euros 7308 million of sustainable debt has been issued for these years (neither the impact report nor the interest rate is published), the Bank of Spain registers this debt as conventional bond issues. Therefore, considering that the issues announced by the Community of Madrid do not involve the publication of the corresponding MIR and are not registered with the Bank of Spain as sustainable debt issues, this paper will not consider the issues made by the Community of Madrid in those years as sustainable debt.

We also argue that analysing changes in the structure of debt and the evolution of its quality through ratings is a key element to test our hypothesis. To this end, we correlate variables related to debt sustainability (% of sustainable debt over GDP, % of total debt over GDP, financial cost) with the rating given by the agencies (Moody's, S&P, Fitch). Temporal limitations in the data and sample size prevent the creation of an econometric model that provides sufficiently significant results. For this reason we carry out in R software a Spearman correlation analysis with significant level. The data used for analysis are collected in Table 1 and has been taken from Independent Authority of Fiscal Responsibility (AIReF).

3.2 | Analysis of GSS Bonds Issued by the ACs

3.2.1 | Volume and Cost

Five regional governments approved the issuance of GSS bonds in alignment with their corresponding Sustainable Financial Framework. Altogether, Galicia, Madrid, Navarre, the Basque Country, Andalusia and Castilla y León, had issued a total of Euros 16,430 million in GSS bonds by the end of 2024. The largest issuer of bonds has been the Basque Country, representing 29.5% of the total sustainable debt issued, followed by Madrid (27.7%) and Andalusia (23.6%). A first approach to the data provided by the MIR, shows that the interest rates paid on sustainable debt followed the tendency of conventional bonds for the years studied.

A second more detailed approximation is through the annual analysis of the different debt issues (sustainable and conventional debt) made by each region. Figure 1 shows the evolution of sustainable and conventional emissions made in the primary debt market each year during the period 2018–2024 and the average interest rate. Table 2 shows the information for each regional government. The figure and table summarise only the regional governments that have issued both conventional debt and sustainable debt for the selected period. As a starting point,

TABLE 1 | Variables selected for correlation analysis.

	Moody's	S&P	Fitch	% CD/GDP (debt-to-GDP ratio)	% SD/GDP (sustainable debt-to-GDP ratio)	Financial cost (interest paid on debt as a percentage of GDP)
Canary I.		A–		9.9	0	0.4
Balearic I.		A–		19.5	0	0.5
Galicia	Baa1	A–		14.5	20.43	0.4
Andalusia	Baa2	A–	BBB	19	9.9	0.3
Asturias	Baa1			12.8	0	0.5
Castilla y León	Baa1			18.8	3.52	0.5
La Rioja			BBB+	14.6	0	0.1
Madrid	Baa1	A	A–	12	32.21	0.4
Navarre		AA–		9.8	11.57	0.4
Basque Country	A3	AA–	A–	10.6	50.49	0.3
Aragón		BBB+		19.1	0	0.5
Cantabria			BBB	18.1	0	0.2
Castilla la Mancha				30.5	0	0.5
Catalonia	Ba1		BBB	29.6	0	0.5
Extremadura	Baa2	BBB		21.2	0	0.5
Murcia	Ba1		BBB–	30.8	0	0.5
Valencia	Ba1	BB	BBB–	40.6	0	0.6

Source: AIReF (2024).

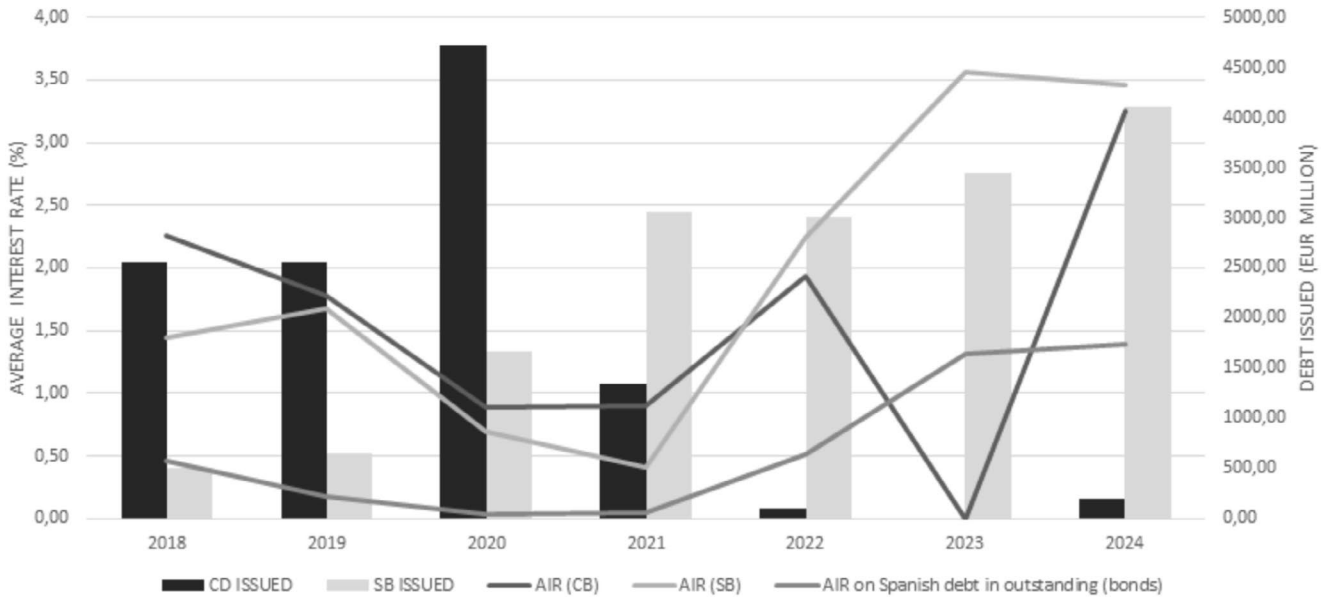

FIGURE 1 | Trends in conventional and sustainable debt of regional governments and interest rates. *Source:* Author's own elaboration based on Bank of Spain (2018–2024).

the issues are made in periods of time characterised by a very different rate market; whilst for the period 2018–2021, interest rates are exceptionally low, becoming negative, from 2022 onwards, there is a very significant increase in interest rates. Specifically, from 2022 onwards, apart from the Madrid government, regional governments will issue sustainable debt, making

TABLE 2 | Volume and interest rate of conventional debt (obligations) and sustainable debt issued (2018–2024. Million euros).

	2018		2019		2020		2021		2022		2023		2024	
	CD	SB	CD	SB	CD	SB	CD	SB	CD	SB	CD	SB	CD	SB
Galicia														
Vol.			775		150	500	200	550		380		500		500
IR			0.39		0.00	0.08	0.00	0.18		2.89		3.71		3.30
Andalusia														
Vol.	600		1091				260	1500		500		600		1400
IR	1.88		1.97				1.55	0.60		2.40		3.95		3.68
Madrid														
Vol.	1477		480		3702		880		100	1500		1600	200	1600
IR	2.70		2.49		1.03		1.15		1.93	2.27		3.48	3.25	3.46
Navarra														
Vol.	66		65	50	135	75				125		50		
IR	1.95		1.72	2.10	1.00	1.45				1.80		3.14		
Basque Country														
Vol.	414	500	150	600	728.5	1100		1000		500		700		600
IR	2.50	1.45	2.35	1.25	1.53	0.55		0.45		1.88		3.50		3.40
Volume	2557	500	2561	650	4715.5	1675	1340	3050	100	3005		3450	200	4100
Average rate (coupon)	2.26	1.45	1.78	1.68	0.89	0.69	0.90	0.41	1.93	2.25		3.55	3.25	3.46
Average interest rate on Spanish debt in outstanding (bonds)	0.461		0.183		0.042		0.055		0.519		1.320		1.387	

Note: Promissory note issues made by the Community of Madrid are not collected.
Source: Author's own elaboration based on Bank of Spain (2018–2024).

it impossible to compare the cost of these issues with conventional debt issues.

Overall, for the years 2018, 2020 and 2021, the sustainable debt issuances registered are considerably cheaper than conventional issuances except for the case of Navarra in 2019, where the sustainable debt issuance is more expensive than conventional issuance. From 2022 onwards, except for Madrid, only sustainable debt is issued, with an increase in interest rates in line with the market price.

In detail (Table 2), the following data can be highlighted. In the case of Andalusia, only in 2021 does it issue sustainable and conventional debt, with the former registering considerably lower interest rates. Sustainable issuance from 2021 onwards averages 3.73%. In the case of Galicia, it issues conventional and sustainable debt in 2020 and 2021. The conventional debt issued for these years was 550 million euros at a rate of 0%, with sustainable debt issues in these years above these rates (0.08 and 0.17 respectively). The case of Navarre is more particular; for the years 2019 and 2020, sustainable debt issues are more expensive than conventional ones.

In the case of the Basque Country, the results are more strongly in favour of sustainable debt. Clearly, the issuance of sustainable debt represents a financial saving compared to conventional debt. Whilst the Basque Country issued during the period 2018–2020 a total of 1399 million conventional debt at an average rate of 1.76%, the average rate of sustainable issues made for the period 2018–2024 stood at 1.63%. However, it should again be noted that, from 2020 onwards, the Basque Country only issues sustainable debt and the average interest rate for the years 2020–2024 reaches 2.30%, which is already higher than the cost of conventional debt.

The case of the Community of Madrid is the most contentious. First, the recurrence with which the regional government of Madrid resorts to the debt market is striking; Madrid accounts for 50% of the total debt issued by the whole regions for the selected period. Regarding the interest rates paid, the Madrid region allows a more homogeneous comparison to be made, since it issues all types of debt over the selected years (bonds, promissory notes, sustainable debt). In this sense, the data indicate that sustainable debt has practically the same cost as bonds issued (2.38% and 2.37% respectively) and is considerably higher than the cost of promissory notes and bonds.

Finally, the average interest rate on outstanding domestic bonds for that period is also shown. The data indicate that the cost of sustainable and conventional debt issued by the autonomous regions is much higher than that of bonds issued by the State, both in years when interest rates are very low and in years when they rise significantly. In conclusion, the results obtained do not allow a clear answer to be established as to whether sustainable debt represents a financial saving compared to conventional debt instruments. In the case of Navarre, Galicia and Andalusia, it would be necessary to analyse new issues of conventional debt to compare them with the sustainable issues made, but in general, it cannot be concluded that sustainable debt has been more attractive from a financial point of view. In the case of the Community of Madrid, no significant savings can be observed through sustainable issuance, and only the Basque Country shows a certain advantage in favour of sustainable issuance.

However, as mentioned in Section 2, the issuance of GSS bonds entails additional costs for reporting and auditing to ensure that they truly finance relevant projects and to avoid financial green & socialwashing. However, these costs are not reflected in the corresponding reports. Therefore, the total cost of issuance could be higher than indicated by interest rates, making sustainable debt less financially attractive.

Finally, it is important to highlight whether regional governments' commitment to this new financial instrument has been part of a broader fiscal strategy that seeks to promote a more socially and environmentally sustainable model, or whether, on the contrary, the use of ESG debt has served as an excuse to eliminate other fiscal instruments that also play a key role in promoting sustainable development.

3.2.2 | Impact Assessment and Selection Criteria

The MIR analysis reveals a lack of indicator related to the sustainability of the funded projects, which are mainly related to the actors involved, as well as a possible bias in the criteria applied to select (or classify) such projects, which helps to promote financial green & socialwashing.

The indicators used by ACs were based on population size and the number of projects involved. They are clearly insufficient for analysing the appropriateness of the project and its impact towards a sustainable economy. The indicators used were sometimes confusing and lacked specificity in measuring certain impacts. This can lead to an appraisal of green expenditure investments as a form of financial green & socialwashing. Public administrations generally took a conservative stance when selecting projects, as did the financial sector when assessing the ESG criteria of those projects. Everything seems to indicate that a negative selection strategy (Folqué et al. 2021) remains prevalent in GSS bonds issued by ACs (Table 3). In some cases, they may even encourage behaviour and public policies that run contrary to the SDGs.

Greater transparency regarding public spending from sustainable sources is advisable in relation to the social and environmental objectives promoted and achieved by the various projects, so that citizens and investors are better informed. These reports must be improved by introducing metrics related to climate change and SDG targets (Tolliver et al. 2019) along with changes in the accreditation model, as pointed out by Flammer (2020).

3.2.3 | Changes in Regional Debt Structure

The relevance of GSS bonds relative to total debt varies considerably amongst regions. Whilst their importance is quite modest in Madrid, Navarre, Andalusia and Castilla y León, it has reached considerable proportions in Basque Country and Galicia. The issuance of GSS bonds has allowed these three ACs

TABLE 3 | Classification of impact indicators.

	Green indicators	Social indicators	Undefined indicators
Health		Job created, population covered	Number of internet consultations; hospital centres built; doses administered
Education			Number of students with scholarship
Basic and affordable infrastructures			Municipalities benefited; trips on metropolitan transportation; rural ways improved
Care of dependent people			Participants in services for dependent people
Affordable housing			Number of houses built
Employment generated		Number of employment benefited	
Socioeconomic progress			Number benefited RISGA; users of social services registered in SIUSS; capacity of care of boys or of subsidised educational infrastructures; homes that benefit of the 'Card of Welcome'
Renewable energy	CO_2 emissions avoided; power and renewable energy production		Additional capacity to produce renewable energy; financial support conceded to promote the sector of renewable energies
Clean transport			Taxis adapted, electrical and low broadcasts
Prevention and control of pollution		Job created	Number of projects of environmental character, awareness campaigns; companies subsidised; new number stations accredited; number of projects subsidised
Sustainable water management	Surface conserved	Number of people with access to drinkable water; drinkable water supplied, employments created	Volume of residual waters treated; number of conservation actions performed
Land conservation and aquatic biodiversity	Forest area surface under improvement; surface of action	Job created and preserved	Number of projects of investment in aquaculture; helps awarded in the sector of fishing; number of actions in infrastructure; number of local entities beneficiaries of these global actions; intervention for the study, divulging and promotion; activities related with the improvement of the knowledge and the conservation of habitats and wild species; number of environmental projects; number of visits to the web; meteorological studies and quality of the air; helps for the conservation of the nature; projects of support to the management of resources
Energy efficiency			Number of helps awarded for the reform of houses; number of helps awarded for actions of energetic efficiency

Source: Author's own elaboration based on MIRs.

to substantially restructure their debt to the point that 50.49% of the Basque Country's total debt, 20.43% of Galicia's total debt and 12.6% of Madrid's total debt are considered sustainable. These percentages are much higher than the average of developed and emerging & developing countries (OECD 2023a). However, it is important to highlight, as was done in the previous section, that

in the case of Madrid, Euros 7308 million is excluded, which the Community identifies as sustainable debt but which the Bank of Spain identifies as conventional debt. Obviously, the inclusion of this amount would significantly modify the results indicated for Figure 2.

The changes in debt structure brought about by the issuance of sustainable debt result in changes in debt sustainability. Figure 3 attempts to show the correlation between the ratings of the three agencies and the selected debt sustainability variables.

Three main conclusions can be highlighted:

- CD_GDP has the greatest explanatory power amongst the three agencies. All three agencies present very high and highly significant negative coefficients, which implies very strong statistical evidence. Increases in CD_GDP levels are associated with worse credit ratings.
- SD_GDP tends to improve credit ratings, but not all agencies value it equally. For Moody's and Fitch, the relationship is statistically significant; however, this is not the case for S&P.
- Increases in Fin_Cost tend to worsen credit ratings. However, again, not all agencies give it the same weight.

4 | Results and Discussion

Research on sustainable bonds has attracted a great deal of attention in recent years. To date, insufficient emphasis has been placed on the role that governments attribute to sovereign (or sub-sovereign) sustainable bonds, which is a notable gap given their importance in the transition to a new social and ecological paradigm.

The results of this work suggest that the continued increase in sustainable debt issuance by regional governments has been driven mainly by three elements.

1. 'Reputation of debt'. The issuance of sustainable debt can promote a better valuation of debt, which would imply

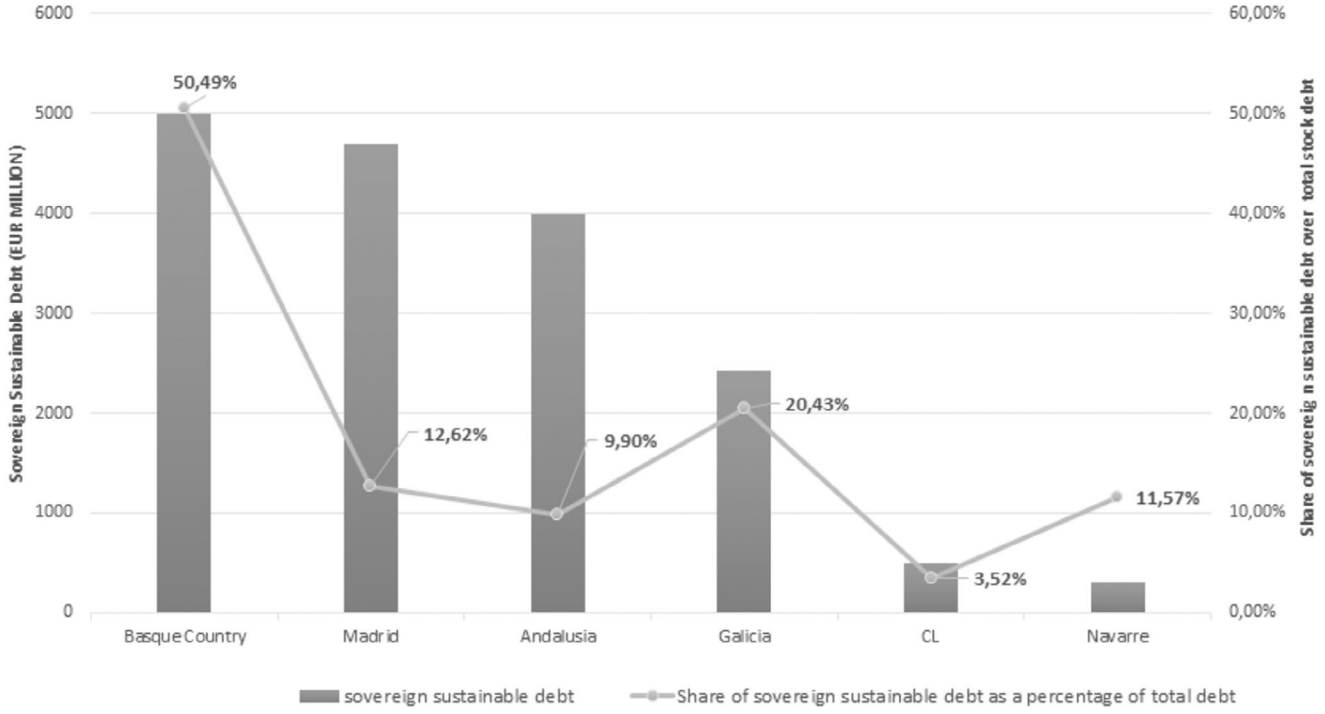

FIGURE 2 | Sustainable debt and percentage share of sustainable debt over total debt. Million euros. *Source:* Author's own elaboration based on Bank of Spain (2025).

Agency / Indicator	CD_GDP	SD_GDP	Fin_Cost
Moody's	−0.93***	0.67**	−0.61*
S&P	−0.91***	0.59	−0.77**
Fitch	−0.86***	0.75**	−0.43

Note: * indicates statistical significance at the 10% level ($p < 0.10$), ** at the 5% level ($p < 0.05$), and *** at the 1% level ($p < 0.01$).

FIGURE 3 | Correlation analysis. *Source:* Author's own elaboration based on AIReF (2024).

better access to debt markets and lower debt costs in the medium and long term.

2. Regulatory framework. The establishment of a strategic and regulatory framework by the European Commission (and the national governments) promoting sustainable finance instruments, followed by the demands of the financial sector in debt markets and as a requirement for co-financing Next Generation Funds from 2021 onwards. The completion of the Next Generation funds also means the elimination of the regulatory incentive for the use of sustainable debt and, consequently, a reduction in the issuance of this type of debt.
3. Financial sector strategy. The sharp increase in assets managed by ESG funds worldwide and the rise in the number of ESG ETFs around the world demonstrate the financial sector's interest in these debt instruments (at least until 2024).

Taken together, these three elements suggest that regional governments' genuine financial, environmental and social sustainability objectives do not play a major role in ESG issuance. Even considering the metrics used to analyse the impact of bonds, as well as the widespread use of this instrument to finance any objective related to 'social' and/or 'green' issues, it could be said that these debt instruments are collaborating to promote green & socialwashing.

Furthermore, an initial assessment of the use of these ESG debt instruments within the overall financial policy framework of the regions reveals a significant phenomenon: in some cases, ESG debt issuance is accompanied by reductions in progressive and green taxes, which clearly contradict ESG objectives. According to official estimates from the Autonomous Community of Madrid itself, between 2019 and 2025 more than 30 regional tax cuts have been approved (including multiple measures on personal income tax, inheritance and gift taxes, expanded deductions, suspension of the wealth tax, etc.), representing a fiscal cost of €500–700 million per year due to the recent measures, in addition to the billions accumulated over previous decades (Comunidad de Madrid 2025).

The evidence provided by institutional reports and the academic literature on the Community of Madrid and other regions suggests that the use of various debt instruments may be associated with fiscal reduction policies that reduce structural financing capacity, increasing pressure on compliance with fiscal rules and, potentially, the need for borrowing or expenditure adjustments (AIReF 2025a, 2025b; Arespa and González-Alegre 2023; Marín 2024; Mas-Montserrat et al. 2025). Although this work has provided an initial approximation, we consider that this is a key element to be analysed and that it should be examined in a new line of research.

The findings enable various recommendations to policymakers. The goal should be to improve this new instrument debt to promote new projects that contribute significantly to sustainable development objectives

1. The current taxonomy is clearly insufficient and therefore it is necessary to improve the taxonomy in two ways: by defining eligible projects in greater detail and by defining and improving more rigorous impact analysis metrics to avoid financial green & socialwashing.
2. It is also important that sub-sovereign sustainable bonds must be conditional upon the implementation of other public policies aimed at achieving these objectives. The results show that some territories that have issued sustainable debt have higher rates of economic inequality or have reduced redistributive policies and maintain a tax policy contrary to the principles of sustainable taxation. This contradictory mix should be properly assessed in the MIR reports and condition the cost of the issue.

5 | Conclusions

The main objective of this study has been to identify the reasons that have motivated regional governments in Spain to use sustainable debt. The analysis suggests that the strategy followed by the regional governments in relation to the issuance of sub-sovereign sustainable bonds does not maintain a clear financial or environmental sustainability objective. The results do not show significant financial savings, and only a moderate positive correlation is observed between ACs with more sustainable debt and better debt ratings. This may call into question the specific objectives pursued by ESG bonds and generate public spending for what amounts to financial green & socialwashing. Overall, the analysis of actual implementation, under the current policy framework, suggests that sustainable sovereign debt does not appear to offer significant advantages over other financing instruments in achieving the defined objectives.

6 | Limitations

Finally, it should be noted that this study also has several limitations associated with the novelty of the topic and the available data. Although several ACs have issued sustainable debt, there are still few records available, as its use has only begun to grow since the COVID-19 pandemic, which means that a longer issuance period is needed. Furthermore, since 2022, regional governments have only issued sustainable debt, making it impossible to compare the cost of this type of issuance with that of conventional debt. The limitation of information on the debt market of the regional governments in Spain also prevents a more robust statistical analysis from being carried out, for instance, to greenium estimations.

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Conflicts of Interest

The authors declare no conflicts of interest.

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