# Sovereign Sustainability-Linked Bonds: Chile Sets A High Bar

**April 2022**

Supplement To The Ninth Edition Of The Global Green Finance Index

Sustainable Futures

# Sovereign Sustainability-Linked Bonds – Chile Sets A High Bar

*Supplement to the ninth edition of the Global Green Finance Index*

Authors: **Djellil Bouzidi**, Economist and Founder Emena Advisory
**Simon Mills**, Senior Associate, Z/Yen Group

In March 2018, as part of its Long Finance initiative, Z/Yen published the first edition of the Global Green Finance Index (GGFI) with the generous support of the MAVA Foundation.

Starting with the second edition, the GGFI included a supplement focussing on a particular aspect of green finance. This supplement to the nineth edition of the Index takes as it subject green-bonds, a product which has been credited with turbo-charging the green finance revolution. The particular focus of this report is the advent of a new type of green bond — sovereign sustainability-linked bonds, which have been pioneered by Chile.

Sovereign sustainability-linked bonds have been an issue of particular interest to Z/Yen ever since our founder Professor Michael Mainelli, predicted their emergence, back in 2005. We are delighted with the success that Chile has met with this new financial product and believe that it will have a significant impact on sovereign debt markets as other nations join Chile to deliver sustainable growth.

Contact : +44 20 7562 9562
hub@zyen.com

Cover Photo by J Balla on Unsplash

## Background

In March 2022, the Republic of Chile priced the first-ever Sovereign Sustainability-Linked Bond (SSLB). This $2 billion 20-year SLB was more than 4 times oversubscribed - a remarkable achievement given the sovereign bond market's volatility and uncertainty. In this short paper Djellil Bouzidi who advised the Chilean Debt Management Office (DMO) of the Ministry of Finance on the establishment of this bond, and Simon Mills, lead consultant at Z/Yen, explore Chile's decision to issue this pioneering product and the potential implications for both the green bond and sovereign bond markets.

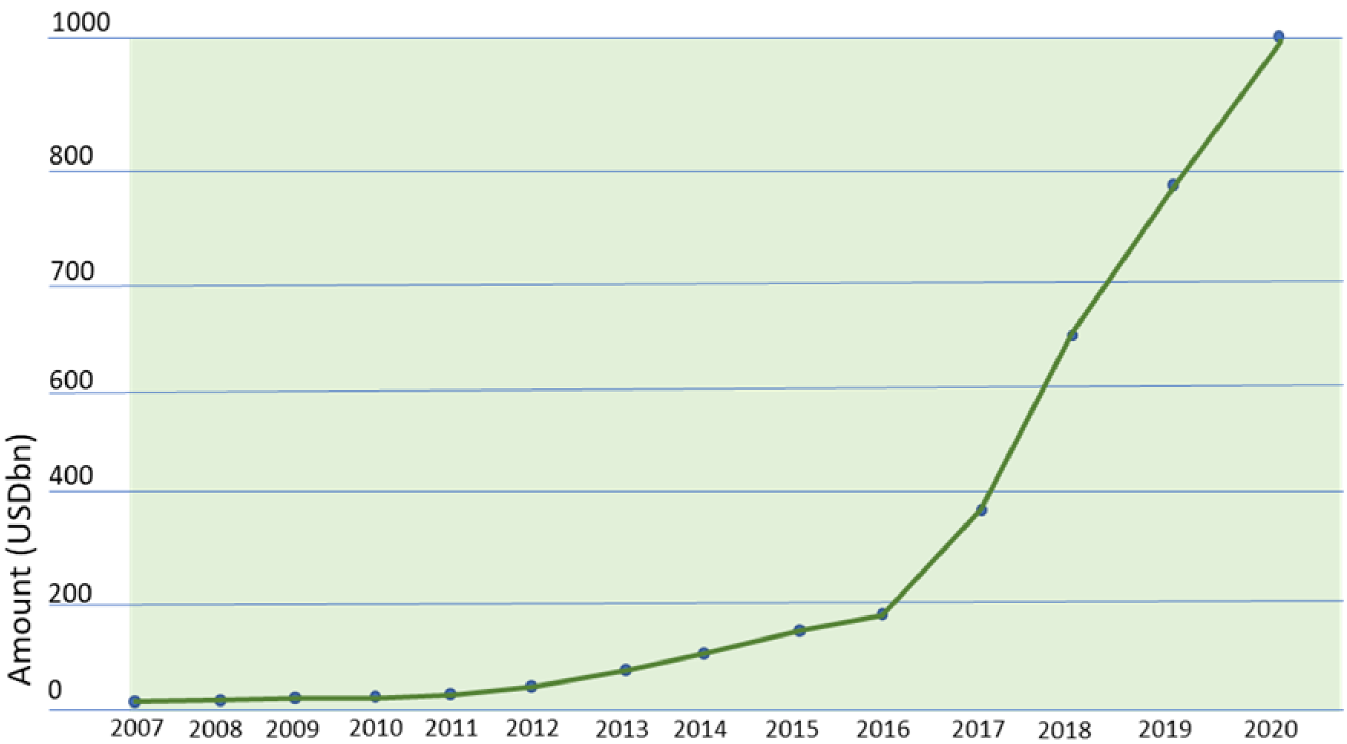
In this report we will refer to green bonds and policy performance bonds (or sustainability–linked bonds). The key difference is that green bonds are focused on the use of proceeds, with resources raised to support particular projects. Policy performance bonds are instead linked to outcomes, e.g., the achievement of sustainability or other targets.

## Green Bonds

Green bonds are financial instruments that allow issuers to borrow money for investments that have positive environmental impacts. They are the 'rock stars' of the sustainable finance world and ever since their debut in 2007 with the AAA-rated issuance from the European Investment Bank (EIB), the green bond market has seen exponential growth (see figure 1). They have also been consistently rated as the most interesting area of green finance in the GGFI survey.

Green bonds are debt issuances where the proceeds must be applied exclusively to finance (in part or in full) projects that promote progress on environmentally sustainable activities, such as reducing waste, enhancing biodiversity, or reducing emissions (through renewables generation, green transport, or energy efficiency programmes). Similar to green bonds, but focused on beneficial societal outcomes are social bonds, with a further subset, sustainability bonds, combining elements of both social and environmentally beneficial outcomes.

**Figure 1 | The Exponential Growth Of The Green Bonds Market**

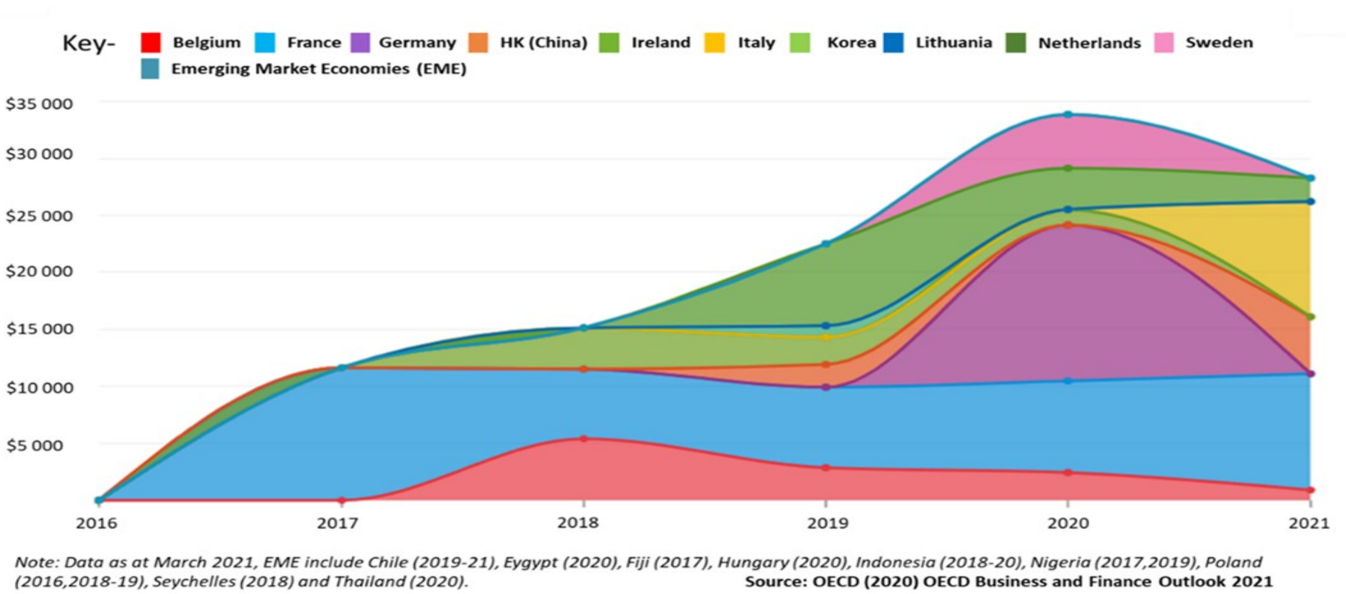


Initially, green bond issuance was the exclusive purview of supranational financial institutions - after the EIB issued its equity index-linked bond in 2007[1], the World Bank issued a labelled ‘green bond’ in 2008[2], and in 2010 the International Finance Corporation issued its first bond.

In 2013, the first corporate green bond was issued by Vasakronan[3], a Swedish real estate company, and the flood gates were opened. December 2020 saw the cumulative issuance of green bonds, worldwide, reach $1 trillion and it is forecast that Green bond investment <u>in a single year</u> is set to double and reach $1 trillion for the first time by the end of Q4 2022[4].

Somewhat slower off the mark, but rapidly gaining momentum has been the issuance of sovereign green bonds (SGBs). Poland was among the first counties to offer an SGB in December 2016 (though it should be noted that France announced its intention to issue an SGB in July 2016), and as of March 2021 nineteen sovereigns had issued green bonds (see figure 2), with the UK coming late to the party in October of the same year - but SGBs still only make up a tiny fraction (0.5% share of the total) of ‘vanilla’ sovereign debt[5].

**Figure 2 | Sovereign Green Bond Issuance 2017-2021**




1 Kreivi E 2017 *Green Bond Market Development and EIB*, EIB https://www.eib.org/attachments/green-bond-market-development-and-eib.pdf

2 World Bank 2022 *The World's First Green Bond* https://youtu.be/i3glJrABLSc

3 Vasakronan 2022 *Green financing* https://vasakronan.se/en/about-vasakronan/financial-information/green-financing/#:~:text=Green%20bonds,with%20Vasakronan's%20other%20EMTN%20bonds

4 CBI 2022 *$1Trillion Annual Green Bond Milestone Tipped for end 2022-$5Trillion Annual by 2025 is new Global Target says CEO Sean Kidney*, CBI Press Release https://www.climatebonds.net/resources/press-releases/2021/10/1trillion-annual-green-bond-milestone-tipped-end-2022-5trillion

5 Fatin L 2021 *Sovereign Green, Social & Sustainability (SGSS) Bonds - How far and how fast could they grow?* CBI https://www.climatebonds.net/2021/03/sovereign-green-social-sustainability-sgss-bonds-how-far-and-how-fast-could-they-grow#:~:text=The%20first%20sovereign%20green%20bond,0.5%25%20share%20of%20the%20total

## Policy Performance Bonds

Governments claim they are committed to tackling climate change, but the historical record raises doubts. For example, the EU ETS market Phase 1 (2005 to 2007) carbon price crashed in 2007 when it became apparent that EU governments had jointly issued far too many permits to emit (they clearly weren't committed to reductions). Despite numerous conferences, papers, and communiqués, there is still a lack of confidence that governments are serious about meeting carbon emission reduction targets. This affects investment, particularly when the worsening economic environment leads governments to talk about 'temporary' easing of carbon reduction commitments at the same time as easing demand lowers carbon prices.

For organisations and individuals seeking to invest in a low-carbon future, uncertainty about government commitment manifests itself in three specific risks[6]:

- Government carbon emission targets being missed.
- Fossil fuel prices remaining low.
- Carbon (emissions) prices remaining low.

Missed targets, low fossil fuel prices, and low carbon prices reduce the profitability of clean energy, or cause losses, but how can these risks be hedged?

The concept of policy performance bonds was first developed by Professor Michael Mainelli in 2005 as part of discussions during the formation of the London Accord[7]. Professor Mainelli drew his inspiration from the world's first known inflation-indexed bonds, which were issued by the Massachusetts Bay Company in 1780[8].

These bonds were invented to deal with severe wartime inflation and with discontent among soldiers with the decline in the purchasing power of their pay. The bonds were in effect a promise that the commonwealth would tackle inflation, backed by financial penalties should it fail to do so.

Policy performance bonds were similar in concept, but instead of inflation, they would focus on carbon emissions. The concept was formally presented by Z/Yen at the World Bank Government Borrowers' Forum in Ljubljana in May 2009, was included in the City of London's submission to COP15 in Copenhagen[9], was promoted by the French government in the run-up to COP21 in 2015 and has been the subject of many papers and journal articles[10].

The original idea was directed at governments as a means of delivering on their climate change pledges (though they are equally suited to corporate issuers). In its simplest form, interest payments are linked to the actual greenhouse gas emissions of the issuing country. An investor in this bond receives an

6 Mainelli et al 2009 Index-linked Carbon Bonds: Gilty Green Government https://www.zyen.com/publications/professional-articles/index-linked-carbon-bonds-gilty-green-government/

7 Z/Yen et al 2007 The London Accord https://www.longfinance.net/programmes/sustainable-futures/london-accord/london-accord-2007/

8 Shiller R 2003 The Invention Of Inflation-Indexed Bonds In Early America NEBR Working Paper 10183 http://www.nber.org/papers/w10183

9 Bosley L et al 2009 *Delivering Copenhagen,* City of London https://www.longfinance.net/media/documents/delivering.pdf

10 Z/Yen 2005 Policy Performance Bonds https://www.zyen.com/research/research/sustainability/policy-performance-bonds/

excess return if the issuing country's emissions are above the government's published target. This type of financial instrument provides a hedge against the issuing country's government (or a corporate organisation) not delivering on its commitments or targets[11]. The ability to hedge facilitates investment in projects or technologies that will pay off in a low-carbon future since, if the low-carbon future fails to arrive, due to changes in policy (such as subsidies or tax breaks) the government bears some of the direct costs by having to pay higher interest rates on government debt.

Policy performance bonds can be issued against a range of social or environmental issues which are policy dependent, including education, deforestation, and housing. Those focused on sustainability are also called sustainability-linked bonds.

## Green Policy Performance Bonds (also known as Sustainability-Linked Bonds)

Green Policy Performance Bonds or Sustainability-linked bonds (SLBs) are a subset of green bonds however, they differ from green bonds, social bonds, or sustainability bonds in several crucial ways:

- First, and most importantly the funds raised are not tied to a specific project, but a corporate (or national) objective – for example improving literacy rates, recycling rates, or absolute reductions in carbon emissions (scope 1 2, or 3). Liberating the proceeds from a specific project frees the issuer to deliver sustainability improvements using a wide range of means – this may include education and training, the recruitment of specialist staff, and the reorganisation of procurement systems as well as more traditional avenues such as the purchase of plant, machinery, intellectual property, or land.
- Second, SLBs are issued with specific sustainability performance targets (SPTs), which contain key performance indicators (KPIs), for example: "*A 10% reduction in 16-20-year-olds not in employment education or training by 2030*".
- Third, if the SPT is missed the bond is subject to a "step-up" clause, meaning the bond interest increases.

Khazanah Nasional Berhad, the sovereign wealth fund of Malaysia, was the first entity to issue a policy performance bond in 2017 when it raised RM100 million from the second tranche of Sustainable and Responsible Investment (SRI) Sukuks tied to educational attainment[12].

Corporates initially followed their lead through sustainability-linked loans: Danone in 2018[13], Louis Dreyfus in 2019[14], and Nokia in 2019[15]. One of the first true SLBs was issued by Eni in 2019, with Schneider Electric following in 2020[16]. This bond is designed to pay up to 0.5% of its nominal value if they fail to meet their sustainability performance targets.

11 Bouzidi A & Mainelli M 2017, L'Innovation Financière Au Service Du Climat: Les Obligations Á Impact Environnemental ISBN 978-2-86-325784-5

12 Khazanah 2017 Khazanah raises RM100 million from second tranche of Sustainable and Responsible Investment (SRI) Sukuk https://www.khazanah.com.my/news_press_releases/khazanah-raises-rm100-million-from-second-tranche-of-sustainable-and-responsible-investment-sri-sukuk/

13 PNB Paribas 2018 Danone's Positive Incentive Financing Strategy https://cib.bnpparibas.com/sustain/danone-s-positive-incentive-financing-strategy_a-3-2238.html

14 Holder M 2019 Louis Dreyfus Company links interest on $750m loan to green performance https://www.businessgreen.com/bg/news/3076513/louis-dreyfus-company-agrees-usd750m-green-loan-repayment-deal

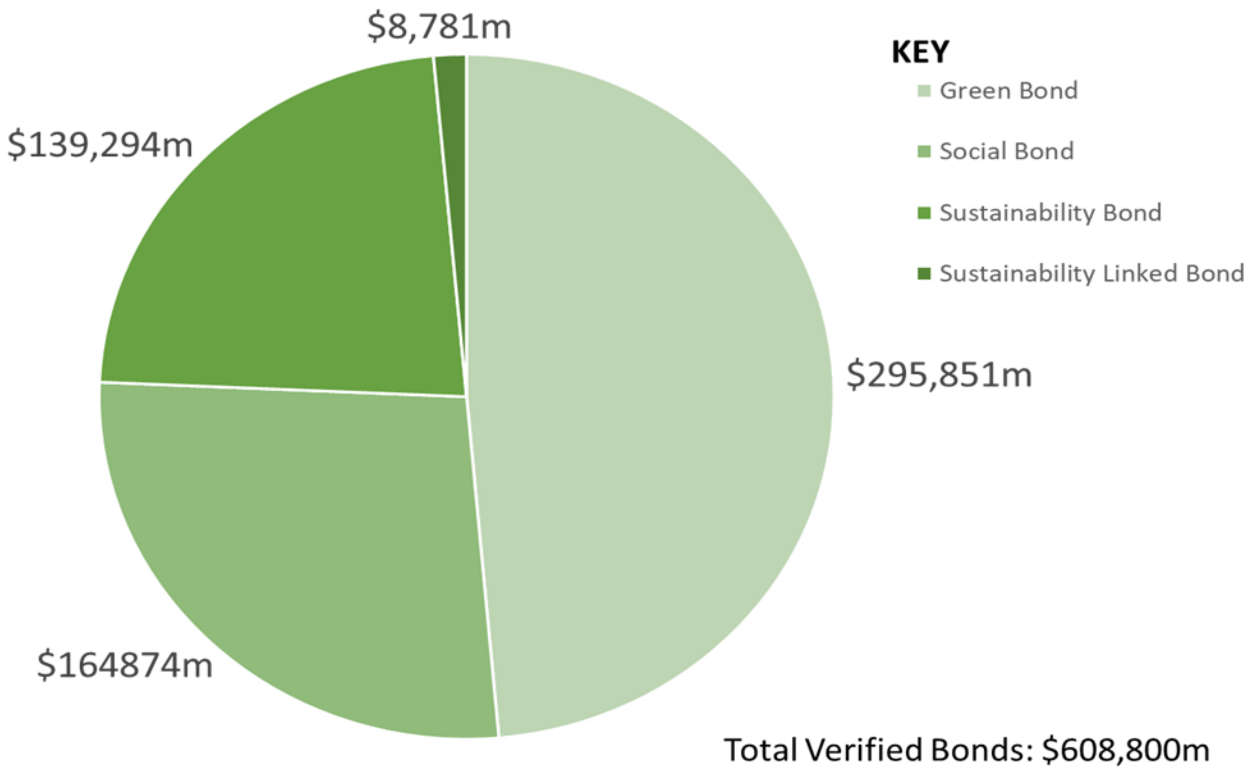
15 Financial Times 2019 Nokia signs €1.5bn loan linked to greenhouse gas emissions https://www.ft.com/content/6a41a968-9265-11e9-aea1-2b1d33ac3271

16 Schneider Electric 2020 Schneider Electric launches its first sustainability-linked Bonds https://www.se.com/ww/en/assets/564/document/174193/release-sustainability-linked-bonds.pdf

SLBs are a small, but rapidly growing sector of the green bonds market (see figure 3). This may be set to change as Chile issued the world's first sovereign sustainability-linked bond in March 2022.

The $2 billion sustainability-linked bond was issued on 2 March, carrying a 4.346% rate or 200 basis points above 20-year U.S. Treasury notes. Demand for the bond reached more than $8 billion, or 4.1 times the original placed amount, spread across investors in Europe, Asia, and the Americas. Finance Minister, Rodrigo Cerda, noted this was a sign of confidence in the Chilean economy. The bond adheres to the Paris Agreement on climate change, including that the country emits no more than 95 metric tons of carbon dioxide and equivalent by 2030 and that 60% of electricity production be derived from renewable energy by 2032.

**Figure 3 | Breakdown Of Finance Instruments By Product Type 2020**




### Issuers

There are several drivers behind the explosive growth of the green bonds market. For the companies issuing them, green debt instruments hold a triple advantage:

First, they enhance company reputation and underscore sustainability commitments – both Apple[17] and Starbucks[18] received significant positive press when they issued sustainability bonds (respectively) associated with cutting carbon emissions and promoting sustainable agriculture. Issuing a green bond conveys leadership and a commitment to sustainability.

17 Judge P 2021 *Apple says its $4.7bn Green Bonds will create 1.2GW* of *renewable power*, Data Centre Dynamics https://www.datacenterdynamics.com/en/news/apple-says-its-47bn-green-bonds-will-create-12gw-renewable-power/

18 Brown N *2019 Starbucks Issues $1 Billion Sustainability Bond for Supply and Retail*, Daily Coffee News https://dailycoffeenews.com/2019/05/20/starbucks-issues-1-billion-sustainability-bond-for-supply-and-retail/

Second, sustainability teams (and the authors are speaking from experience) are rarely generously funded and a financial gulf often exists between ambition and delivery. Low carbon transition and systemic sustainability programmes often require significant upfront investment and yield results over a longer time horizon than traditional investments. Green bonds not only help to bridge this gulf, but the disclosure requirements[19] associated with them not only help communicate the sustainability narrative but firmly place sustainability performance on companies' balance sheets.

Third, green bonds are an effective way to diversify debt and raise funds. Demand for green bonds remains high from investors[20] with green bond issuances remaining significantly oversubscribed[21]. For sovereign issuers, performance-linked sovereign debt encourages a multiplicity of positive outcomes, such as incentivising targeted, performance-based policy action, reducing the cost of capital (if performance is achieved), and increasing the availability of public funds to support performance-related actions[22]. Other benefits include:

- For smaller nations, SGBs offer an opportunity to diversify their investor base. Much of the demand for green bonds comes from institutional investors seeking to 'green' their portfolios and using green bonds as a hedging tool against climate risk. Many of these institutions are based in Europe and United States, where interest rates are still at historically low levels. The release of a sovereign green bond can "*attract a significant number of international investors who are investing for the first time in the country, and that can create an excess demand driving down the interest the country has to offer*"[23].
- The issuance of SGBs allows governments to tap directly into capital markets to finance specific policy measures such as projects, subsidies, or fiscal incentives, which otherwise would struggle to receive funding. Furthermore, the requirement for close cooperation and dialogue between finance ministries and environment and social ministries in the design and development of performance indicators for the bond can break down barriers and encourage collaboration.

## Investors

From an investor's perspective, green bonds are an extremely useful product that allows them to green their portfolios without taking on additional risk. There is even some evidence that despite their lower yields green bonds may outperform vanilla bonds[24].

19 Franklin A et al 2020 Green Bond Impact Reporting Under Securities Law Bloomberg Law https://www.lw.com/thoughtLeadership/green-bond-impact-reporting-under-securities-law

20 Petheram R 2022 Notes from the Investment Floor: Demand for green bonds to remain high, Jupiter https://www.jupiteram.com/uk/en/professional/insights/notes-from-the-investment-floor-demand-for-green-bonds-to-remain-high/

21 Harrison H 2020 Green Bond Pricing In The Primary Market: January - June 2020 CBI https://www.climatebonds.net/files/reports/cbi-pricing-h1-2020-21092020.pdf

22 Finance For Biodiversity Initiative 2022 Greening Sovereign Debt Performance - Shared Risk and Rewards in Financing the Transition https://www.f4b-initiative.net/_files/ugd/643e85_530450f90a2d4ea0bb062c3ad801d107.pdf

23 Frisari G 2019 Sovereign Green Bonds: 4 reasons to pay attention in LAC, IDB https://blogs.iadb.org/sostenibilidad/en/sovereign-green-bonds-5-reasons-to-pay-attention-in-lac/

24 Nordea 2020 Do green bonds outperform in 'risk-off' periods? Yes, but beware the nuances https://www.nordea.com/en/news/do-green-bonds-outperform-in-risk-off-periods-yes-but-beware-the-nuances

Beyond their tight yield curves, green bonds have a deeper significance. In Albert Hirschman's seminal text *Exit, Voice, and Loyalty - Responses to Decline in Firms, Organizations, and States*[25], Hirschman proposes three responses to underperforming organisations – withdrawal of support, lobbying for improvement, or acquiescence to the status quo. The first two of these – focusing on environmental and social performance - have been an integral part of the socially responsible investment (SRI) playbook since its inception. However, withdrawal (disinvestment) and lobbying (active shareholding) come with built-in costs. Green bonds have built-in performance metrics and third-party auditing, making them a lower-cost green investment option.

### Criticisms Of Green And Sustainability Linked Bonds

Green and sustainability-linked bonds are an extremely valuable addition to the armoury of green finance products designed to fight climate change and deliver sustainable growth however, two major issues can undermine their effectiveness:

- ***Standards*** - The absence of a commonly agreed definition and a unique reference framework are major issues in the green bond market[26]. Currently, issuers can choose to issue green bonds which comply with the Climate Bonds Standard[27], Green Bond Principles[28], ASEAN Green Bond Standards[29], Sustainability Linked Bond Standards[30], or, as all these standards are voluntary, no standard at all (see figure 4). Development Banks, such as the Asian Development Bank, the International Finance Corporation, and the Nordic Investment Bank even have their own standards.

  Currently, some bonds are described as green (by their issuers) despite not actually complying with any use of proceeds/reporting requirements. With no single global standard or recognised legal definition, and market criteria based on voluntary compliance investors must ensure that a green bond[31]:
  (a) complies with one of the recognised standards listed above;
  (b) is included in a green bond index[32] and/or;
  (c) has been verified as green by a third-party review.

25 Hirschman A 1970 *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*, Harvard University Press ISBN-10: 0674276507

26 Deschryver P & de Mariz F 2020 *What Future for the Green Bond Market? How Can Policymakers, Companies, and Investors Unlock the Potential of the Green Bond Market?* Journal Of Risk And Financial Management https://www.mdpi.com/1911-8074/13/3/61

27 CBI 2022 Climate *Bonds Standard V3.0* https://www.climatebonds.net/files/files/climate-bonds-standard-v3-20191210.pdf

28 ICMA 2021 Green Bond *Principles* https://www.icmagroup.org/assets/documents/Sustainable-finance/2021-updates/Green-Bond-Principles-June-2021-140621.pdf

29 ACMF 2018 ASEAN Green Bond Standards https://www.theacmf.org/images/downloads/pdf/AGBS2018.pdf

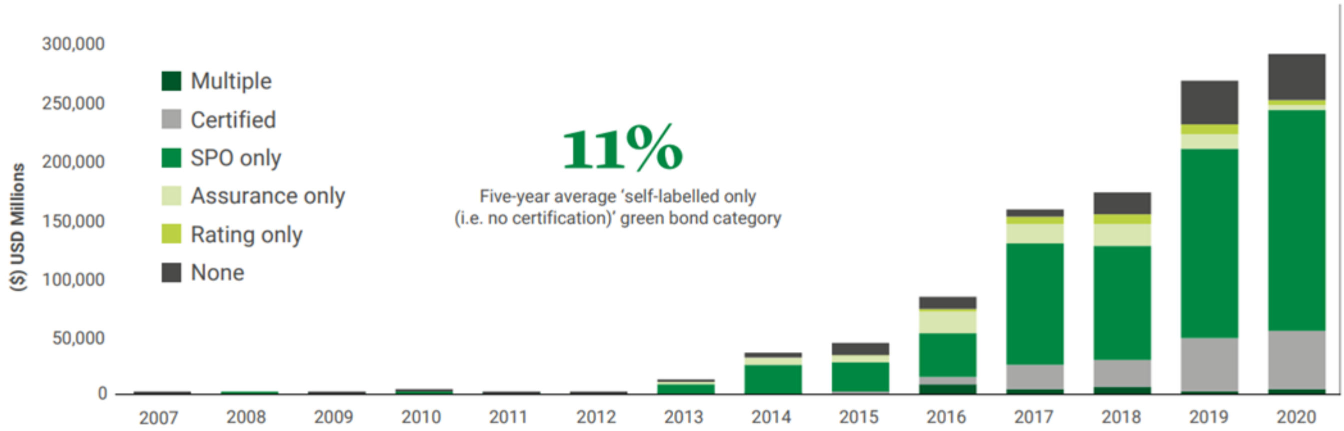
30 ICMA 2020 Sustainability *Linked Bond Standard* https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/sustainability-linked-bond-principles-slbp/

31 Baker McKenzie 2019 *Critical challenges facing the green bond market* https://www.bakermckenzie.com/-/media/files/insight/publications/2019/09/iflr--green-bonds-(002).pdf?la=en

32 S&P Green Bond Index https://www.spglobal.com/spdji/en/indices/esg/sp-green-bond-index/#overview

The forthcoming European green bond standard (EUGBS)[33], may attempt to cut through this log jam by making EU GBS designation mandatory however, there are concerns that this may have unintended consequences such as fragmentation of the international green bond market[34] (due to the EU following different rules to the rest of the international capital markets).

**Figure 4 | Market Share Of Externally Verified Bonds 2007-2020**




**Source: LGIM[35]**

- ***Greenwashing*** – This is a charge that has been levelled (often unfairly) at the green bonds market since its inception. Companies can not only gain a reputational advantage by showing "green leadership" in issuing bonds, but both companies and countries "*are pushing the boundaries of what might be considered a green bond because the savings on debt interest can be significant. Demand has led green bonds to be priced at a premium — or "greenium" — to the price of conventional bonds, which gives issuers slightly lower interest-rate costs*"[36].

  In this context greenwashing can take two forms:
  - **Issuing a bond (labelled or unlabelled) that supports unsustainable activity** – Repsol, the Spanish fossil fuel multinational, issued the oil and gas sector's first green bond in May 2017. The bond was issued with the claim that the funds raised would cut carbon emissions by 1.2 million tonnes over three years. Whilst this was true, and the bond was supported by a solid green bond framework that complied with the Green Bond Principles, the money was used to upgrade the efficiency of existing fossil fuel refineries. With sovereign green bonds, there is a high risk that the debt is not ring-fenced, which means that it could be serviced by environmentally destructive activities. For example, whilst the revenue from the green bond could be invested in public transport or renewable energy, the funds used to service the debt could come from the sale of licenses for oil and gas exploration.

33 European Commission 2020 *European Green Bond Standard* https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/european-green-bond-standard_en

34 ICMA 2022 *Analysis of the amendments to the EuGB Regulation proposed by the Rapporteur of the EU Parliament* https://www.icmagroup.org/News/news-in-brief/analysis-of-the-amendments-to-the-eugb-regulation-proposed-by-the-rapporteur-of-the-eu-parliament/

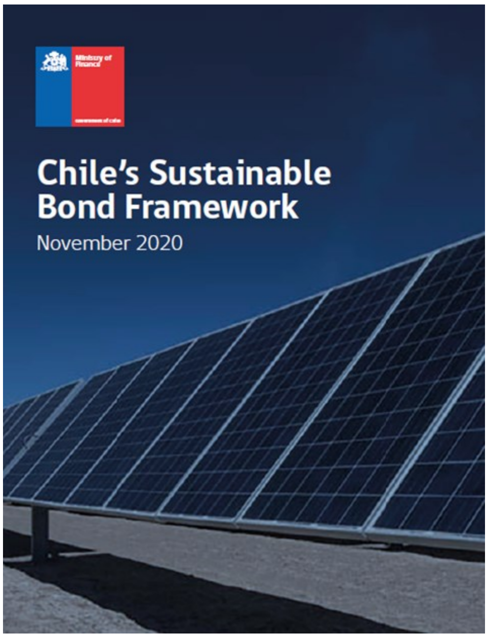
35 King D et al 2021 The Green Bond Market Is the fixed income fulcrum tilting green? https://www.lgim.com/landg-assets/lgimetf/files/green-bond-market---collaboration-lgim--cbi.pdf

36 Temple-West P 2021 Green bonds face new questions over authenticity, Financial Times https://www.ft.com/content/d797800b-fb07-40c7-8386-a22de312cd35

- **Issuing a bond that does not enhance the sustainability performance of the issuer** - In June 2021, JBS, the Brazilian meat company, announced it had sold $1 billion worth of "sustainability-linked" bonds. The company had been under fire for several years for an alleged charge sheet that included deforestation, slave labour, violating Indigenous and local community rights, and major corruption. The bond it issued made no mention of deforestation and did not cover Scope 3 emissions (90% of the company's emissions).

Other less egregious examples abound – Tesco issued green bonds in January and November 2021 which were criticized for emissions KPIs that it had largely already achieved, which covered less than 2% of its total carbon footprint[37]. Regardless, with the bond three times oversubscribed, Tesco benefitted from enhanced interest rates, even if there was little green benefit.

## Chile Breaks The Mould




In March 2022, the Republic of Chile priced the first-ever Sovereign Sustainability-Linked Bond (SSLB)[38]. This $2 billion 20 years SSLB has generated a strong appetite from more than 230 investors and was more than four times oversubscribed.

Chile was motivated to take this pioneering approach following the issuance of its first Sovereign Green Bond in 2019. As a result of this issuance, the cost of debt was reduced, and the investor base was diversified in line with the Chilean Debt Management Office's general strategy of obtaining budget financing at the lowest possible cost in the medium term (taking into consideration the risk associated with refinancing) - maintaining an average term of maturity close to 11 years.

Having demonstrated that a government could obtain a lower cost while achieving climate and social objectives, labelled bonds (such as Sovereign Green Bonds (SGB), Sovereign Sustainability-Linked Bonds (SSLB), and Sovereign Social Bonds (SSB) have become fundamental to Chile's financing and are totally integrated into the general debt management strategy.

With the issuance of the world's first SSLB, Chile aimed to embed green and financial incentives across several political cycles, while mitigating some of the limitations of existing sovereign green, social and sustainability instruments. One of those limitations is linked to the limited pipeline of green projects that could lower the interest of green bonds after a certain threshold.

37 Bloomberg 2021 *Tesco's Ethical Bond Won't Do Much For the Planet, Again* https://www.bloombergquint.com/onweb/tesco-s-esg-bonds-show-challenge-of-relying-on-market-to-cut-co2

38 Rust S 2022 *Chile prices first sovereign sustainability-linked bond*, IPE https://www.ipe.com/news/chile-prices-first-sovereign-sustainability-linked-bond/10058440.article

The two KPIs associated with the bond are an absolute reduction in greenhouse gas emissions (from 112.3mt/pa in 2018 to 95mt/pa by 2030) and an increase in renewable energy generation (60% from renewables by 2032)[39]. Sustainalytics, which provided the second party opinion rated the targets as 'very strong' and 'strong' respectively[40].

> "*Another interesting and sometimes misunderstood feature of Chile's SLB is its long maturity of 20 years. The Sustainability Performance Targets will be verified in 2030 and 2032 and the potential step-up would be paid until 2042. This automatically ties several governments and administrations to the structure and climate actions. It is really a huge step that is, in our view, a game-changer*." Patricio Sepúlveda, head of DMO at the Ministry of Finance (Chile)[41].

This success story highlights the advantages for a sovereign issuer in leveraging the SLB market: Sovereign SLBs can potentially attract a large investor base, especially those with ESG-focused criteria, resulting in enhanced foreign investment, and reduced funding costs, sending strong signals of efficient and effective public policy.

Chile chose a mix of Sovereign Green, Social, and Sustainability bonds (SGSSB) and SSLBs to leverage the advantages of each one of those instruments. SGSSBs are an effective tool for large-scale projects which require expenditure. However, there is a range of actions that can be taken by governments without direct investment and/or expenditure - these include regulation, legislation, and private partnerships. As SSLBs do not require use of proceeds, they provide a stable pipeline of funding for green or social projects.

A further benefit is the fostering of inter-ministerial collaboration between treasury and Debt Management Offices and other governmental departments. *"The key thing being that greening Chile's debt is a core strategy and not a communication objective. With around 29% of the public debt being green/social (labelled bonds: green, social, sustainable, and sustainability-linked bonds), Chile is probably the world leader." Patricio Sepúlveda*

From an investor perspective, particularly insurance companies, sovereign, or pension funds, SLBs offer the opportunity to hedge environmental risks - and potentially profit from the opportunities linked to low-carbon markets. Sovereign SLBs can be viewed as a climate hedge because they include a contingent outcome that includes an option with a value that cannot be worth less than zero. If investors are willing to pay for this insurance, then the issuer benefits from a lower cost of debt.

SSLBs are not the only instruments allowing such a hedge, but they offer assurance to investors that green investment will occur and a strong incentive (through "step-up" clauses) to governments to achieve their targets. For sovereign issuers, the alignment of the incentives is an effective way to achieve ESG objectives while signaling to the market their credibility and thus leveraging this 'intangible' advantage.

39 Minesterio de Hacienda 2022 *Chile's Sustainable Bond Framework* https://www.hacienda.cl/english/work-areas/international-finance/public-debt-office/sustainable-bonds/chile-s-sustainable-bond-framework

40 Sustainalytics 2022 *Second-Party Opinion - Government of Chile Sustainability-Linked Bond Framework* https://www.sustainalytics.com/corporate-solutions/sustainable-finance-and-lending/published-projects/project/government-of-chile/government-of-chile-sustainability-linked-bond-framework-second-party-opinion-(2022)/government-of-chile-sustainability-linked-bond-framework-second-party-opinion-(2022)

41 Personal Communication 18/04/22

This financial innovation could allow Debt Management Offices (DMOs) to obtain better funding so long as Sustainability Performance Targets (SPTs) are achieved, and investors' appetites for these products remain strong.

SSLBs are perfectly adapted for countries that lack large-scale green projects to fund – large-scale renewable energy or public transport projects are not always appropriate for transition economies. However, some investors may perceive this as a risk as they may prefer the classic use-of-proceeds approach. This wariness may be compounded if the SSLB is structured with unambitious sustainability targets, questionable KPIs, and low penalties for non-performance. However, as the market develops, economists and investors will be able to derive sustainability risk premium estimates based on a comparison between SSLBs and classic sovereign debt. Countries could also be compared on the scale and certainty of their commitments by examining the quantity of bonds issued alongside market prices.

### SSLBs - Potential Problems And Pitfalls

To issue sovereign SGBs and SSLBs, Chile published a Green Bond Framework as well as a Sustainability -Linked Bond framework. These policies were prepared and led by the Ministry of Finance ) and other sectoral ministries (and did not require any legal changes. The DMO at the Ministry of Finance, in coordination with the Ministry of the Environment, developed a Financial Strategy on Climate Change, which included the creation of the Public-Private Green Finance Table, workshops to scope implications and enhance capacities, research to generate data, and analysis (including Green Growth Opportunities for the Decarbonisation Goal for Chile[42]), and the promotion of financial instruments to fund these green initiatives, such as Green Bonds.

From a governmental perspective three challenges must be met to make a sovereign SLB issue successful:

- First, the sustainability and financial structures must be easy to understand, ambitious, creative, credible, and constructed in consultation with potential investors.
- Second, DMOs should aim to create ambitious, but achievable, KPIs and SPTs to ensure that the SSLB is a credible green product. DMOs should engage in early discussions with the Second Party Opinion (SPO) agencies to detail and explain the structure so that the SPOs in charge of the verification of performance against SPTs can detail their monitoring and control mechanisms.
- Third, given the number of stakeholders in the process, the issuance of an SSLB is a complex process. The intragovernmental communications channels and processes must be carefully established, mapped, and communicated to ensure that there are no legal pitfalls or challenges once the process is started.

From the author's experience, DMOs should follow these first steps (structuring, communicating, and executing) meticulously to successfully deliver an SSLB.

42 Ministry of Finance, Chile 2020 *Green growth opportunities for the decarbonization goal for Chile* https://documents1.worldbank.org/curated/en/968161596832092399/pdf/Green-Growth-Opportunities-for-the-Decarbonization-Goal-for-Chile-Report-on-the-Macroeconomic-Effects-of-Implementing-Climate-Change-Mitigation-Policies-in-Chile-2020.pdf

Discussions with asset managers and asset owners weighing up the benefits of investment in Sovereign SLBs highlight some key issues that require careful consideration.

- ***Political Cycles*** **-** Some investors highlighted the fact that sovereign SLBs mature across multiple electoral cycles. Depending on the maturity of the bond, several governments could be tied to the delivery of SPTs and KPIs. This raises the issue of the risks associated with government transitions. New parties taking charge may have different policy priorities - potentially at odds with the commitments embedded in the SSLB.

  However, Sustainability-Linked Bonds are designed to hedge precisely this type of risk, regardless of whether the issuer is a corporate, a financial institution, or a government: A corporate issuing a 10-year SLB is facing the same challenge given the average CEO turnover is 3.7 years[43]. There is no reason to treat a government differently than a CEO. In addition, inflation-linked bonds for maturities larger than 10 years are already issued and engaging several governments without raising investors' or issuers' worries.

- ***Shorting The*** **Government's** ***ESG Performance*** - Some investors do not want to "short" the sustainability performance of a government and are worried to make the situation of a potentially vulnerable issuer harder and more complex if a target is missed. By issuing an SSLB a government, is shouldering the risk of sustainability policy volatility however, this seems fair given that the government is creating this risk in the first place and therefore must be accountable and responsible to provide means for investors to protect their investments – literally a case of politicians putting their money where their mouths are!

  SSLBs are a hedge against the risk of a government not keeping its promises. The investor receives the penalty with certainty. This is a straightforward reallocation of sustainability policy risk from the investor to the issuer and ESG investors will not be hoping that the government fails: The credit spread and the yield to the SSLB will be affected by a missed sustainability target. The credit spread will probably be widened. If the SSLB is priced correctly, the penalty should compensate for the exact amount of widening. If the failure to meet sustainability objectives has a stronger impact on the credit risk, the required yield by investors will be impacted and credit spreads could widen by more than the penalty.

  Other potential options include the use of a payment-in-kind toggle feature for the exact amount of the penalty, or a compensation mechanism (built around well-recognised International Financial Institutions to mitigate corruption risks). The main argument in favor of SSLBs is the strengthening of the credibility and commitment to sustainability policy. The penalty is a simple but powerful incentive to help sovereigns to enhance the credibility of their policies and to signal a strong incentives alignment.

43 Smyth L 2020 *Adapt or die': Why being a CEO is more challenging than ever* The CEO Magazine https://www.theceomagazine.com/business/management-leadership/ceo-turnover/

- ***Choosing the right maturity*** - The maturity should provide the right balance between the time needed to complete a sustainability target and the ALM (Assets and Liabilities Management) of a DMO. Maturity represents the time over which companies can choose projects, make investments and experiment with new ways of generating sustainability results. Unlike a corporate or financial institution, for a sovereign, the connection between assets and liabilities is not straightforward. A Government's balance sheets are much more complex, large, and diversified and debt is generally issued for financing the overall budget deficit. Furthermore, it is complicated to identify the financial characteristics of all the assets and liabilities of a government and to value them correctly.

  DMOs are driven by a reduction in the funding costs for a country. Therefore, funding strategies aim to minimize the cost of borrowing.

  As SLBs are not tied to a specific project, this instrument can be used to mitigate the different balance sheet risks a government could face. SLBs could be used to reduce maturity and currency mismatches on the balance sheet. The chosen maturity should be chosen in relation to the balance sheet risk factors of a government.

- ***ESG data availability and transparency*** **-** For SSLBs to be successful, investors need to trust the data used for the KPIs' and SPTs' computation and progression monitoring. SPO (Second Party Opinion) firms, external auditors, and national statistics authorities should be used to establish a strong MRV (Monitoring, Reporting, and Verification) framework regarding SPTs.

  National official statistics used for an SSLB must rely on reliable data sources, sound methods, and assured quality, for example: Inflation-linked bonds are based on strong CPI (Consumer Price Index) statistics published by national statistics authorities.

  Countries seeking to issue SLBs must meet the key technical preconditions for the introduction of SLBs: firstly, suitable KPIs that meet international best practices must exist, which are compiled by independent statistical agencies that are free from political influence (National independent Statistics Authorities are a good indicator of this); secondly, the government debt management strategy must be transparent.

- ***Private Sector Responsibility For Meeting Targets*** **-** Some sustainability performance targets, for example, linked to GHG emissions reduction rely, in large part, on private sector cooperation. Less than 100 companies are responsible for 71% of world GHG emissions according to a CDP report. As a result, some DMOs do not feel comfortable with a target that is largely not controlled by them.

  The answer to this key point is that government action has a vital enabling role in delivering private sector action on GHG reductions. According to the Carbon Disclosure Project, "*32% of emissions come from public investor-owned companies, making their investors a key agent in the transition to a sustainable economy*"[44]. Such investors could make their economic support conditional on the companies committing to the decarbonization of the energy sector. This could be facilitated if these companies themselves issue SLBs!

44 CDP 2017 The Carbon Majors Database https://cdn.cdp.net/cdp-production/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772

Economists agree that putting a price on carbon is a strong tool that could help reduce emissions. Thus, even if governments are not directly responsible for emissions, they could increase the carbon price if they are anticipating that an environmental SPT will not be met. However, to avoid high inflation and social unrest, governments must consider the social impact and redistributive options to implement before implementing such a price increase.

## Conclusions

We expect innovative and agile countries to start issuing SSLBs following Chile's lead. In Latin America, Asia, and Africa, several countries are currently considering SSLBs. Based on the corporate SLBs market development, one could imagine that SSLBs will represent 10% of the green government issuance in a few years and as a result, SSLBs issuers will be under pressure to exhibit higher standards to differentiate their offerings.

In the current context of rising inflation and interest rates, SSLBs could even be more attractive than classic debt. If SPTs and KPIs are bold enough, the cost of funding should be a persuasive argument to convince governments to engage in such instruments.

However, governments should be careful when structuring SSLBs. Indeed, SSLBs structuring is like Blowfish cooking: the smallest mistake in preparation could be (financially) deadly! With fugu, a chef could face the loss of his license, a fine, litigation, or prison as a penalty for bad preparation. For a country issuing a badly-structured SSLB, missing a target could not only be met by an additional coupon (step-up) but could also face credit risk. Disappointed investors, especially those with strict sustainability mandates, could create selling pressure. It is in the interest of both issuers and investors to anticipate such a risk.

**Authors:** **Djellil Bouzidi, Economist and Founder Emena Advisory**
**Simon Mills, Senior Associate, Z/Yen Group**

Z/Yen helps organisations make better choices - our clients consider us a commercial think-tank that spots, solves and acts. Our name combines Zen and Yen - 'a philosophical desire to succeed' - in a ratio, recognising that all decisions are trade-offs. One of Z/Yen's specialisms is the development and publication of research combining factor analysis and perception surveys.

**www.zyen.com**

Long Finance is a Z/Yen initiative designed to address the question "When would we know our financial system is working?" This question underlies Long Finance's goal to improve society's understanding and use of finance over the long-term. In contrast to the short-termism that defines today's economic views the Long Finance timeframe is roughly 100 years.

**www.longfinance.net**

Financial Centre Futures is a programme within the Long Finance initiative that initiates discussion on the changing landscape of global finance, seeking to explore how finance might work in the future. Financial Centre Futures comprises the Global Green Finance Index and other research publications that explore major changes to the way we will live and work in the financial system of the future.

**www.greenfinanceindex.net**