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EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT

Paving the Path:

Lessons from Chile's Experiences as a Sovereign Issuer for Sustainable Finance Action

Sebastien Boitreaud, Teal Emery,
Luis Gonzales, Bryan Gurhy,
Felipe Larrain, and Cindy Paladines

WORLD BANK GROUP

Graphic Designer: Florencia Micheltorena

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Abbreviations

AUM	assets under management
CBI	Climate Bonds Initiative
CSD	central securities depository
DMO	debt management organization
EMBI	Emerging Markets Bond Index
ESG	environmental, social, and governance
FCI	Finance, Competitiveness & Innovation Global Practice
GBI	Government Bond Index
GDP	gross domestic product
NDCs	Nationally Determined Contributions
OECD	Organisation for Economic Co-operation and Development
PACs	Pacific Alliance countries
PDM	public debt management
PRI	Principles for Responsible Investment

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Executive Summary

Climate risks are on the rise globally. For emerging market countries such as Chile, these risks can manifest as an increased propensity for drought, wildfires, flood events, and landslides.[1] As a result, governments are increasingly prioritizing policy solutions that will support an economic transition to mitigate the impact of climate change while also supporting households and communities as they adapt to the changing risk landscape.

The financial sector is playing a key role in supporting a just economic transition. For many emerging market countries, the sovereign is the largest issuer of domestic debt, and the instruments and issuance path they choose can be key toward influencing downstream financial sector activity. For their part, global investors are becoming more attuned to the environmental, social, and governance (ESG) factors that underpin sovereign debt instruments.

This report explores Chile's sovereign issuer options, opportunities, and challenges through the lens of its recent decisions to issue green, social, and sustainable debt instruments. In 2019, Chile issued the maiden sovereign green bond in the Americas. Between this debut offering and May 2021, the sovereign has issued more than US$16 billion in green, social and sustainable debt, amounting to 16.6% of its total central government debt stock outstanding.[2] The report explores the evolving global sovereign ESG debt landscape; Chile's sovereign debt market development strategy and climate policy context that gave rise to the sovereign's decision to issue labeled debt; and the practical steps Chile's debt managers took to implement those decisions.

Sovereign debt managers are confronted with a complex instrument mix and an evolving investor landscape. Chile's credible standing as a sovereign debt issuer highlights the ESG opportunities available to sovereigns with a stable macroeconomic profile, political commitment, and debt issuance strategy. In addition, Chile issued its green bonds under a holistic ESG framework, which lent greater legitimacy to the instruments, the underlying projects, and the reporting process. Moreover, the experience and market reaction of other sovereign green and social bond issuances provided a firm foundation for Chile's ESG issuance approach.

The onset of the COVID-19 pandemic, combined with the diverse macroeconomic and fiscal profiles of the Pacific Alliance sovereigns, warrants careful consideration by debt managers in the region on the suite of debt management–related ESG activities. The benefits of labeled debt issuance may not always outweigh the costs, and this is especially true

1 For more information on Chile's vulnerability, see the World Bank's Climate Change Knowledge Portal at https://climateknowledgeportal.worldbank.org/country/chile/vulnerability#:~:text=Vulnerability,floods%20and%20landslides%2C%20and%20droughts.
2 For more information, see the Ministry of Finance's website at https://www.hacienda.cl/english/news-and-events/news/chile-issues-us-2-billion-in-international-markets.

if labeled issuances undermine other sovereign debt strategic goals, such as building liquidity for key conventional benchmark bonds. Issuance of local currency labeled bonds in the short term may be complicated because of insufficient domestic demand for ESG instruments, while foreign currency issuances increase exposure to foreign exchange rates. In addition, the process of issuing a new labeled instrument can be costly and can take time. Moreover, labeled instrument issuance is not a panacea—and sustainability-oriented investors are increasingly concerned about how instruments support a coherent sustainable development framework.

GPS
Global Program on Sustainability

This paper forms part of a series of publications under the Global Program on Sustainability (GPS). The series is a knowledge product of GPS Pillar 3 with the objective to promote the use of high-quality data and analysis of sustainability to better inform decisions made by governments, the private sector, and financial institutions. GPS Pillar 3 is led by the World Bank's Finance, Competitiveness and Innovation (FCI) Global Practice (GP) in collaboration with World Bank Treasury (TRE), Development Economics Vice Presidency (DEC), and other GPs. Focusing on ESG issues in sovereign investing, the series disseminates practical, evidence-based recommendations for market participants, including institutional investors, sovereign issuers, credit rating agencies, and ESG data and service providers, among others.

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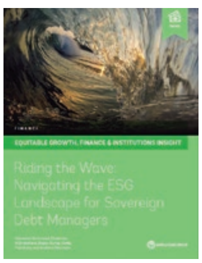
"A New Dawn: Rethinking Sovereign ESG" proposes improvements to the sovereign ESG framework and builds on findings and recommendations discussed in other papers in the series.

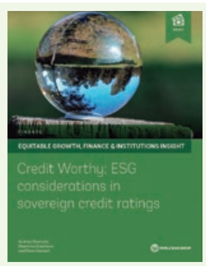
"Demystifying Sovereign ESG" focuses on comparing the sovereign ESG methodologies of leading sovereign ESG providers and describes structural challenges posed by the current sovereign ESG framework.



"Riding the Wave: Navigating the ESG Landscape for Sovereign Debt Managers" provides a thorough discussion of sovereign ESG from a debt management office perspective.

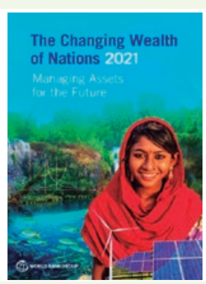
"Paving the Path: Lessons from Chile's Experiences as a Sovereign Issuer for Sustainable Finance Action" provides a concentrated study of Chile's ESG-focused issuances to date and relevant lessons.

"Spatial Finance: Challenges and Opportunities in a Changing World" (produced in partnership with the World Wildlife Fund) discusses challenges with the E data, including at the sovereign level, and explores the use of satellite data to address the quality and availability of E data.

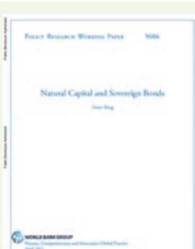


"Credit Worthy: ESG Considerations in Sovereign Credit Ratings" demystifies the role of ESG factors in country credit ratings and highlights potential ESG impact on the creditworthiness of countries with the application of the World Bank's wealth and stranded asset data.

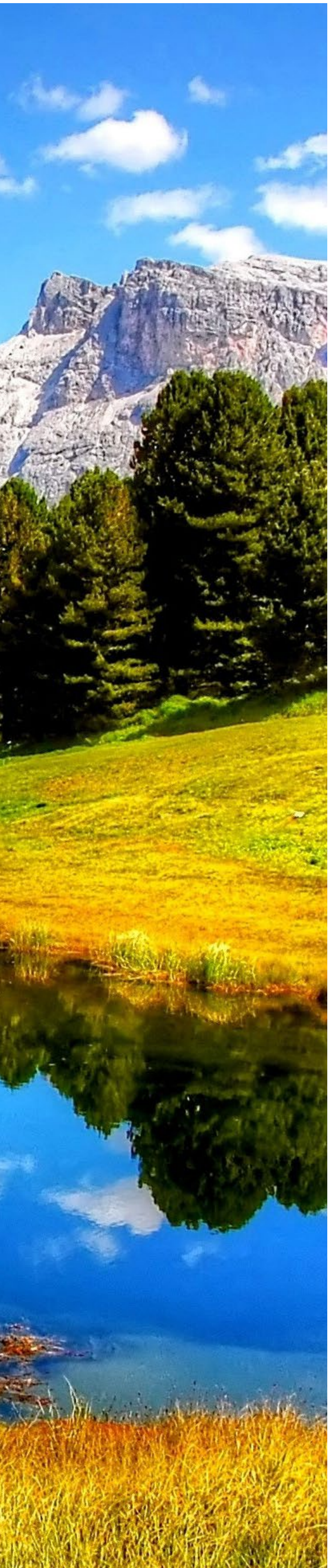
"1% Growth in Natural Capital: Why It Matters for Sovereign Bonds" quantifies the materiality of natural capital and its impact on sovereign bonds by adjusting for ingrained income bias.



The chapter "Natural Allies: Wealth and Sovereign ESG" from the book *The Changing Wealth of Nations 2021: Managing Assets for the Future* focuses on challenges in ESG data and discusses solutions with the application of the World Bank wealth data.



"Natural Capital and Sovereign Bonds" introduces the concept of ingrained income bias and presents evidence that sovereign bond yields reflect a country's various types of natural capital.



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Introduction

Climate change poses enormous challenges to biological, ecological, economic, and social systems in Latin America. As populations grow and sea levels rise and further strain food and energy systems, the need to adapt economic and financial systems in the region is more urgent than ever before. At the same time, rising inequality and deepening social fissures have also been on the rise, and have been, in many contexts, exacerbated by the COVID-19 pandemic. In recognition of the need to transform their economic and financial systems, countries in the region as well as globally have pledged to take concerted climate actions—known as their Nationally Determined Contributions (NDCs)—under the Paris Agreement at COP21 in December 2015. In addition, countries have pledged to develop their economies in a socially responsible and sustainable way, as enshrined by the 17 goals codified under the United Nations Sustainable Development Goals, pledged into action in 2015.

Global investors are, in turn, also responding to these combined environmental, social, and governance (ESG) challenges. Sustainable investment involves taking account of environmental, social, and governance issues in investment decision-making to deliver better long-term financial returns and positive societal impacts. The volume of sustainable assets under management globally that tracks ESG factors continues to grow, as investors increasingly acknowledge the role these factors can play in driving asset valuation and as some investors become more focused on the environmental and societal impacts of their investment decisions.

Since 2011, the countries of the Pacific Alliance have worked collaboratively to foster deeper financial and economic integration across the group. Several initiatives, including the issuance of the world's first simultaneous catastrophe bond among regional peers (World Bank 2019), have received capacity building and technical assistance from the World Bank Group and other multilaterals, including the Inter-American Development Bank. As the World Bank steps up its support of sovereign efforts to address the impacts of climate change in client countries, the Pacific Alliance group is a natural platform to exchange knowledge and best practices on sovereign issuer engagement with ESG issues. The Pacific Alliance countries are among the countries most exposed to climate risks and natural hazards.[3] So too are the debt management authorities of the Pacific Alliance sovereigns among the most innovative in steering sovereign portfolios toward ESG-oriented instruments and solutions.

3 Pacific Alliance sovereigns have elevated geological and hydrometeorological risk because of their location on the Pacific "Ring of Fire." These trends will be exacerbated by the impacts of climate change (Villalobos and Pérez 2021).

This report explores sovereign issuer options, opportunities, and challenges faced by the first issuer of ESG labeled debt in the Americas—Chile. As a stable economy with a robust macroeconomic and fiscal framework, Chile's decision to develop the region's first sovereign green and then sustainable bond framework, to engage with ESG investors, and to issue both green and social instruments can be particularly instructive for regional peers who may wish to understand the benefits and potential drawbacks of engaging more actively with ESG debt management strategies. Since Chile's first green bond issuance, Mexico issued the world's first Sustainable Development Goal bond in September 2020, and Colombia has announced its intention to issue green bonds in domestic currency. In March 2021, Chile issued its first sovereign sustainable bond,[4] which included a mix of green and social projects, adding to the flexibility of the instrument. Other sovereigns in the region, including Costa Rica, the Dominican Republic, and Peru, have begun planning toward potential sovereign labeled instruments. These varied experiences can provide guidance not just to sovereigns in the Pacific Alliance, but also to sovereign issuers globally. The report explores the building blocks of these approaches; the costs and efforts required, especially for the issuance of ESG-labeled instruments; the factors that may increase the likelihood of success; and associated benefits and challenges of these approaches.

4 The sovereign issued its sustainable bond as this report was going to press; as such, the issuance is not analyzed as comprehensively as are other issuances by the sovereign (https://www.hacienda.cl/noticias-y-eventos/noticias/chile-emite-bonos-sostenibles-por-us-1-500-millones-en-mercados-internacionales).


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Understanding the Environmental, Social, and Governance Finance Universe and Options for Pacific Alliance Sovereigns

TRACKING GLOBAL INTEREST IN ENVIRONMENTAL, SOCIAL, AND GOVERNANCE FACTORS AMONG FIXED-INCOME INVESTORS

The volume of assets under management that incorporates broadly defined environmental, social, and governance (ESG) factors has grown globally, including in Latin America and the Caribbean. J.P. Morgan estimated that ESG assets under management (AUM) reached nearly US$50 trillion in 2020 (Oganes et al. 2020). Although European investors were the pioneers in ESG integration, since 2018 most of the growth has come from North American and Asian investors. ESG investing began in equities, before becoming prevalent in the corporate fixed-income market. It is only in the last few years that investors have begun to use the ESG investing framework for the sovereign debt asset class.[5] Although sovereign ESG approaches continue to evolve, this section outlines current approaches to sovereign ESG as well as key issues for sovereign fixed-income investors. It also discusses the rise of sovereign ESG indices, and the implications of these indices for Pacific Alliance issuers and for sovereign labeled issuance.

Government debt markets in the Pacific Alliance are sizeable, driven by local currency issuances, and they dwarf the labeled debt market. Since the 2000s, governments in the region have made concerted efforts to issue in local currency to mitigate the impact volatile capital flows can have on the currency during times of economic stress or changes in global financial conditions.

5 Sovereign fixed income managers have published frameworks outlining their approaches to ESG integration (see appendix B).

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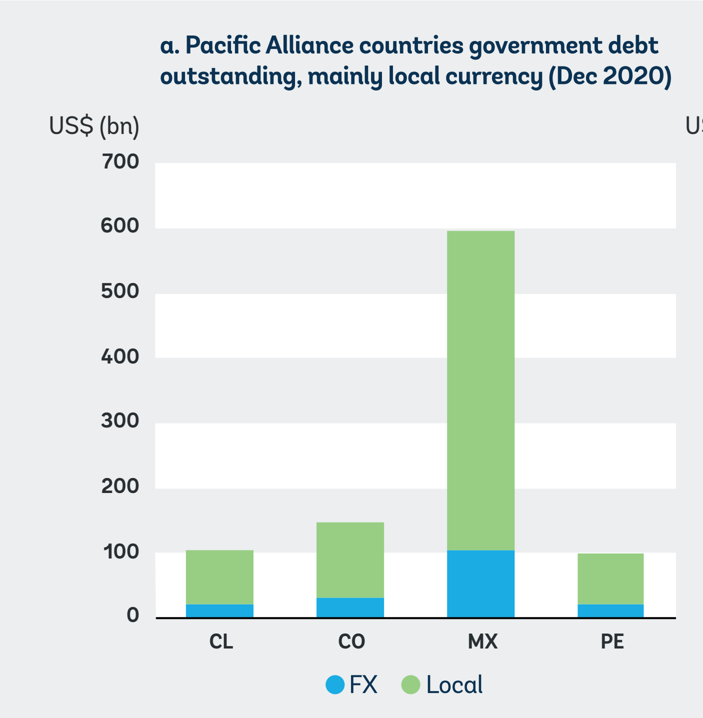
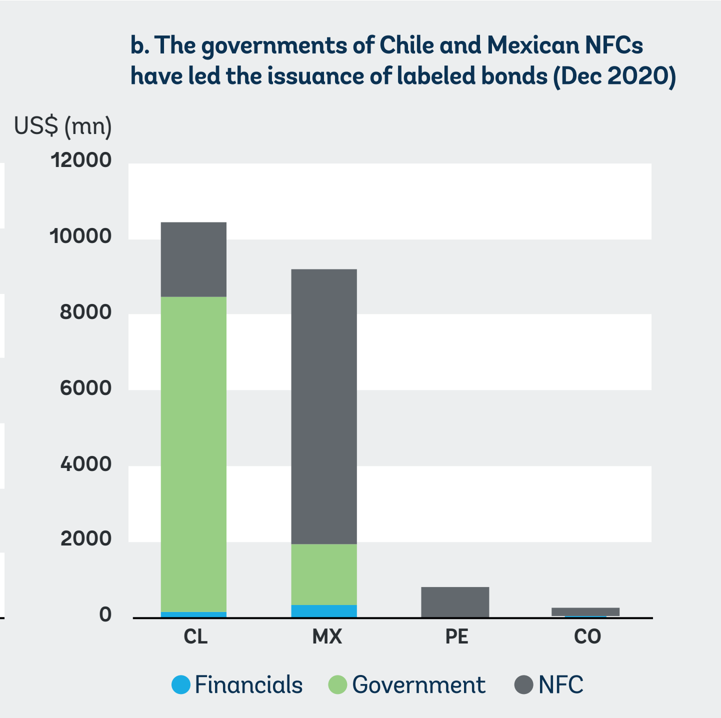
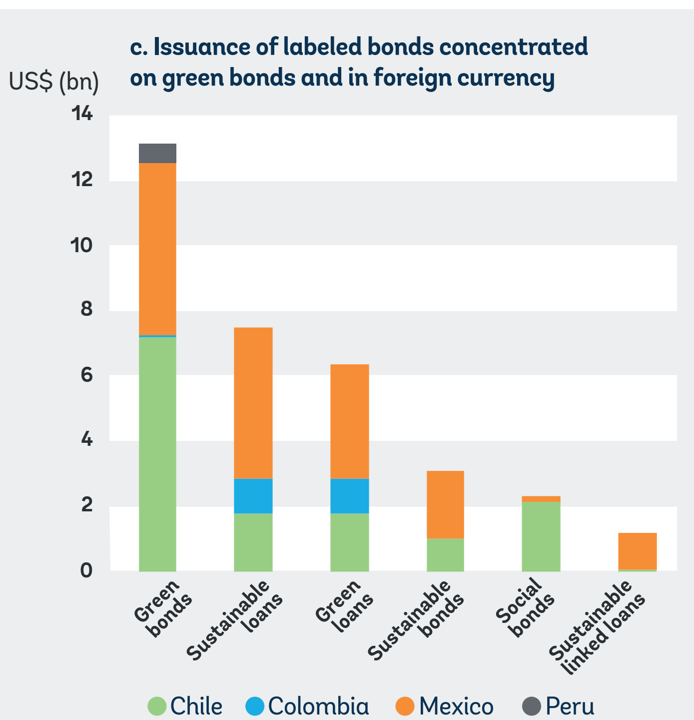
FIGURE 1.1 Overview of Pacific Alliance Countries' Debt Market



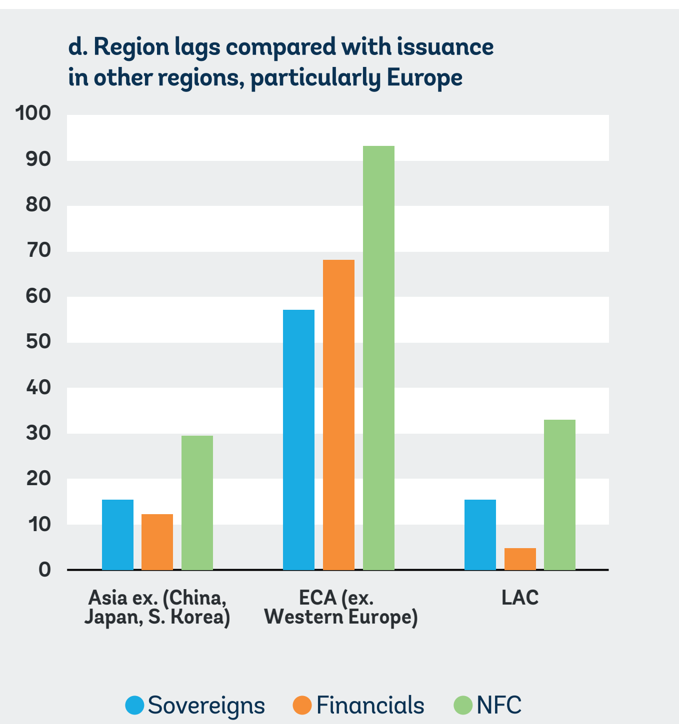
Source: Bloomberg, staff calculations.



Source: Bloomberg, staff calculations.
Note: NFC = nonfinancial corporation.



Source: Bloomberg, staff calculations, data as of December 2020.



Source: Bloomberg, staff calculations, data as of March 2021.
Note: NFC = nonfinancial corporation.

Traditional sovereign credit risk analysis focuses on macroeconomic, financial, and political factors that influence a government's willingness and ability to pay its debts in full and on time. This willingness and ability to pay involves macroeconomic factors such as the level of deficits, debt, growth, and foreign exchange reserves as well as financial variables such as measures of risk appetite and global liquidity. Governance and political risk issues have also long been part of traditional sovereign credit analysis. A political assessment of the willingness and ability (or lack thereof) of a government to enact policies that enhance its ability to repay debt in the future (such as prudent fiscal deficits, growth-enhancing structural reforms) is also seen as important. Moreover, because a bankruptcy mechanism for sovereign debt does not exist, this aspect is seen as a key element of credit analysis for issuers lower on the credit rating spectrum.

According to the Principles for Responsible Investment (PRI), a United Nations–supported network of investors, sovereign ESG integration in investment analysis aims to incorporate material ESG factors that affect a country's ability to meet its debt obligations. These factors would also affect the market valuation of a sovereign's bonds. As noted above, governance factors have long been part of sovereign debt analysis and are generally recognized to be the most material for bond prices. An investor poll by PRI and the CFA Institute found that sovereign fixed-income investors believe that social and environmental factors will grow in importance for bond valuations in the years to come (PRI 2019). Social risks can lead to economic and political disruptions that may lead to lower economic growth or higher fiscal pressures, potentially affecting bond prices. The Bank for International Settlements (BIS) warns (Bolton et al. 2020) that environmental risks will likely have much more severe impacts in the future than in the past, and if these rising future risks are not properly accounted for, they could create systemic financial disruption.

ESG risk factors can be integrated into three levels of analysis in the investment process: at the investment research level, the security level, and the portfolio level. At the investment research level, investors may use country-level ESG data to develop materiality frameworks. These frameworks can then feed into exclusion or watch lists and centralized research databases. At the security level, investors may consider carrying out credit analysis with ESG factors incorporated into modeling. This analysis may also include sensitivity and scenario analyses. At the portfolio level, investors may analyze ESG factors across the portfolio to inform portfolio construction and to manage risk exposure.

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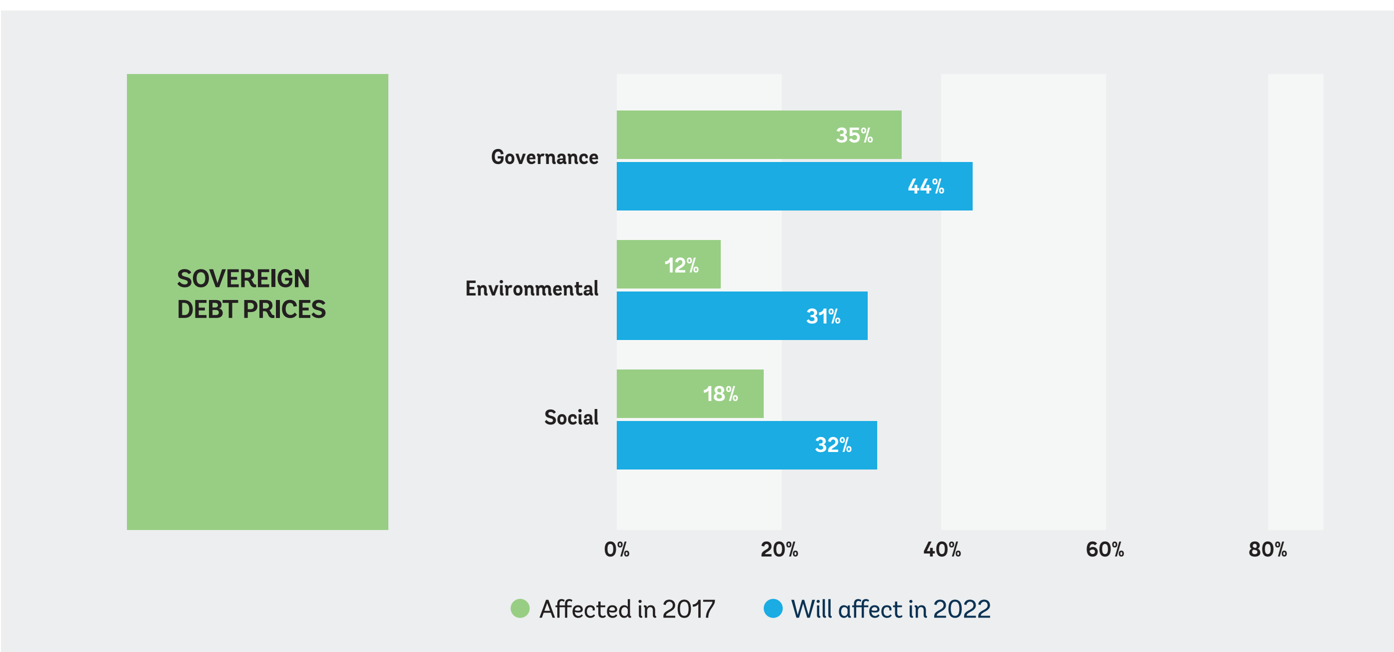
FIGURE 1.2 Impact of ESG Issues on Sovereign Debt Prices: Aggregated Market Participant Views



Source: CFA Institute and PRI.
Note: Percentages represent respondents who answered "often" or "always." Base: All respondents who invest in equity and/or equity-related instruments (961); all who invest in financial institutions and/or financial institutions–related instruments (747).

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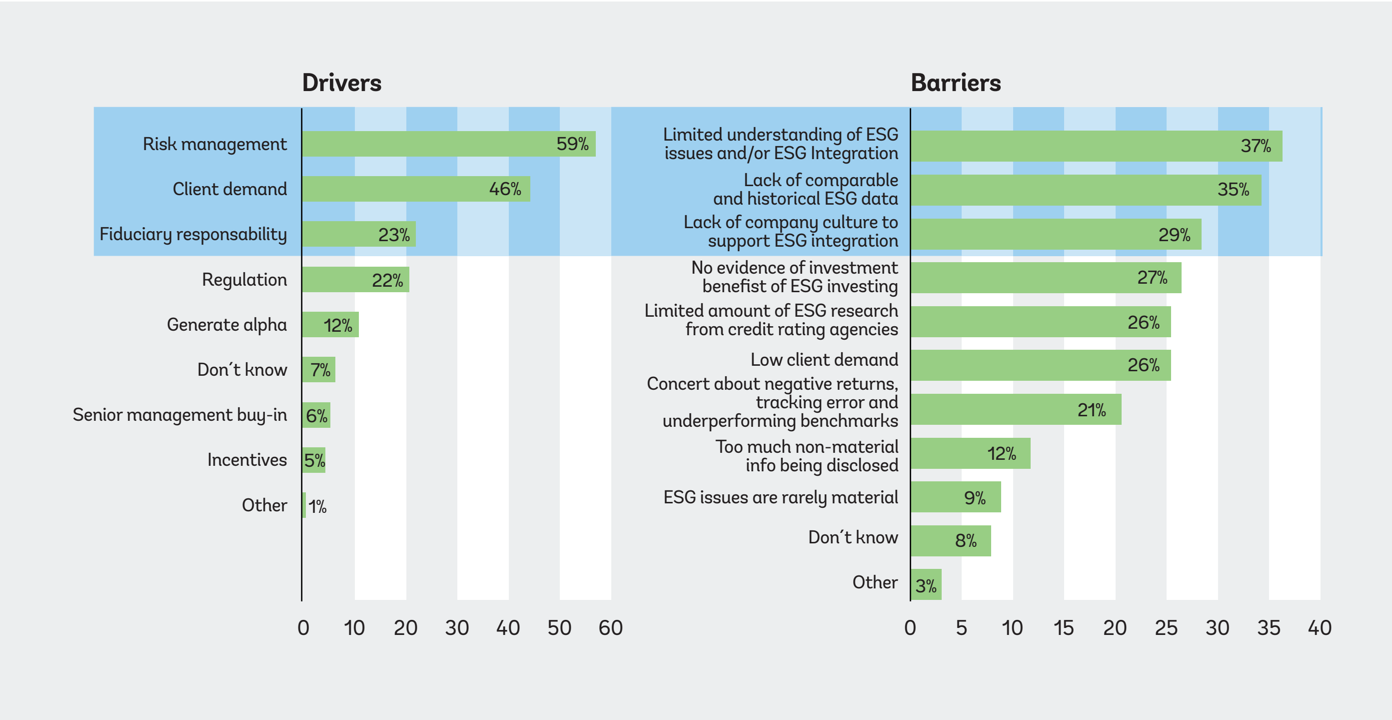
FIGURE 1.3 Drivers of ESG Integration in Fixed Income



Source: CFA Institute and PRI.
Note: Base: All respondents who cover equity and/or equity-related instruments (961); all who cover financial institutions and/or financial institution–related instruments (747). Percentages represent those who thought each item was a main driver/barrier; survey respondents could choose more than one answer.

The concept of fiduciary duty incentivizes the approach focusing on ESG's potential for improving risk-adjusted returns. Although approaches are diverse, sovereign fixed-income managers have tended to characterize their sovereign ESG integration frameworks as potentially useful complements to their traditional sovereign credit analysis.[6] Fifty-nine percent of fixed-income market participants cited risk management as a motivation for ESG integration in a recent poll by PRI and the CFA Institute. Although the specific legal interpretation of fiduciary duty depends on the jurisdiction, it generally means that asset managers and trustees have a legal obligation to take actions that are in the best interest of those whose money they are investing.[7] If ESG investing is framed as purely about improving risk-adjusted returns, then advocates can argue that ESG integration is consistent with their fiduciary duty to their clients, or even further, that not considering ESG risks would be a violation of their fiduciary duty.

As ESG investing becomes more embedded in the financial sector, investors also are beginning to focus on ESG from an impact viewpoint. This more "purposeful" approach considers ESG factors that affect not just the financial value of the asset but also the investment's impact on wider non-financial environmental and social systems (Gratcheva et al. 2021a).

Sovereign ESG integration relies on creating a comparable framework to evaluate many current or potential sovereign fixed-income issuers. To properly evaluate materiality, the underlying datasets must be available for a large number of countries for an extended time series. Many of the indicators come from the World Bank, UN agencies, or large international non-governmental organizations. Sovereign investors and third-party ESG data providers then aggregate the underlying indicators into indices that attempt to quantify broader concepts of environmental, social, and governance risk factors. Key data challenges include the following:

- **Timeliness:** Many of the underlying datasets used to create sovereign ESG scores come with a significant lag. An analysis of World Bank data found that in 3Q 2020, the median lag (defined as the current year minus the year of data last available) for the social and governance pillars was three years, and the median lag of environmental data was five years (Gratcheva et al. 2021b).

6 See appendix B for a list of papers from sovereign fixed-income asset managers outlining their approaches to sovereign ESG integration.
7 See UNEP FI and PRI (2019) for a legal discussion of fiduciary duty and ESG investing in an international context. Schanzenbach and Sitkoff (2020) provide a more US–focused discussion.

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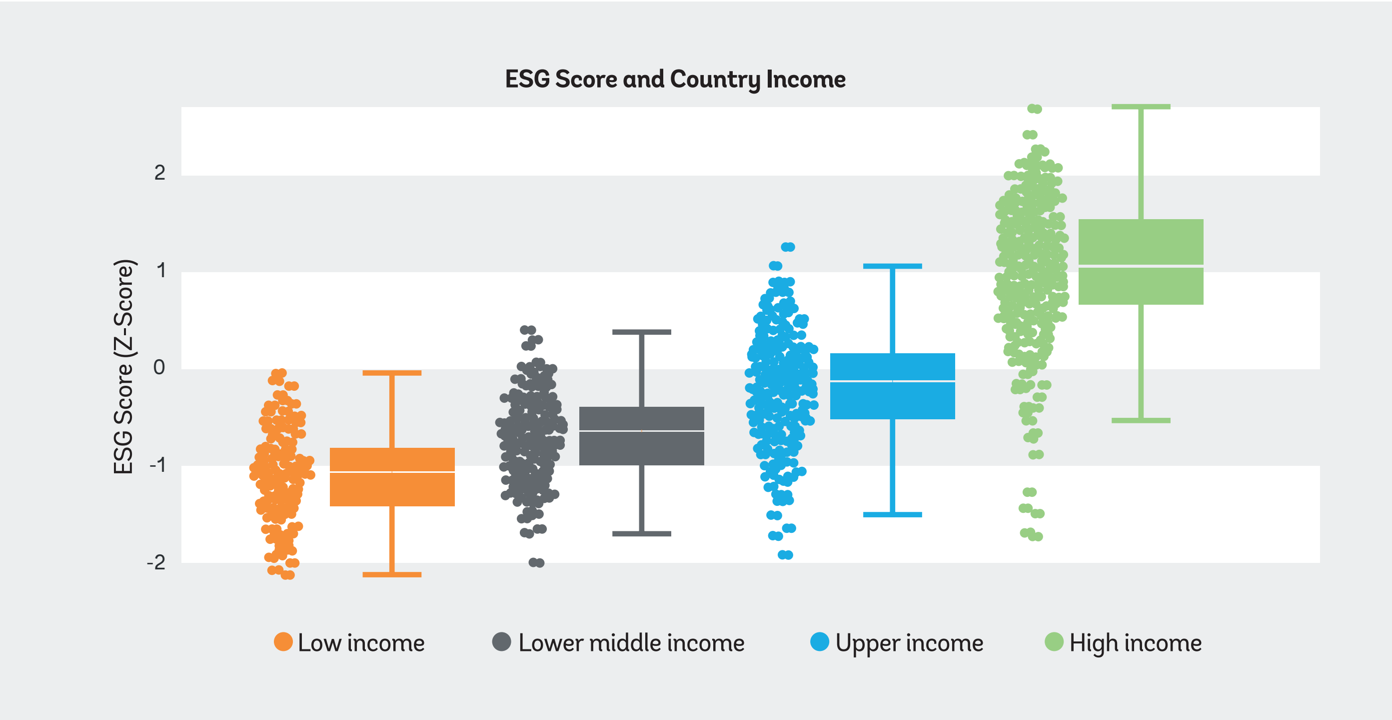
FIGURE 1.4 ESG Scores and Country Income



- **Income bias of ESG scores:** ESG scores from third-party data providers are highly correlated with a country's level of income. This poses a challenge for emerging markets investors because, when aggregated, these scoring mechanisms penalize less-developed countries. Some asset managers have attempted to correct for this by wealth-adjusting scores, or by considering recent performance, or by comparing scores within development peer groups.

- **One-size-fits-all:** Different ESG factors may be more financially material for different countries depending on their level of development, geography, ecosystems, and other factors. Forest cover loss may be very relevant for a country in which timber extraction is a key economic activity, but not relevant for a country that is largely desert. There is a tension between creating a framework that allows for broadly comparable analysis and one that recognizes idiosyncratic risks. In practice, idiosyncratic ESG risks may be more deeply analyzed at the credit analysis stage, while aggregated ESG scoring may be used more at the security level and portfolio level analysis stages.

- **Lack of agreement on environmental pillar:** Considerable disagreement exists regarding what constitutes good sovereign environmental performance among ESG providers. In contrast to the relatively high level of correlation for social and governance pillar scores among providers, there is a markedly less correlation between environmental pillar scores. Reasons for this include environmental data lags, nonalignment of financial and environmental materiality, and the longer time horizon and the nonlinear nature of environmental risks (Gratcheva et al. 2021b).

- **Environmental materiality:** Investors and academic researchers have found it difficult to link environmental factors to sovereign debt performance. In the academic literature, Capelle-Blancard et al. (2019) find no statistical significance of environmental factors on sovereign bond spreads in Organisation for Economic Co-operation and Development (OECD) countries. Margaretic and Pouget (2018) report a similar finding for emerging market bonds. Kling et al. (2018) find that, after controlling for relevant factors, climate-vulnerable countries pay a risk premium on their debt. Moreover, environmental risks are nonlinear and are likely to be much more severe in the future than in the past. This means that traditional approaches that try to find statistical relationships between environmental indicators and sovereign bond performance may be of limited use in assessing ongoing environmental risks. In sum, although some evidence exists that physical risk from climate change may be priced into debt markets, it remains a data challenge for sovereign investors.

SOVEREIGN ESG INDICES AND PASSIVE INVESTING

Investment benchmarks play an increasingly important role in shaping capital flows in the emerging market fixed-income space. Arslanalp et al. (2020) find that rising assets under management of passive funds, the pressure on active managers to avoid tracking errors and to “hug” the benchmark, and the rising number of countries in investment indices have led to more capital allocation than can be explained by investment index weighting alone. The rising influence of benchmark-driven investment means that capital flows can be significantly influenced by index weighting and by external global factors that drive capital flows into and out of the asset class, as opposed to country-specific changes in fundamentals.

In response to the rise of ESG investing, prominent sovereign debt index providers have created ESG-tilted versions of their indices. J.P. Morgan, a prominent index provider for emerging market sovereign debt, has launched the JESG suite of indices, which tilts the weights of its standard indices using ESG criteria. FTSE Russell’s World Government Bond Index (WGBI), which manages a prominent developed-market sovereign debt index, has launched a climate risk–adjusted version of the index.[8]

There is US$28 billion of assets benchmarked to the JESG indices as of March 2021. Adoption of J.P. Morgan’s JESG ESG-tilted emerging market sovereign debt indices has been much stronger in the US dollar–denominated index (Emerging Markets Bond Index [EMBI] Global Diversified) versus the local currency sovereign debt index (Government Bond Index Emerging Markets) and will likely remain that way. As of the end of March 2021, the local currency index only has 19 sovereign issuers, whereas the hard currency index has 73 countries and 168 total issuers (sovereigns + fully government-owned state-owned enterprises). Given the much larger number of issuers, the exclusions and index tilts are less likely to significantly change the investment characteristics of the asset class (average yield, duration, credit rating, etc.). With only 19 issuers, it is difficult to make significant tilts or exclusions without changing the return characteristics. Although local currency funding markets may be more important to many Pacific Alliance sovereign issuers, the impact of ESG indices will for now be mainly felt in the US dollar debt market.

The JESG uses sovereign ESG scores from Sustainalytics and RepRisk, third-party ESG data suppliers, to create ESG scores for all of the issuers in the index. Issuers are then placed into five bands on the basis of those scores. The bottom band of the lowest ESG scores are excluded from the index. The remaining issuer weights will be tilted up or down from the original market-weighted index[9] on the basis of the ESG score band. Green bonds that are certified by the Climate Bonds Initiative (CBI) are automatically moved up to the band level above the issuer. This action is intended to reward issuance of green bonds, and to provide a proactive option for issuers who wish to improve their relative weighting in the index.[10]

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TABLE 1.1 ESG-Tilted Sovereign Debt Indices

Focus	Index Provider	ESG Index Suite	Description	ESG Approach
Emerging Markets	JP Morgan	JESG	The JESG suite of indices provide ESG-tilted versions of J.P. Morgan’s bond indices, including its hard currency and local currency emerging market sovereign bond indices. It recently launched a green bond index, which includes sovereign green bonds.	• Tilts traditional index weights on the basis of ESG scores from Sustainalytics and RepRisk. • Excludes issuers with the lowest 20 percent of ESG scores. • Rewards green bond issuance by giving CBI certified green bonds an index weight boost.
Developed Markets	FTSE Russell	FTSE Climate Risk-Adjusted Government Bond Index Series	FTSE provides climate risk–adjusted versions of its developed market focused sovereign debt.	• Tilts traditional index weights on the basis of climate risk scores from Beyond Ratings, recently acquired by FTSE Russell.

Note: CBI = Climate Bonds Initiative; ESG = environmental, social, and governance.

8 The index uses scores from Beyond Ratings, which was recently acquired by FTSE Russell, that attempt to quantify a country’s exposure to transition risk, physical risk, and resilience risk. Transition risk represents a country’s economic risk related to moving toward emissions targets in line with two-degree climate goals. Physical risk represents a country’s economic exposure to the physical effects of climate change, such as drought, extreme weather, or rising ocean levels. Resilience risk represents a country’s level of preparedness to address climate risk.

9 The EMBI Global Diversified is a market-weighted index, but has a maximum single issuer weight of 10 percent to maintain diversification.

10 The index does not currently provide special treatment for other types of labeled instruments, such as sovereign social or SDG bonds. This may change in the future through J.P. Morgan’s index governance review process in which they consult with stakeholders about issues related to index rules.

Overall, Latin America and the Caribbean sovereign issuers are the largest beneficiary of the ESG-tilted index, with nearly a 10 percent boost in index weight. The biggest losers are the debt of fully state-owned enterprises, many of which operate in oil, mining, or electricity production. State-owned enterprises are nearly 20 percent of the weight of the traditional index but they are only approximately 10 percent of the ESG-tilted index. In Latin America and the Caribbean, Panama and Uruguay get the largest weight boost. Uruguay's weight is almost doubled, from approximately 2.5 percent to 5 percent. Although Mexico's sovereign debt weight is slightly higher, its overall country weight is lower because of the exclusion of the debt of PEMEX, the state-owned oil company, whose ESG score falls into the exclusion band.

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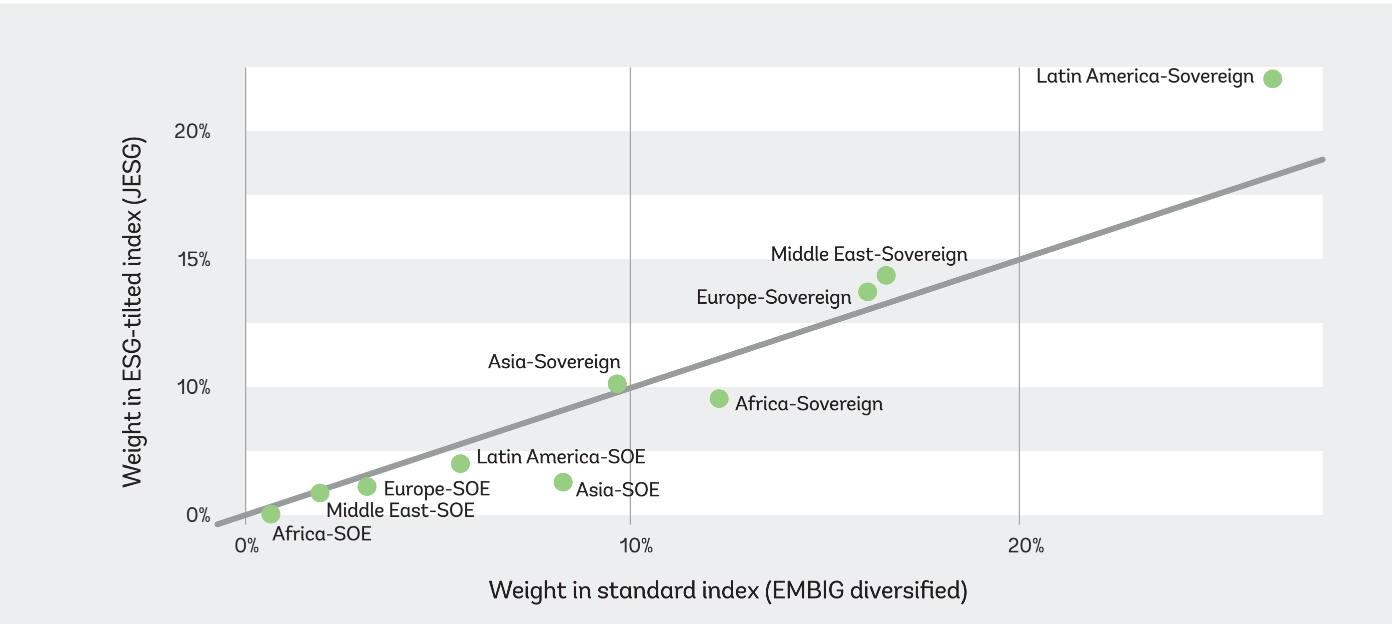
FIGURE 1.5 Regional Weights (Standard vs. ESG) in JP Morgan's Emerging Market Sovereign Debt Indices



Note: EMBI = Emerging Markets Bond Index; SOE = State Owned Enterprise.

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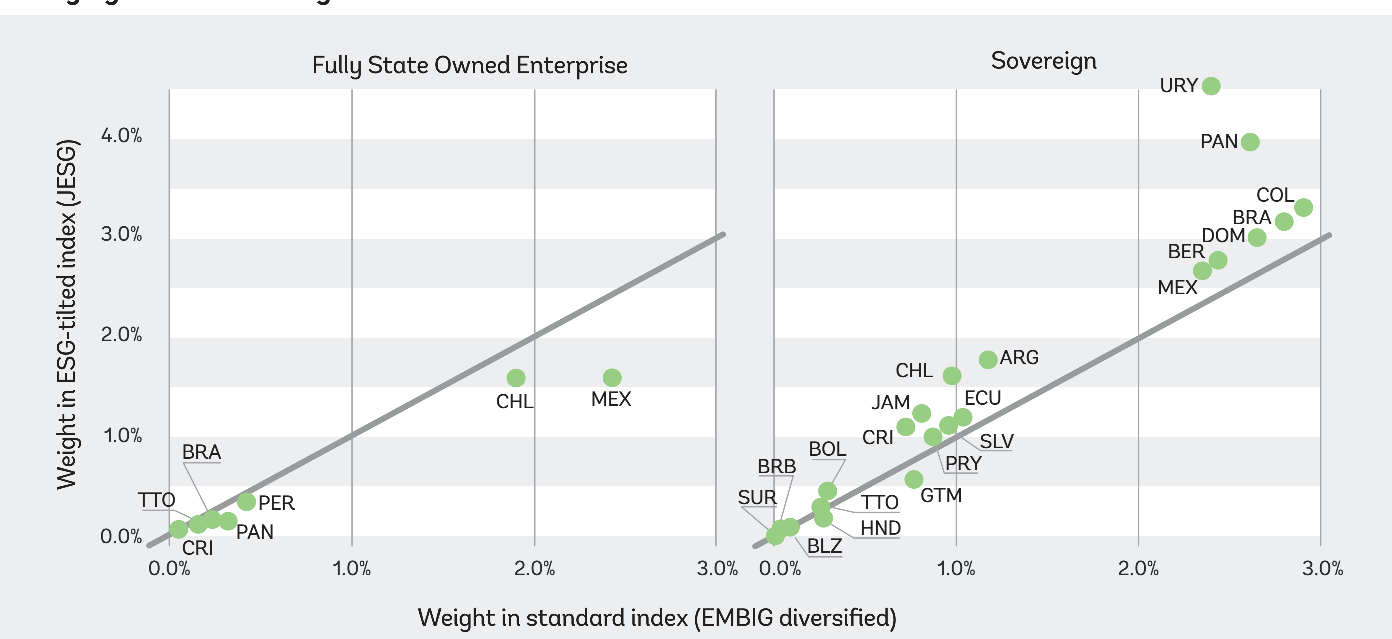
FIGURE 1.6 Country Weights (Standard vs. ESG) for Latin American and the Caribbean in JP Morgan's Emerging Market Sovereign Debt Indices



Note: ARG = Argentina; BLZ = Belize; BOL = Bolivia; BRA = Brazil; BRB = Barbados; CHL = Chile; COL = Colombia; CRI = Costa Rica; DOM = Dominican Republic; ECU = Ecuador; GTM = Guatemala; HND = Honduras; JAM = Jamaica; MEX = Mexico; PAN = Panama; PER = Peru; PRY = Paraguay; SLV = El Salvador; SUR = Suriname; TTO = Trinidad and Tobago; URY = Uruguay.

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TABLE 1.2 Overview of Index Treatment for Green and Conventional Bonds

Instrument	Wgt. % in EMBIG Div.	Wgt. % in JESG EMBI	JESG band
Chile sovereign bonds (total)	0.97	1.61	2
Republic of Chile 2.55% due 32	0.13	0.25	1
Republic of Chile 3 1/2% due 50	0.21	0.40	1

Note: Data as of January 29, 2021. EMBIG Div. = Emerging Markets Bond Index Global Diversified.

The JESG rewards the issuance of CBI-certified green bonds by placing the instrument in the band above the issuer. Chile is in the second highest band (band 2). Because of this placement, the weight of its conventional sovereign bonds in the JESG is tilted higher by approximately 70 percent. Because of the green bond uplift, Chile's sovereign green bonds are placed in the top band. This placement makes the weight of these green bonds nearly twice as large in the JESG versus the traditional index. For issuers already in the top band, a further uplift is not available for issuing green bonds. The JESG excludes issuers in band 5, the lowest band; however, if they issue CBI-certified green bonds, they will be raised to band 4 and included in the JESG index. The implication for Chile and other green bond issuers can be significant, if the JESG is used more widely.

It is important to note that even countries that do not issue sovereign green bonds can still score highly on ESG-tilted indices. For instance, Uruguay is in the highest band of the JESG, but it has not yet issued a sovereign labeled instrument. The sovereign rates highly against the traditional ESG factors that comprise ESG scores.

EMERGING MARKETS FIXED-INCOME ASSET MANAGER VIEWS ON ESG INTEGRATION

A series of semi structured interviews were held with European and North American–based fixed-income investors in August and September 2020.[11] The discussions were held with teams investing in emerging market sovereign bonds, and with teams that have mandates to invest in green bonds and other labeled instruments.

For issuers, gaining a new investor base is likely more important than achieving a "greenium." Although investors tended to believe that under the right circumstances there could be a small pricing advantage for issuing sovereign green bonds versus conventional sovereign bonds, none seemed to believe that it would ever be particularly large because ultimately the bonds share the same credit risk as conventional bonds. What may be more important is the involvement of a new investor base of funds with mandates to buy green and labeled bonds that would not otherwise be involved in emerging market sovereign debt. This involvement could have two positive effects for issuers. First, the new investor base is likely to be less volatile because it has a mandate to hold green bonds and there is less available supply. The capital flow dynamics in and out of these funds may be different than for emerging market bond funds, providing a diversification effect. Second, a new supply of funds into the asset class, all else equal, means that there will be greater competition for sovereign green bonds. This increased competition could become even greater if regulatory changes move toward incentivizing or mandating financial market participants to hold more qualified green and labeled bonds. One investor posited that they believed that instead of creating a significant spread between the traditional and the green sovereign curve (a "greenium"), they believed that this increased competition would be more likely to tighten both curves, thus reducing funding costs for the sovereign across the portfolio.

Because money is fungible, sovereign labeled issuance must align with a national sustainability strategy. Investors see green and other labeled issuance to be a useful tool for sovereign issuers to signal commitment to sustainability targets. However, even if a sovereign issuer has a well-designed green bond program funding sustainability-linked projects, investors questioned whether the debt should truly be considered "green" if at the same time the government pursued other policies that undermined environmental goals through its conventional funding program.

Consequences for issuers that do not follow through on promises. Investors are still uncertain about the consequences

11 Members of the investment teams at Allianz Global Investors, BlackRock, Danske Asset Management, HSBC Asset Management, Neuberger Berman, Nuveen, and PIMCO participated in semistructured interviews with the authors of this report. To elicit frank feedback, investors participated in semistructured interviews with the understanding that while the name of the institution would be included in the paper, no comment would be attributed to a specific participant or firm.

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BOX 1.1 Compliance Risk and Labeled Bonds

The Mexico City (Texcoco) airport green bonds are an interesting example of the inherent "compliance risk" that is part of all labeled instruments. In 2016 and 2017, the Mexico City Airport Trust issued four green bonds totaling US$6 billion to finance the construction of a new airport. At the time, the bonds exceeded the standards of the International Capital Market Association Green Bond Principles and were assigned green instrument evaluations from rating agencies Moody's and S&P and a second party opinion from Sustainalytics. However, in late 2018, the newly elected Mexican government shocked investors when it announced a suspension of the project. The government also announced plans to buyback a portion of the debt but this still left many "green" investors exposed and in breach of their investment guidelines.

Green evaluators involved in the project took immediate action. Moody's lowered its green bond assessment from GB5 (highest score) to GB1 (lowest score), noting that the proceeds (40 percent of scoring) no longer constitute qualifying environmental projects. S&P withdrew its green evaluation report, emphasizing that the residual bonds were different to what had been evaluated at the time of the initial bonds offer. Despite market observers welcoming these steps and some investors appreciating the tender opportunity after their holdings lost their expected environmental benefits, the episode highlighted aspects of the labeled bond market that are sometimes underlooked.

First, this experience has led many investors to place greater emphasis on the verification and reporting aspect of green bond issuances, including the need for external assessors to regularly report back to investors on the development of the projects underlying a labeled bond. Second, because the residual bonds are still classified as green bonds—and are still listed on Bloomberg as such—the integrity of labeled bonds as an asset class is in some ways challenged. Because of experiences like this, some investors now place greater emphasis on their own in-house research while other investors will only consider investing in green bonds in which there is a greater level of transparency on use of proceeds.

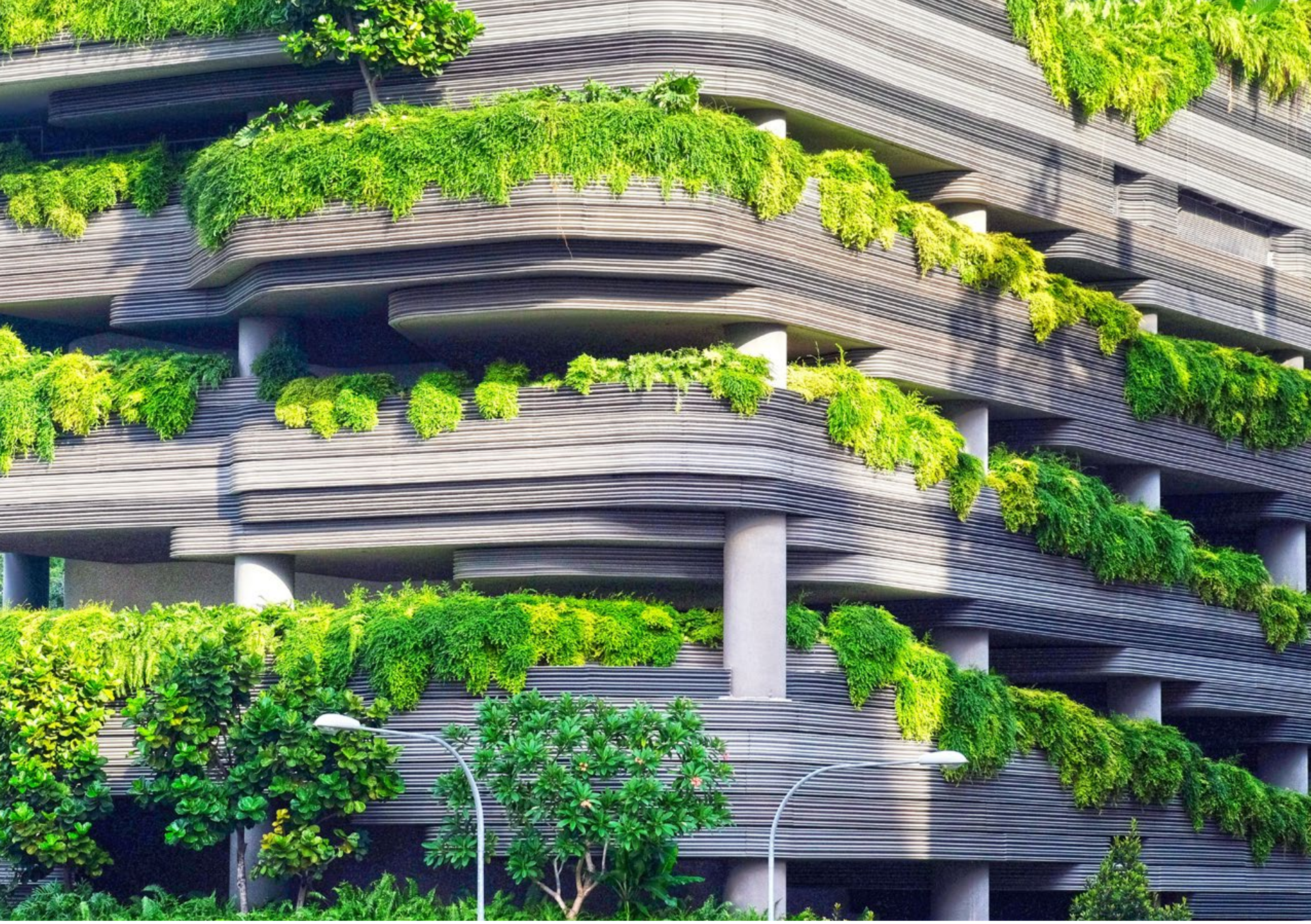
For issuers, this experience—and subsequent market reaction, including negative communication—highlights that issuers should not see labeled issuance as a one-step process because the reporting and compliance obligations will continue throughout the life of the project. In addition, the use of a proceeds model could be a source of difficulty for many sovereign issuers, particularly during periods of market stress and ballooning fiscal deficits. Finally, for regulators, this experience highlights the need for adequate and transparent frameworks. Some investors have also pointed out that key performance indicator–linked instruments could reduce the issues around compliance, but here also are issues that would need to be resolved—most pertinently, the choice of the performance indicator.

for sovereign green bond issuers that do not follow through with obligations or promises as outlined in their issuance documentation (for example, green or social bond framework). This failure to follow through can include both when issuers do not follow through on the projects promised in the green bond issuance documentation, or when a sovereign takes parallel actions elsewhere that undermine its national sustainability strategy. In many cases it would be unclear if any legal recourse would be available.[12] Investors said that they would weigh reducing exposures and that they would likely engage with the issuer. There was a belief that these actions would be more effective if they were done collectively by a group of bondholders, but there is not yet enough clarity about the modalities of such collective action.

Certification matters more to managers that do not have dedicated labeled bond teams. The asset managers that had dedicated teams for evaluating green bonds tended to care more about whether and how a green issuance fits into the sovereign's climate framework rather than whether it had a third-party certification. Other investment teams that did not have that capacity found third-party certification to be helpful because they did not have the time nor the expertise to investigate this on their own. One investor mentioned that they particularly valued European green bond certification because they believed that there may be legal ramifications for mislabeling.

Multiple investors noted the importance of clear, well-defined use of proceeds for sovereign labeled bonds. At the current stage, the supply of labeled bonds is limited, and some investors have investment mandates to buy them that are challenging to fill, so some issuers have been able to get away with vague commitments. But if continued supply of labeled issuance changes this scarcity issue, large dedicated investors will likely demand greater clarity on use of proceeds before agreeing to buy new issues.

12 In some cases, the bond prospectus now incorporates clauses that outline legal recourse for investors in situations in which issuers have abrogated their obligations as defined in those documents.



Some are taking a cautious approach toward sovereign labeled bonds beyond green bonds (social bonds, Sustainable Development Goal bonds, etc.). Green bonds, while relatively new in the sovereign space, have become a larger and more mature instrument. Some investors expressed caution when approaching new labeled instruments such as social bonds. Though new frameworks have been developed for these instruments, there is still a relative lack of precedent about best practices. Investors are worried that sovereigns could use instruments such as social bonds to cover recurrent expenditures if not properly targeted.

Lack of regulatory coordination. China, the European Union, and the United States are all taking slightly different regulatory approaches toward sustainable finance.[13] The European Union has been the most proactive based on the EU Action Plan for financing sustainable growth. However, investors noted that even within the European Union, national regulatory bodies in various countries have taken different, and sometime contradictory, approaches. China has created its own green taxonomy that differs from the European Union, although work is ongoing to increase harmonization. Some Latin American sovereign issuers, such as Mexico, have responded by building frameworks that incorporate elements of the European and Chinese approaches.

US dollar versus euro versus local currency issuance. The decision to issue in US dollars or euros is driven by various considerations including funding needs, investor demand, cross-currency basis dynamics, as well as borrowing costs. However, in relation to sustainability issues, there are some key considerations. First, the JESG EMBI Global is for US dollar–denominated instruments. There is no euro version of the index. Therefore, index inclusion is a key element that should be considered for sovereign green bond issuance. On the other hand, European investors have been faster to embrace sustainability issues, so euro issuance may be a tool to access a new sustainability-focused investor base. Global investors expressed more comfort in hard currency labeled issuances, all else being equal.

13 See OECD (2020) for a review of regulatory approaches to ESG across jurisdictions.

The World Bank recently developed a public debt management (PDM) ESG framework to support sovereign decision-making in response to the evolving investment landscape reviewed above. The PDM ESG framework aims to help debt managers weigh different options on how to engage with growing global interest in ESG assets. The framework outlines three key ESG activities that sovereign debt managers can engage in: (a) ESG-related borrowing instruments, (b) increased sovereign ESG engagement with investors and other stakeholders, and (c) leveraging the special position of the debt management office (DMO). For the most part, these activities relate to the main mandate of government debt management.[14] The activities are not exclusive and may overlap in various areas depending on the specificities of each country context.

The framework takes note of five ESG market readiness factors that should be considered by debt managers before deciding whether to engage in any or all ESG activities. These "ESG market readiness factors" relate to the level of market development of each sovereign debt market. Though the attainment of these readiness factors is not a prerequisite for ESG market development, an advanced stage of ESG readiness does provide the most supportive backdrop. However, in some markets, political mandates may dictate various decisions. The relevant importance of the identified ESG readiness factor tends to differ depending on the ESG DMO activity as well as the specificities of the specific market.

Enabling environment

The enabling environment is fundamental to the decision on whether and how a DMO should integrate ESG activities into its operations. Many enabling conditions are also of fundamental importance for development of the general bond market, such as general macroeconomic conditions, adequate financing needs for the government, debt management capacity, and financial sector soundness. Some enabling conditions may, however, be specifically important for developing various PDM ESG activities. These conditions would include political commitment, supportive policies, good governance, regulation, and tax regimes, among others. A supportive financial sector that

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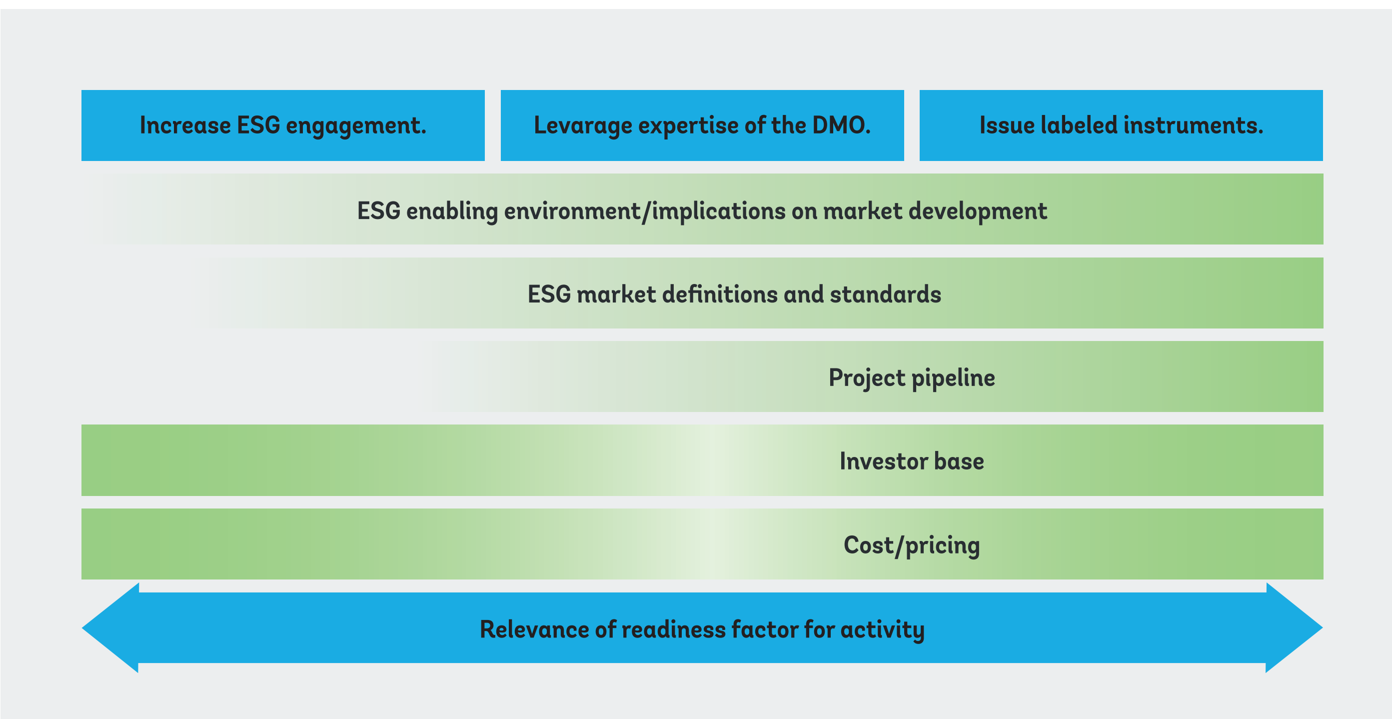
FIGURE 1.7 ESG Market Readiness Factors and Their Relative Importance for Different ESG Activities



Source: World Bank staff illustration; Boitreaud et al. 2020.
Note: DMO = debt management office; ESG = environmental, social, and governance. Darker color indicates increased importance.

14 According to the World Bank-International Monetary Fund guidelines on public debt management, the "main objective of PDM is to ensure that government's financing needs and its payment obligations are met at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk."

has knowledge of and experience with fixed-income instruments is also important. This type of support includes a supportive banking sector and domestic institutional investor base; it also includes capacity within the local financial system in relation to sustainable finance. The stage of market development is an important consideration for DMOs considering ESG activities. In general, countries in which sovereign bond markets are at a more nascent stage of development will not meet all of the ESG market readiness factors, while more developed markets will have more legroom.

Definitions and Standards

Clear market definitions and standards are important for ESG investing because there is a lack of international standards. Credible and widely supported guidelines, standards, and independent reviews help investors make informed decisions. The establishment of national definitions and standards, such as a taxonomy for the financial or real sectors, is not an easy feat, although there are several excellent country templates around the world that can be adapted for local circumstances. Whether driven by the public or private sectors, market development committees have a key role in driving agendas.

Project Pipeline

The management of the use of proceeds of labeled instruments is an important aspect of bond issuance and requires rigorous planning. Most governments must first adopt or adapt an existing green taxonomy to identify eligible sectors and activities. Then "Eligible Projects" for which the proceeds of labeled bond issuances can be used by government ministries are identified, each falling into an "Eligible Sector," including renewable energy, clean transportation, national parks, landfill rehabilitation, and afforestation. In some countries, the lack of eligible projects can be a major limiting factor in issuing labeled instruments.

Investor Base

The DMO must pay attention to the investor base, including both existing investors as well as considering opportunities to further diversify the investor base and tap new investor demand. Index investing is still the primary driver of allocations to EM debt—and smaller bond markets can struggle to attract foreign investor flow for various reasons. Demand for local currency labeled bonds can be more sporadic—but for larger sovereign

issuers, it could present opportunity. Indeed, in some larger markets, a labeled local currency bond issued via domestic syndication (for example, in the same way as a eurobond) could be an attractive proposition for foreign investors. In many cases, however, investor demand for hard currency issuance may be more forthcoming—and if the DMO was to issue in foreign currency, it must be cognizant of how this will fit into the debt management strategy.

Cost and Pricing

The cost of different ESG activities and any potential pricing benefits from labeled bond issuances are important considerations. The cost of not engaging on ESG issues could be a consideration for the DMO. As mentioned, although in general such factors are not a key driver of the cost of sovereign borrowing, the risks could be increasingly priced into sovereign borrowing costs (dependent on the ultimate climate change scenario). These dynamics provide a rationale for the DMO to continue to actively engage with investors on ESG issues.

Implementing ESG activities other than the issuance of labeled bonds will also involve costs, although those costs may also be incurred in the pursuit of normal bond market development. Increasing investor relations coverage is likely to be part of a larger-scale debt management strategy to diversify the investor base, while increasing governance and a firmer institutional setting are fundamental to normal market development.

Sovereign issuer decision-making can have an important signaling effect on the wider financial sector. As an important institution in any financial system, the DMO's actions on ESG can have an important ripple effect on the wider financial system. In this regard, the issuance of labeled instruments could support the development of a more robust labeled corporate bond market, while other DMO activities like integrating ESG criteria into a DMO's risk management practices or as one of the criteria for primary dealer selection, though largely symbolic, can act as an important signal to the wider financial system that mindsets are changing and society collectively must embrace a more sustainable future.

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Chile: Sovereign Issuer Options, Opportunities, and Challenges

As the first sovereign in the Americas to issue a sovereign green bond, Chile has been proactive in signaling the seriousness of its intentions to address climate risks through policy tools. In 2019, Chile became the first country in the region to issue a sovereign green bond; in 2020, Chile issued the region's third sovereign social bond.[15] Other governments in the region, including Mexico, have subsequently either issued labeled instruments or have announced plans to do so in the near future.

The following case study of Chile's experience catalogs the context that gave rise to the sovereign's decision to issue labeled instruments; identifies the benefits and costs of having done so; and extracts practical lessons-learned from the experience that can also be helpful to other sovereigns.

THE ENABLING ENVIRONMENT: CHILE'S MACROECONOMIC CONTEXT, DEBT STRATEGY, AND STAGE OF MARKET DEVELOPMENT

The issuance of sovereign green bonds is one element of a wider debt management strategy that is in turn a function of a given level of public debt. Before detailing the characteristics of the green bond framework adopted by Chile, it is worthwhile to present recent developments related to Chile's government debt and borrowing strategy designed to ensure its financing at a reasonable cost and within prudent risk levels. This section will highlight how the decision to issue green bonds was closely aligned with the government's strategy and policy objectives, as well as the country's stage of sovereign debt market development. This perspective could also help assess how Chile's case for issuing labeled bonds can be relevant for other sovereign issuers in the Pacific Alliance.

From the beginning of the 1990s until 2007, Chilean government debt declined significantly. In 1990, with net central government debt at close to 45 percent of gross domestic product (GDP), the government committed to stronger fiscal austerity, which led to a progressive reduction in the debt level, supported by the macroeconomic environment. In 2001, the government implemented its Structural Balance Rule, which at that time consisted of achieving a structural fiscal surplus of 1

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15 Ecuador issued the world's first sovereign social bond in January 2020. For more information, see https://www.iadb.org/en/news/ecuador-issues-worlds-first-sovereign-social-bond-support-idb-guarantee.
Guatemala issued the region's second sovereign social bond in April 2020. For more information, see: https://www.nasdaq.com/articles/guatemala-draws-us%248bn-in-demand-for-two-part-us%241.2bn-bond-2020-04-21.

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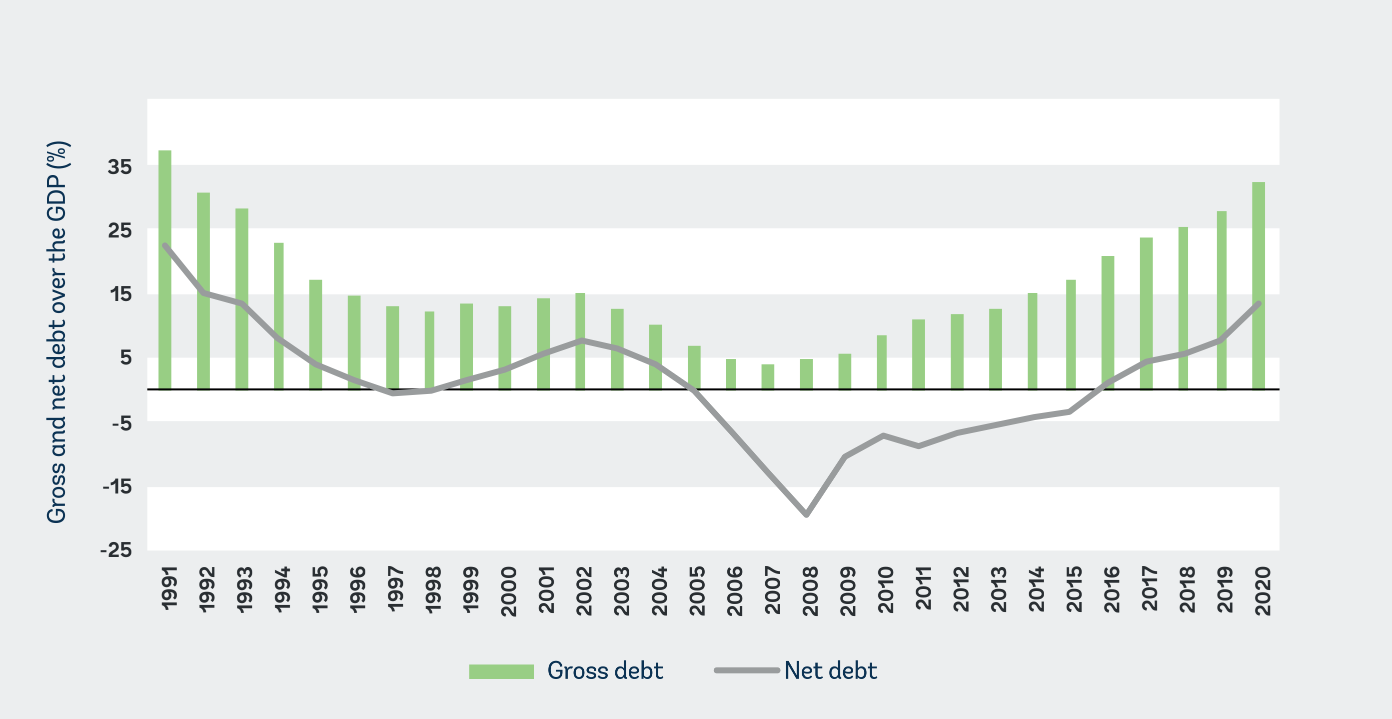
FIGURE 2.1 **Gross and Net Debt of the Central Government of Chile, 1990–2020**



Source: Chile, Ministry of Finance data, 2021.

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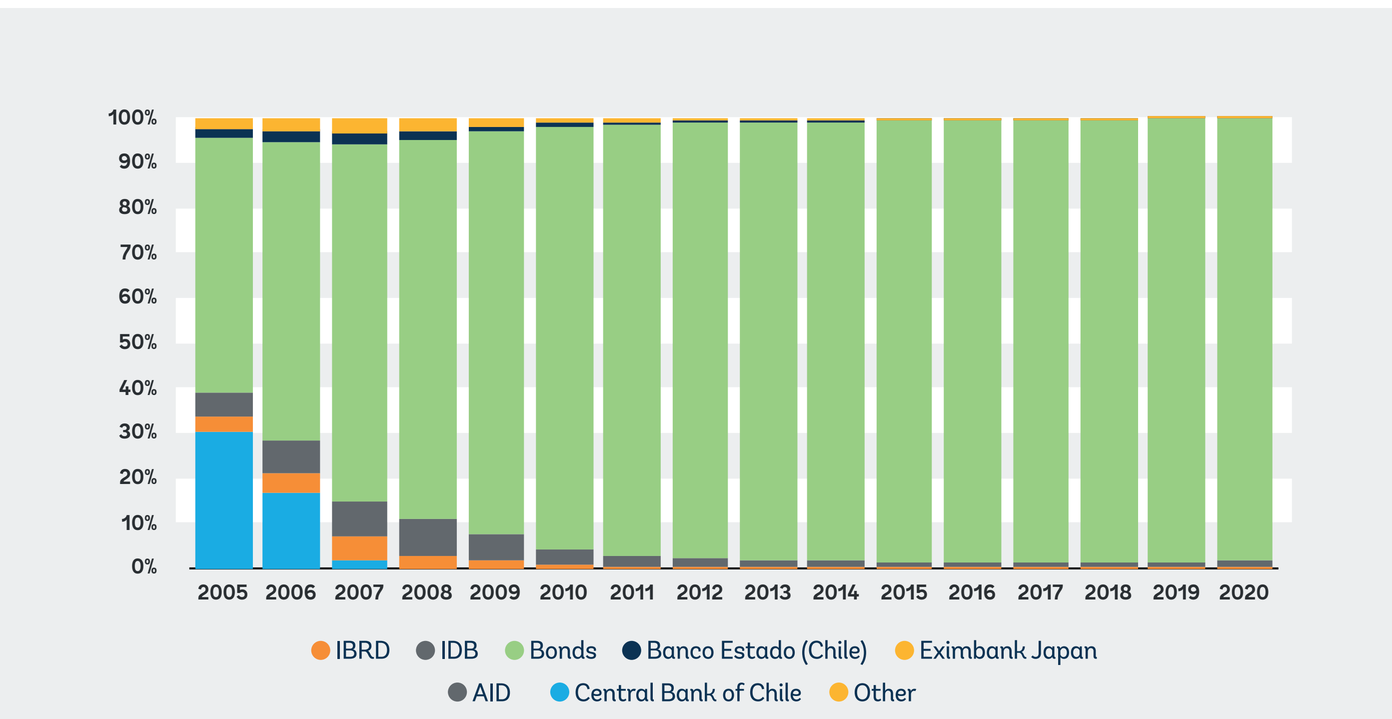
FIGURE 2.2 **Chile's Central Government Debt by Creditor**



Source: Chile, Ministry of Finance.
Note: IBRD = International Bank for Reconstruction and Development; IDB = Inter-American Development Bank; AID = Agencia Internacional para el Desarrollo.

percent of GDP per year. As a result, together with the increased income coming from the high copper price at the beginning of the decade, the structural balance rule contributed toward a gradual yet significant reduction in gross public debt, which hit a historic low of 3.9 percent of GDP in 2007.

Since 2008, public debt has been increasing progressively. With the global financial crisis, Chile's fiscal situation deteriorated as public spending rose to address the consequences of the global slowdown. This trend was compounded by the cost of reconstruction after the 2010 earthquake. As a result, the Structural Balance Rule was revised and, in 2019, central government gross debt rose to nearly 28 percent of GDP. The net fiscal position of the central government became negative in 2016 and reached almost −8 percent of GDP in 2019,[16] as illustrated by figure 2.1. The situation continued to deteriorate through 2019, as social unrest broke out in Santiago, and into 2020 when the COVID-19 crisis hit Latin America. As a result, the government had to carry out unconventional fiscal policies that have continued to increase fiscal spending and public debt.

Given the stage of development of the economy and the capital markets, government securities (bonds) have been the main channel of government borrowing.[17] As illustrated by figure 2.2, the already modest share of multilateral and bilateral loans has almost completely disappeared and the debt of the Central Bank of Chile has been settled. As of now, close to 100 percent of the central government debt is composed of securities, anchoring the need for efficient and smooth government debt markets.

The focus on bonds has occurred in parallel to an early consideration of the role of government securities in supporting domestic capital market activity. Although the main objective of debt management is to fund the government at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk (IMF and World Bank 2014), the development of an efficient domestic capital market is often considered an important secondary objective. This specific objective is at the core of the debt strategy set by the Ministry of Finance in Chile, which maintains a core focus on the "fundamental task [to] nurture and complete the relevant yield curves for the economy on a continuous basis" (Ministry of Finance 2012). The price references established by the government in its bond issuances are a strong support for establishing a domestic yield curve benefiting the rest of the market, including other public sector entities and corporate issuers. These objectives have remained relevant until now, with the more recent addition of external debt and environmental, social, and governance (ESG) assets, as summarized in box 2.1.

To achieve these objectives, in 2003 the government embarked on a benchmark building policy, giving important consideration to the choice of currency and instrument type. Establishing an effective yield curve requires a commitment to regularly issue a number of securities of a given maturity to sufficiently support liquidity in the secondary market and ensure efficient pricing; this is no small challenge when the gross government debt is low. The government first began its benchmark building policy with a 20-year benchmark bond indexed to inflation (Unidad de Fomento; UF), adding, in subsequent years, a 10-year reference for UF and a 10-year reference for fixed-coupon (nominal) bonds. Maturities were progressively extended in both inflation-indexed and nominal yield curves (see box 2.2). These references were chosen to reflect the demand of the domestic investor base, with the domestic pension funds (Administradoras de fondos de

> > >

BOX 2.1 Debt Management Objectives in Chile

Domestic: To develop and lengthen yield curves (nominal and real) while deepening liquidity by fostering greater participation of nonresidents. Recent issuances have strengthened new benchmarks and have created longer tenors, extending the debt maturity profile in line with international standards.

External: To establish benchmarks for Chilean companies in international capital markets.

Environmental, social, and governance: To promote the development of a green asset class (social/green bonds) that attracts foreign investment in support of the country's sustainable infrastructure needs, while diversifying the investor base.

General: Strong commitment with depth and liquidity.

Source: Chile, Ministry of Finance 2019c.

16 IMF and staff report on the request for an arrangement under the Flexible Credit Line, May 2020.

17 Gross central government debt is a relevant metric to assess the potential size of a government debt market. Gross central government debt represents the maximum volume of government securities that can be traded at a given time. The real amount is usually lower because governments can also borrow through other channels such as loans.

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BOX 2.2 Benchmark Issuance Policy

To optimize the liquidity of its securities, Chile focuses on a set of key benchmark maturities that both reflect investors' demand and the government's own objectives (see figure B2.2.1):

- On the nominal curve in local currency: (approximately) 5 years, 10 years, 20 years, and 30 years.
- On the real curve (Unidad de Fomento) in local currency: (approximately) 5 years, 10 years, 20 years, and 30 years.

The redemption profile of Chile's domestic debt illustrates the result of this policy with a relatively small number of reference points associated with large individual volumes.

These maturities are not rigid and can evolve to adjust to market developments, as is the case in 2020 with a focus on shorter tenors (Treasury bills with maturity below one-year and five-year nominal bonds).

The average term-to-maturity of Chile's domestic debt remains at 12 years—among the longest in the Organisation for Economic Co-operation and Development. The current (and hopefully temporary) focus on shorter tenors has not changed this situation.

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FIGURE B2.1 Chile's Central Government Debt Redemption Profile

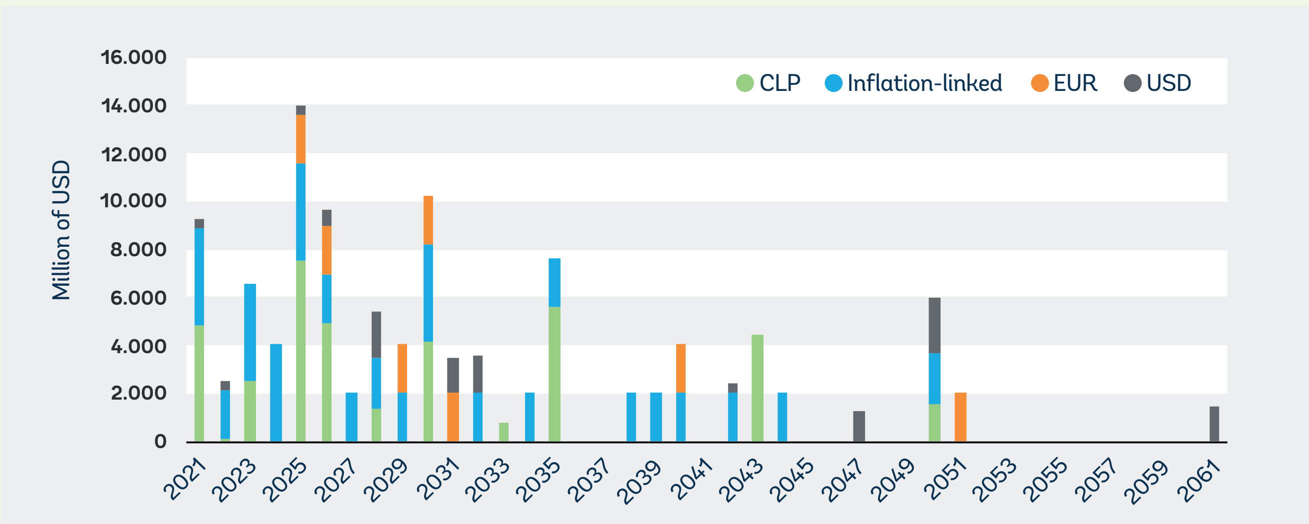

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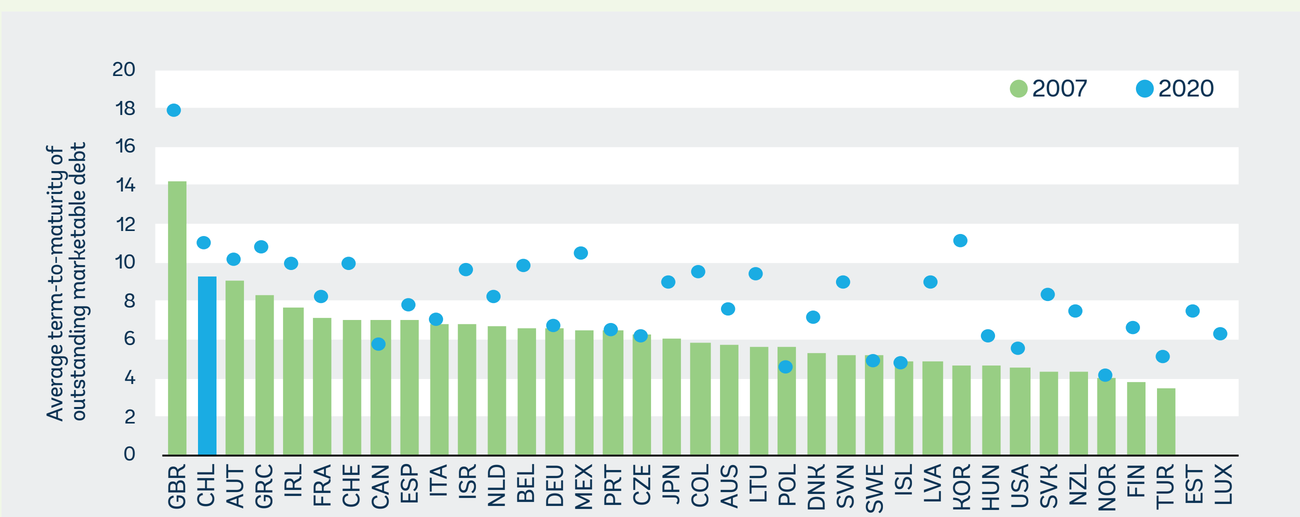
FIGURE B2.2 Average-Term-to-Maturity among Selected Countries



Source: Chile, Ministry of Finance 2021.

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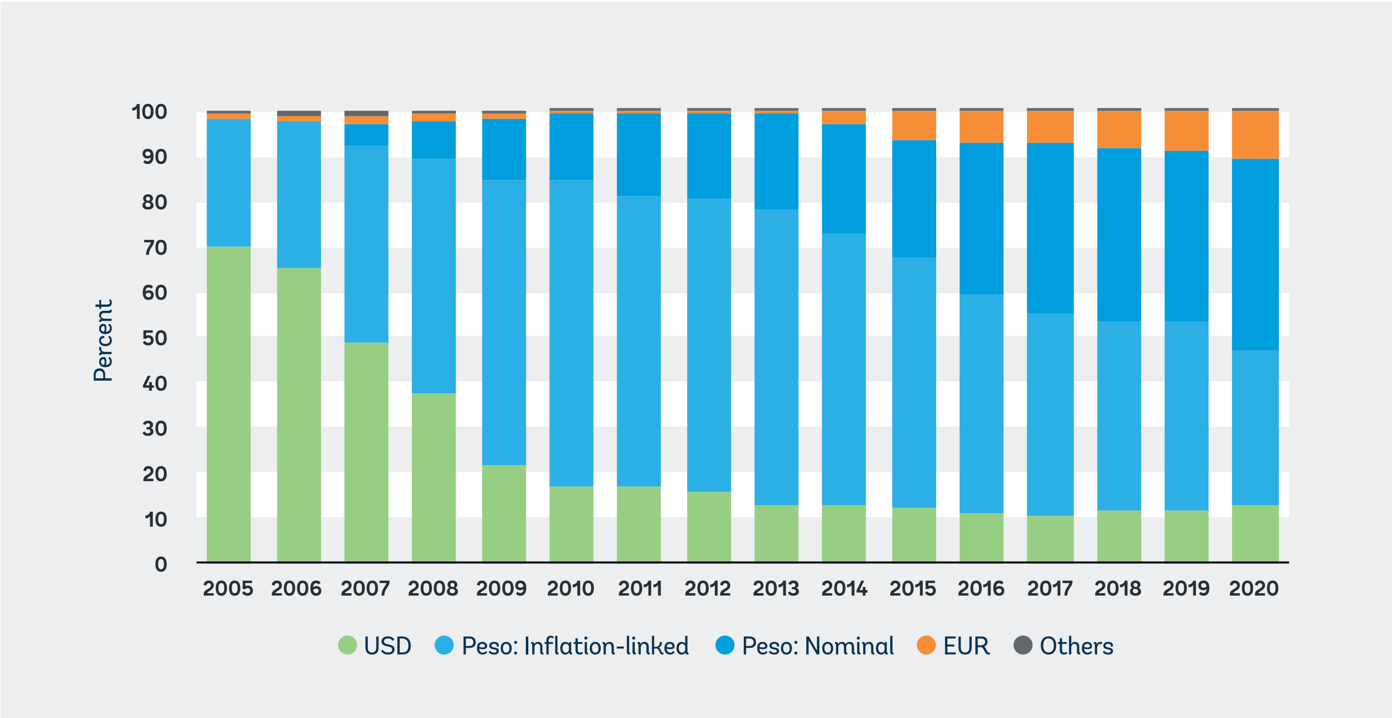
FIGURE 2.3 Chile's Central Government Debt Composition



Source: Chile, Ministry of Finance data, 2021.
Note: UF = Unidad de Fomento.

pensiones; AFP) playing a large role since the pension reform of the 1990s (see box 2.2). With the diversification of the investor base and the strong track record of the central bank on inflation, the share of nominal bonds has regularly increased, reaching close to 50 percent in 2020, compared with only 18 percent at the start of the decade, as shown in figure 2.3.

External bond issuances were added in 2010 with the objective of providing an additional reference for Chilean non-government issuers. Given the low level of government debt and the large base of domestic investors, the government did not need external sources of funding but, nevertheless, it decided to issue bonds in international capital markets to provide a reference for other Chilean borrowers, consistent with its strategy to support the domestic capital market. The first international issuances in 2010 were in US dollars and in local currency.[18] The euro was added later because the Chilean government decided to change the composition of its foreign currency debt in 2014 to diversify it away from the US dollar to reduce borrowing costs and to increase market depth while opening up new markets for the private sector. As can be seen from figure 2.4, the share of foreign public debt in euros went from just 2 percent in 2013 to 42 percent in 2019.

The government also developed a strategy to attract foreign investors in the domestic debt market by increasing the liquidity of key benchmarks. This development happened in 2014 at the same time the Ministry of Finance decided to diversify the foreign currency composition of its debt portfolio. To this end, various measures were taken on several fronts: strengthening of the benchmark policy with fewer auctions but with larger volumes in each, more regular communication with investors, discussion with global index providers about the inclusion of domestic nominal bonds, simplification of the tax regime on capital gain exemptions (Article 104), and adjustment of settlement dates to align with international standards after two business days. In 2016, the first liability management operation (LMO) was implemented, buying back off-the-run bonds and increasing the auction of benchmark securities. LMOs are now a regular fixture of the government debt strategy. Another step was the issuance in 2017 of Chile's first domestic Euroclearable bond[19] through syndication for Ch$1 trillion (about US$1.5 billion). This strategy proved successful because foreign investors now represent more than 15 percent of domestic debt (figure 2.5), while Chile's share in J.P. Morgan's Government Bond Index for Emerging Markets (GBI-EM) increased from 0.10 percent in 2016 to 2.7 percent in 2020 with a peak at 3.2 percent in 2018.[20]

18 This was to respond to the demand from foreign investors to get an exposure to Chile's credit in local currency at a time when direct participation of these investors in the domestic debt market was not developed.
19 International investors were able to hold a direct interest in the bonds through Euroclear, as participants to the local clearing system DCV.
20 On a monthly basis, the peak was 3.3 percent in August 2019.

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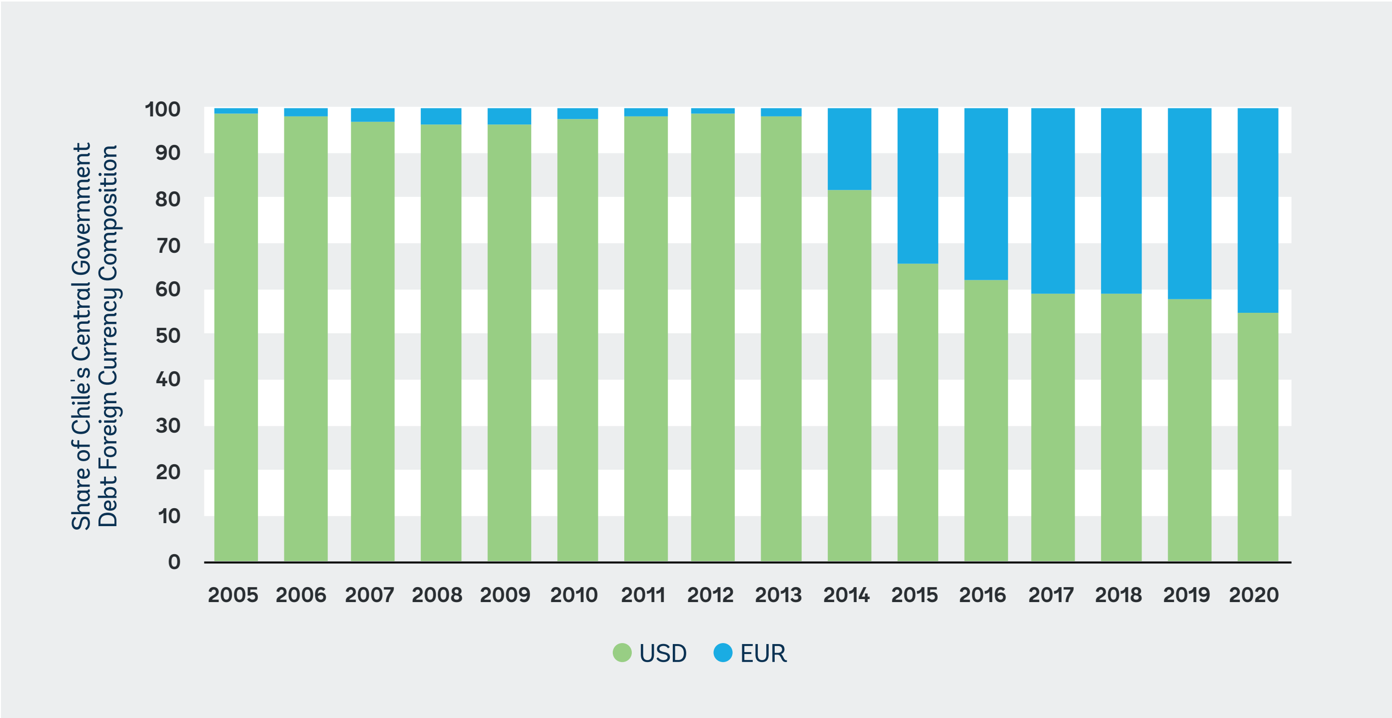
FIGURE 2.4 **Chile's Central Government Debt Foreign Currency Composition**



Source: Chile, Ministry of Finance data, 2021.

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FIGURE 2.5 **Share of Chile's Local Government Debt Held by Nonresidents**

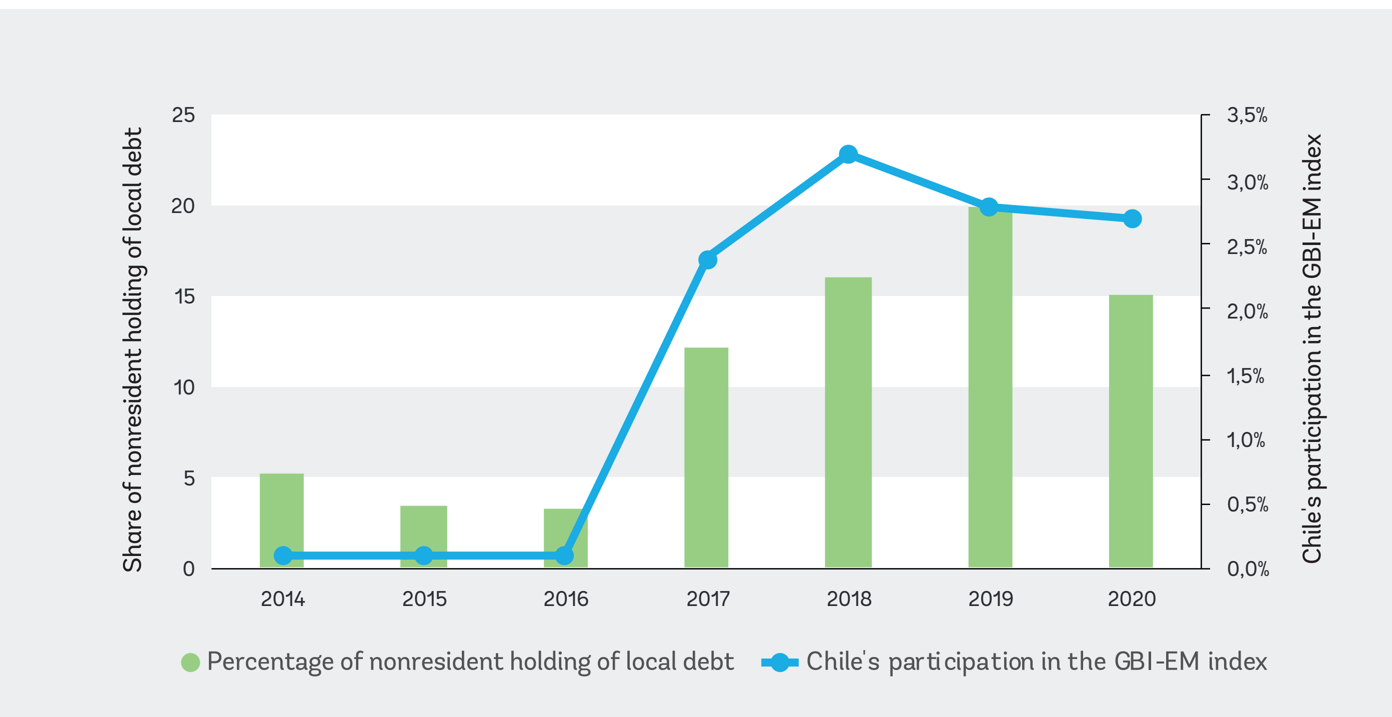

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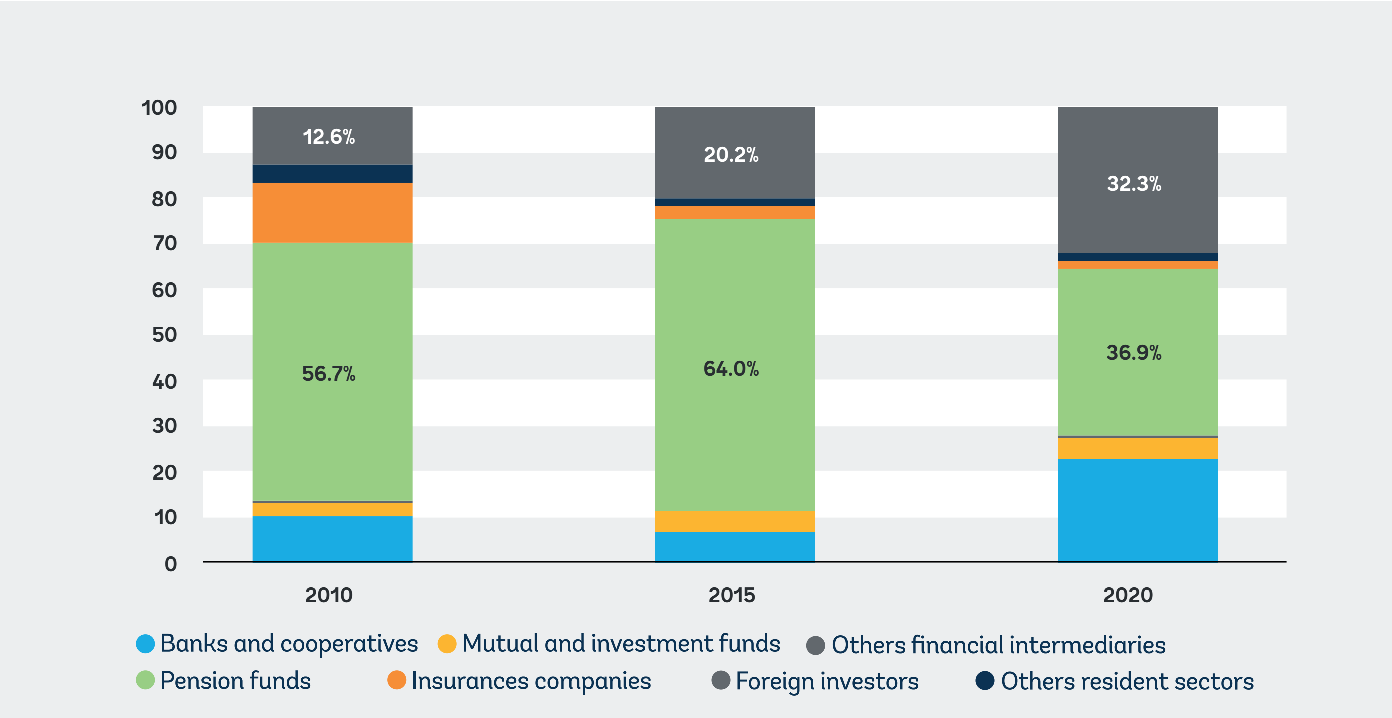
FIGURE 2.6 Holders of Chile's Central Government Debt, 2010, 2015, and 2020



Source: Central Bank of Chile data, 2021.

Pension funds, foreign investors, and banks are the main holders of Chile's sovereign debt. As of June 2020, these groups hold more than 90 percent of Chile's government debt.[21] Historically, pension funds have been a main buyer of Chilean government debt, holding 40.3 percent. However, in recent years, pension fund participation in the sovereign debt market has gradually reduced due to the increased share of other market participants. For example, in 2015, pensions funds accounted for 64 percent of government debt while today they account for only 40.3 percent. Following pension funds, the main holders are nonresidents and banks with a total share of 35.3 percent and 17.2 percent, respectively. Insurers, investment funds, and mutual funds only hold a small percentage of sovereign debt, totaling a share of 5.4 percent.

Chile's sovereign debt market has become increasingly attractive for foreign investors. After the subprime crisis, the nonresident share of general government's debt reached a decade low of 9.4 percent. Since then, in part because of the government's efforts to broaden the investor base, the sovereign market has become more attractive for nonresidents and the share of foreign investor debt holdings has progressively increased, reaching 35.3 percent in June 2020. It is important to note, however, that most of this increase comes from debt bought in foreign currency. In June 2020, out of the 35.3 percent of foreign investors' share, 25.7 percent corresponds to debt in foreign currency, while the remaining 9.6 percent corresponds to domestic markets. Although the latter still remains a small share, it has been gradually increasing, from 4 percent in 2015 to 9.6 percent by June 2020.

21 Government debt refers to general government gross debt. In accordance with the definition of the System of National Accounts 2008, general government debt corresponds to the central government debt plus the municipalities' total debt. This excludes public corporations and the Central Bank. Based on the Quarterly General Government Debt Statistics Report, in Chile, central government debt has historically accounted for most of the general government debt. In particular, as of June 2020, 99.9 percent of general government debt corresponds to central government debt, while the remaining 0.1 percent corresponds to municipalities' debt.

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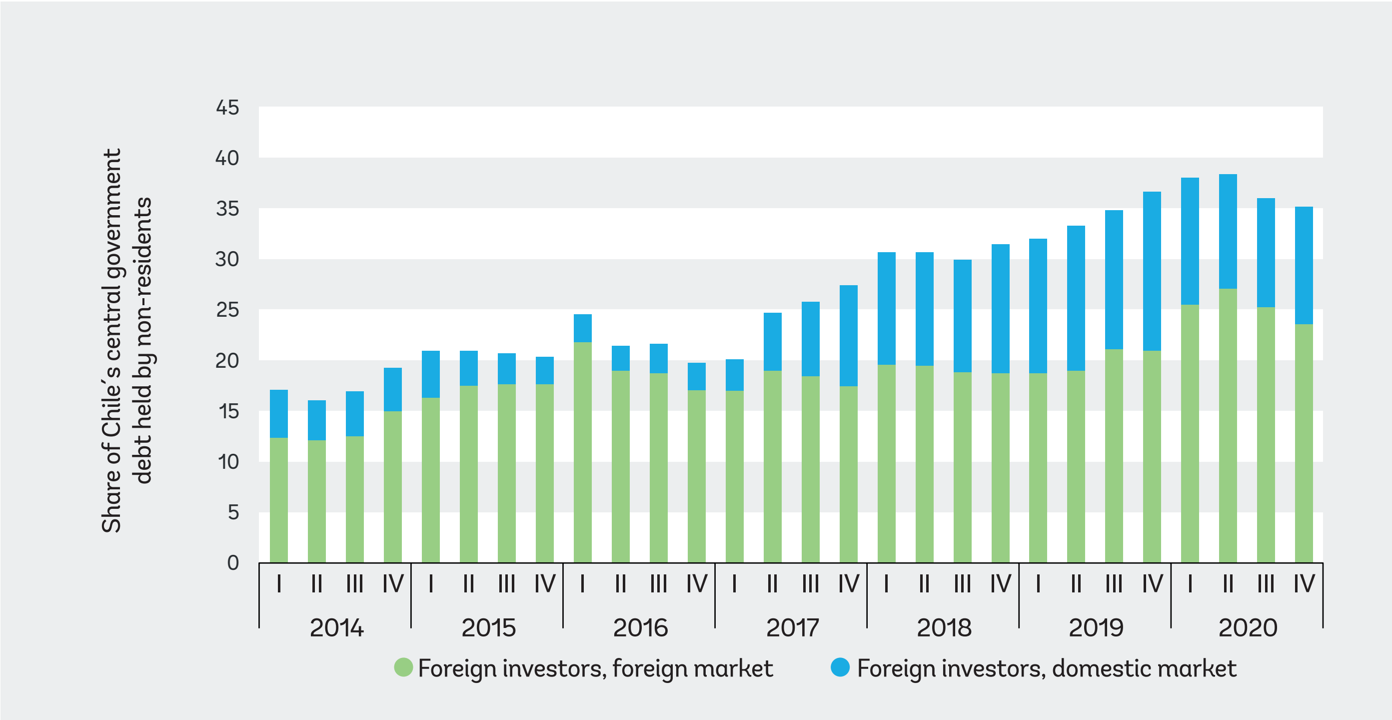
FIGURE 2.7 **Nonresident Holdings of Chile's Central Government Debt**



Source: Central Bank of Chile.

CHILE'S SUSTAINABLE FINANCE AGENDA

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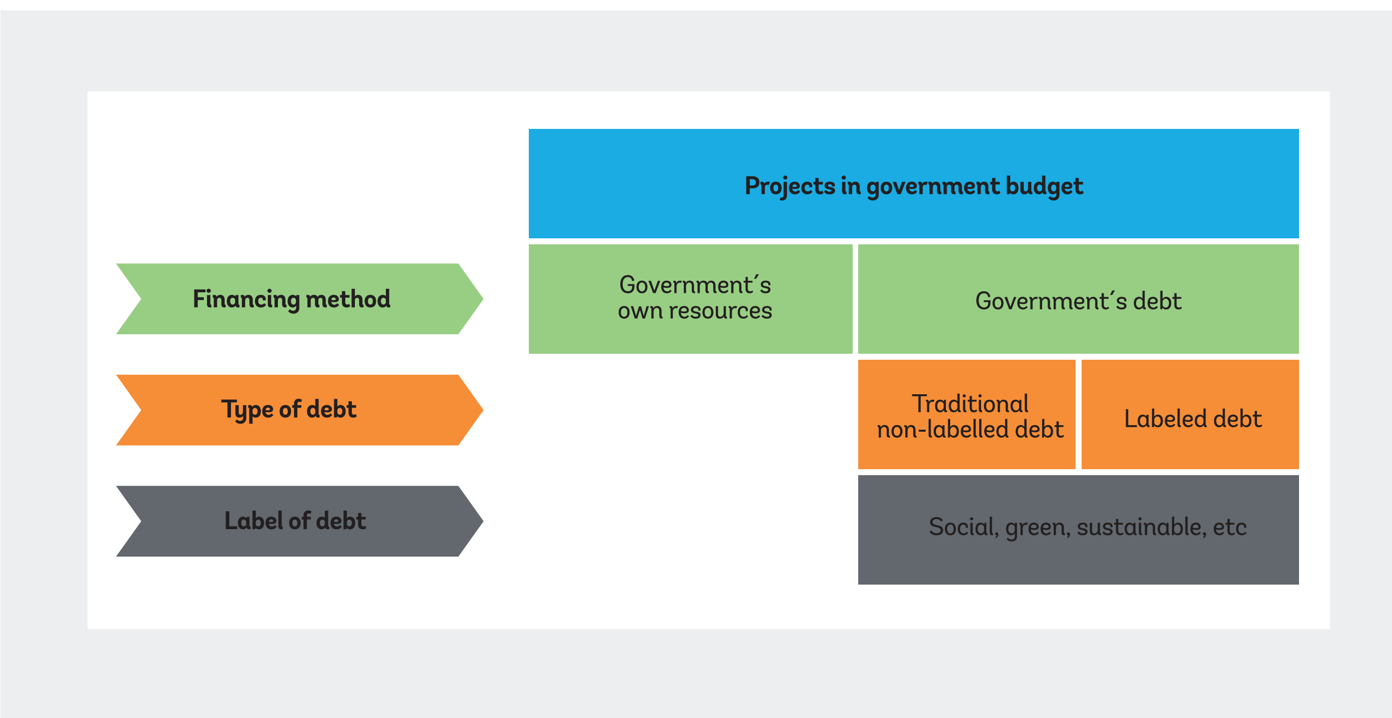
FIGURE 2.8 **Projects in Chile's Government Budget**



To evaluate the convenience of issuing a green bond, the Chilean government first evaluated the different projects approved to be financed by the central government. First, the government identified which projects needed financing, either through the government's own resources or the issuance of sovereign debt. For example, for Chile's first green bond issuance, 80 percent of the proceeds of the bond were allocated to finish the construction of line 3 of the Greater Santiago metro system and extend line 2.[22] However, the construction of the metro was already a part of the government's project portfolio, and therefore, had already been included in the central government's budget, to be financed in 2019. As a result, the government's decision rested on whether to finance the project using the government's own resources or through the issuance of sovereign debt. Other important factors that were considered were the total cost of the project (the government only considered projects above a certain minimum cost) and the ease with which impact information related to the project could be reported subsequent to bond issuance.

Once the decision to issue sovereign labeled debt was made, the government had to assess whether there were enough eligible projects in the budgeted pipeline. Pipeline projects included only those that had been previously agreed on by the relevant sectoral ministries, the Budget Office, and the Ministry of Finance. Because of the high demand for labeled bonds by global investors and the positive reception of other sovereign green bonds by those investors, the Chilean government had a growing interest to finance a portion of the approved project portfolio through the issuance of labeled bonds. However, these considerations alone were not sufficient to decide to label the debt. First, the Ministry of Finance ensured selected projects had already been accepted by the Budget Office as part of the government budget. Then, the green eligibility of projects had to be verified; in addition, it was important to confirm the ease with which project impacts could be assessed through ex post reporting processes. Finally, the total amount of the complete portfolio of projects to be financed had to be sufficiently high to justify a sovereign labeled issue. For example, the public debt office considers viable only those issues that are more than US$500 million. Only once these project requirements had been met, and the government had already assessed the bond's prospective financial convenience, was the decision to issue labeled debt deemed justifiable from a budgetary standpoint.

Next, the government had to decide what type of labeled instrument to issue (for example, green, social, or sustainable bonds). Ministry of Finance officials suggested that the decision depended on a number of factors, including the choice of market of issuance. In addition, for the first labeled bond issuance, most of the government's project portfolio in need of financing corresponded to green projects. Therefore, financing them through a green-labeled bond was the most attractive alternative. In contrast, at the end of 2020, Chile's debt management organization (DMO) did not contemplate big new green bond issues because not enough eligible green projects were in the government's portfolio. Instead, the government had a wide range of eligible social projects, already accepted by the Budget Office. As a result, the DMO decided to meet these financing needs through sovereign social bonds instead.

On climate, Chile's political championship of global climate initiatives is well established. In 2013, Chile presented to the Organisation for Economic Co-operation and Development (OECD)[23] its National Green Growth Strategy (Chile, Ministry of Finance 2013). The strategy laid out the government's pioneering efforts to integrate macroeconomic and fiscal policy with its climate goals and sustainable finance imperatives. The Paris Agreement of the Conference of the Parties to the United Nations Framework Convention on Climate Change was signed by the government of Chile on September 20, 2016.[24] Chile submitted its first plan on how the country would meet its Nationally Determined Contributions (NDCs) in 2019, and updated its plan in 2020. In addition, the country was a founding member and co-lead of the Coalition of Finance Ministers for Climate Action, and it assumed the UN Framework Convention on Climate Change Conference of Parties 25 Presidency in 2019. Chile's Conference of the Parties (COP) leadership was seen as helping provide further motivation to the sovereign's decision to issue the first sovereign green bond in the Americas.

Chile's NDCs established a bridge between the government's carbon mitigation and climate adaptation plans and possible forms of financing. Chilean authorities updated their NDCs while at the same time drafting the Framework Law on Climate Change for Chile, currently under discussion in Congress. The Framework Law was designed in such a way as to align the country's international climate commitments with the guidelines and instruments proposed by the bill.

By 2018, the Ministry of Finance had begun to deepen its efforts to plan for labeled debt issuances that would align with the government's sustainable finance commitments.[25] For the Ministry of Finance, the planning process consisted of two phases. In the first stage, the Ministry of Finance studied and formulated additional policies to strengthen its understanding of the policies and projects that would help Chile's economy

22 The announcement of the extension of metro´s line 2 and 3 was made in 2016; view the announcement at https://www.metro.cl/noticias/detalle/1604.
23 The elaboration of the Green Growth Strategy was one of Chile´s commitments for the entrance to the OECD member countries.
24 For an overview of the treaty, see the UN website at https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en.
25 As detailed in the October 6, 2020, Ministry of Finance presentation "Chile's Green Bonds: An Overview of Progress Thus Far.".

achieve carbon neutrality in CO2 emissions by 2050.[26] Second, the Ministry of Finance leveraged its fiscal policy architecture to establish a framework for green bond issuances to identify green projects.

The Ministry of Finance also developed additional plans in new areas to focus the government's efforts to increase climate finance flows. These new specialized areas included promoting public-private cooperation, including international negotiations on climate change, and supporting the Chilean strategy in this regard (Chile, Ministry of Finance 2019a, 2019b).

Chile seeks to further promote the development of a green asset class that can help attract foreign investment to support the economy's transition to a low-carbon future. As the first issuer of sovereign green bonds in the Americas, Chile seeks to promote a broader regional dialogue, improve the consistency and uniformity of future green bonds in the region, and contribute to the development and acceptance of this class of assets by issuers and investors.

DEFINITIONS AND STANDARDS: CHILE'S GREEN BOND FRAMEWORK

The following section lists the operational details associated with Chile's decision to issue green labeled debt. The Ministry of Finance reviewed best practice approaches from countries such as France and international standard-setting bodies to ensure that the green and social bonds could be marketed as certified bonds and would be treated as such by global and domestic investors.

The Ministry of Finance developed a green bond framework in 2019. A sovereign green bond framework establishes the obligations that the government, through its DMO, fulfills as an issuer of green bonds. Sovereign green bonds must comply with the obligations already in force for the issuance of bonds, as established by the Ministry of Finance in accordance with the budgetary process.

Investors in bonds issued under this framework do not assume any risk related to the project. The green bonds issued under this framework are classified pari passu among themselves and with other bonds of the government of Chile. The Chilean framework was developed by collecting the best practices and the highest standards of the Green Bond Principles published by the International Capital Markets Association (ICMA) in 2018. The four core components of these principles are as follows:

- **Use of proceeds.** The use of the resources obtained from sovereign green bonds mainly seeks to (a) promote Chile's transition to a low-carbon, climate-resilient and environmentally sustainable economy and be framed within the climate policy defined in the NDC and the Paris agreement; (b) consider the criteria of resilient and efficient infrastructure according to the Inter-American Development Bank (IDB 2018); and (c) ensure that infrastructure projects are financed, in whole or in part, directly or indirectly, through expenses, subsidies, or tax exemptions financed by the Ministry of Finance. For this, it is necessary to define types of expenses, sectors, and exclusions.

- **Green sectors.** In light of Chile's strategic priorities, the framework identified six sectors to be financed by the issuance of sovereign green bonds. These sectors are clean transport; energy efficiency; renewal energy; living natural resources, land use, and marine protected areas; water management; and green buildings. The sectors cover a large spectrum of environmental issues, from the reduction of greenhouse gas emissions to improvements to air quality, marine biodiversity, and water management. The sectors were identified in line with Chile's NDC commitments, as well as with national-level biodiversity and environmental goals.

- **Definition of eligible green expenditures.** The types of expenses that are likely to be used include expenditures that can typically be financed by the central government budget, including the following:

    - Tax expenditures (subsidies and tax exemptions)
    - Operational expenditures (funding for state agencies, local authorities, and companies' instrumental to deploying the country's climate and environmental strategy)
    - Investments in real assets (land, energy efficiency, infrastructure, etc.) and maintenance costs for public infrastructure
    - Intangible assets (research and innovation, human capital and organization)
    - Capital transfers to public or private entities

26 Estrategia Climátcia de Largo Plazo 2050, Ministry of Environment, available at https://cambioclimatico.mma.gob.cl/estrategia-climatica-de-largo-plazo-2050/descripcion-del-instrumento/; Contribución Determinada a Nivel Nacional (NDC) de Chile, Update 2020, Ministry of Environment, available at https://mma.gob.cl/wp-content/uploads/2020/04/NDC_Chile_2020_espan%CC%83ol-1.pdf; "Green Growth Opportunities for the Decarbonization Goal for Chile," World Bank, available at http://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.

- **Exclusions.** Sectors and projects that go against efforts for greater energy efficiency and climate action are explicitly excluded from eligibility to be funded under the framework. Examples of these kinds of projects include the following:

  - Exploration and production of fossil fuels
  - Burning of fossil fuels as the unique source of power generation or hybrid plants with a fossil-related back up higher than 15 percent
  - Construction of rail infrastructure dedicated for transportation of fossil fuels
  - Generation of nuclear power
  - Electricity transmission infrastructure and electricity systems in which an average of 25 percent or more is fossil-fuel generated
  - Alcohol, weapons, tobacco, gaming, or palm oil industries
  - Production or trade in any product or activity deemed illegal under national laws or regulations or international conventions and agreements
  - Deforestation and degradation of the forest

Another way to understand the relevance of the selected sectors is to compare them with the NDC projects that have been identified to help Chile achieve its goal of net-zero emissions by 2050. An analysis by Antosiewicz et al (2020) estimates that cleaner transport can prevent 17 percent of future emissions, that energy efficiency and efforts for renewable energy can prevent 20 percent of future emissions, and that green building plus sustainable industry can prevent 42 percent of future emissions. According to the study, Chile's mitigation plans require a present value investment of approximately US$48.6 billion. However, the operational and maintenance expenditures represent savings of about US$80.1 billion, giving a direct net gain of US$31.5 billion over the next 30 years.

The wide range of projects covered by this framework also aligns favorably to Chile's efforts to achieve the Sustainable Development Goals (SDGs) by 2030. Appendix A provides a table summarizing the sectors, taxonomy of expenditures, and estimated environmental impact of projects in each sector.

Project pipeline: Selection and allocation

Once the sectors and expenditure categories to be financed by the bond are identified, the interministerial coordination process selects projects and allocates the proceeds. Figure 2.9 highlights the role of each ministry in each stage of the process. First, the Ministry of Finance and the Budget Office (Dirección de Presupuesto, DIPRES) work with the relevant ministries to identify and pool the projects. Then, following the sovereign green bond framework, both the Ministry of Finance and the Ministry of Environment select green projects, assets, and expenditures. An important part of the selection process is also project size and the ease with which the identified projects can be included within the reports to be prepared.

Second, the allocation process starts with the issuance of the green bond by the Ministry of Finance. Finally, the Treasury transfers the resources, through the general account, to the different sectorial ministries for the implementation of green projects.

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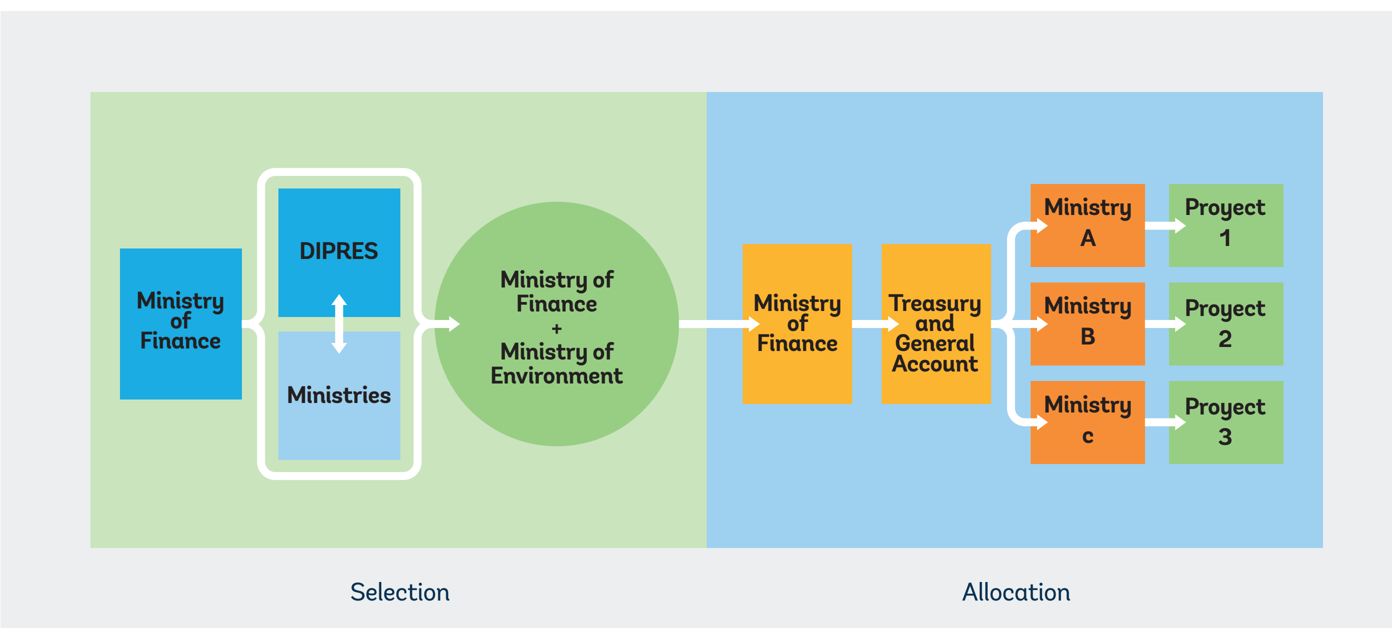
FIGURE 2.9 Green Bond Project Evaluation and Selection Process



Source: Chile, Ministry of Finance.
Note: DIPRES = Dirección de Presupuesto (Budget Office).

Management of proceeds

Eligible green expenditures include recent expenses (all expenses incurred in the previous year—the “look-back” period) and current expenses (all expenses to be made during the year of the issuance). If necessary, eligible expenditures could also include future expenses (that is, to be carried out in the coming years). For each bond and prior to an issuance, the government of Chile will issue a report that contains, at a minimum, the estimated percentage of recent green expenses to be financed through the bond, and the estimated period in which most of the expenses will be disbursed.[27]

The net resources of the bond are transferred to the general account of Chile (the Account General), awaiting assignment from the total green bond proceeds issued for eligible green expenses.

Reporting

To provide transparency on the use of proceeds, three types of reports are prepared. It is worth noting that Chile followed the standard process followed by the International Capital Markets Association (ICMA) and the Climate Bonds Initiative (CBI) to market their labeled instruments as certified green and social bonds. The three types of reports are as follows:

Allocation reports

As their name suggests, allocation reports are used by issuers to provide more detailed information to investors on how proceeds were allocated. Specifically, allocation reports provide

- A brief description of the projects and the amounts disbursed,
- The percentage of proceeds allocated per green project or program,
- Percentage of proceeds allocated for financing and refinancing,
- The remaining balance of unallocated proceeds, and
- The percentage of co-financing per green project or program.

The allocation report is prepared and published by the Ministry of Finance yearly, until total allocation of proceeds is met. An external auditor hired by the Ministry of Finance reviews the allocation report. For the 2019 issue, the European Quality Assurance, a Spanish external verifier approved by the Climate Bonds Initiative, conducted the external audit of the allocation report. Additionally, Vigeo Eiris was commissioned by the Ministry of Finance to prepare a Post-Issuance Verifier Report to verify that the selected projects were eligible for certification under CBI Standards.

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TABLE 2.1 Use of Proceeds Description

Use of proceeds	Clean transportation	Energy efficiency	Renewable energy	Living natural resources, land use and marine protected areas	Water management	Green buildings
Project Evaluation and Selection	• Selection of eligible green projects through a decision-making process by Ministry of Finance • Green Bond Committee, led by the Ministry of Finance with the support of the main ministries in charge of the execution of the public budget, to review and validate the selection of eligible green projects					
Managementes of proceeds	• Net proceeds to be transferred to the general account of Chile and each specific green bond issuance to be linked to a specific pool of eligible projects • Total value of eligible projects to be higher than the amount of issuance, to avoid the necessity to include new projects in event of projects no longer eligible, and includes previous year and current year expenditures and, if necessary, future expenditures • Until full allocation, unallocated proceeds managed in line with the liquidity management policy					
Reporting	Annual reporting on: • Proceeds allocation (per category) • Output (e.g. km of train lines; installed capacity in MW) and impact indicators (e.g. CO_2 avoided, energy saved)					
External review	• Second Party Opinion from Vigeo Eiris on the Framework • CBI certification • Annual Assurance Report by an external auditor on the allocation report and its conformity with the Framework					

27 https://www.hacienda.cl/areas-de-trabajo/finanzas-internacionales/oficina-de-la-deuda-publica/bonos-sostenibles

Impact reports

The Ministry of the Environment is responsible for assessing the impacts of each of the projects and the savings they have provided to the country in emissions terms. Impact reports cover three main areas:

- The expected impact of the projects and assets
- The qualitative performance indicators and, when feasible, quantitative performance measures of the impact of the projects
- The methodology and underlying assumptions used to prepare performance indicators and the metrics when they need to be disclosed

The impact report is prepared by the Ministry of Environment and published by the Ministry of Finance on a yearly basis, up to the maturity of the bonds issued.

The described reporting process is summarized in figure 2.10.

Eligibility report

With the expansion of the labeling of sovereign bonds to include social bonds beyond the green ones, it was also necessary to include an eligibility report, which accounts for the joint process of the finance ministry with the sector ministries. Besides publishing the resource allocations for the projects of the certified portfolio, the Ministry of Finance will report on the conformity of the projects with the eligibility criteria described in appendix A, according to the Taxonomy on Use of the Proceeds of the Framework of green and social issuance.

The issuances are carried out under the green bond framework, a document that establishes the guidelines for future sovereign green bond issues and that closely follows international standards and practices. In addition, the framework was externally verified by Vigeo Eiris, an international research and rating agency focused on evaluating ESG-related strategies and initiatives. Vigeo Eiris has received an international certification from CBI.

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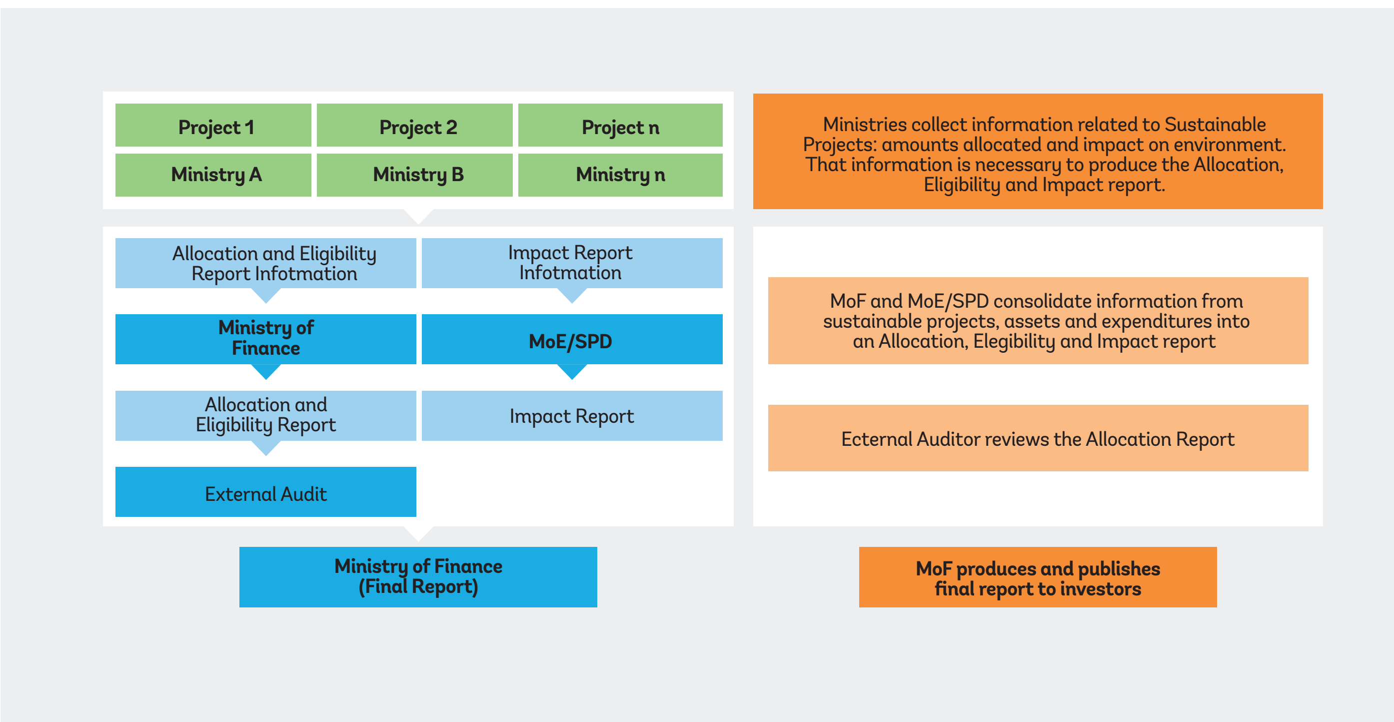
FIGURE 2.10 Green Bond Reporting Process



Source: Chile, Ministry of Finance.
Note: MoF = Ministry of Finance; MoE = Ministry of Environment; SPD = Social Politics Division.

RESULTS FROM ISSUING GREEN BONDS: INVESTOR BASE, COST, AND PRICING

Chile issued its inaugural green bonds in 2019 and issued again in 2020. In 2019, Chile issued a green bond in US dollars (30-year, US$1.4 billion) and in euros (12-year, €861 million). The issuances were considered a success by the authorities because they obtained historically low rates in euros and in US dollars—3.53 percent for the 30-year dollar bond and 0.83 percent for the bonds in euros at 12 years. Both placements reached a negative issue premium, −5 basis points lower than the yields estimated by the secondary market information for the regular sovereign US dollar bond, and −10 basis points for the euro bond. In particular, the issuances attracted significant investor interest, as evidenced by a demand of 12.8 times the quantity offered for the US dollar-denominated bonds and 4.7 times the amount offered for the euro-denominated bonds.

In terms of the investor profile of buyers, figure 2.11 shows that for both US dollars and euro bonds, more than half of the investors are from general asset management companies. Furthermore, the proportion of declared ESG investors who bought US dollar-denominated bonds was only 35 percent, substantially lower than the 76 percent share observed for the euros issue (Figure 2.12).

The 2019 green bonds project portfolio consisted of US$4.3 billion allocated to four sectors: clean transportation, renewable energy, green buildings, and water management. As shown in figure 2.13, most of the financing collected was destined to the transportation sector, mainly to finish the construction of line 3 of the metro system and to extend line 2 (Chile, Ministry of Finance 2020b).

The Chilean Treasury Bond Placement Plan for 2020 contemplated further green bond issuances for the year. The second green bond issuance took place in January 2020, just six months after the inaugural issuances.

Episodes of social unrest in Chile began in October 2019. Initially, the number of serious violent events reported ranged between 100 and 400 a day during the first two weeks of active social unrest (Chile, Ministry of Finance 2020a). These events declined with time; by January 2020, the number of violent events had declined considerably. Estimated capital losses related to the unrest amounted to US$1.6 billion, of which US$850 million corresponded to private infrastructure and $US750 million corresponded to public infrastructure. Capital losses related to public infrastructure stemmed mainly from events affecting the metro (US$380 million). By January 2020, it was decided that proceeds from the second issuance of green bonds could be allocated to transportation projects, with part of the proceeds allocated to reconstruction of the metro system (US$380 million, totaling 9 percent of the total disbursement of the project portfolio).

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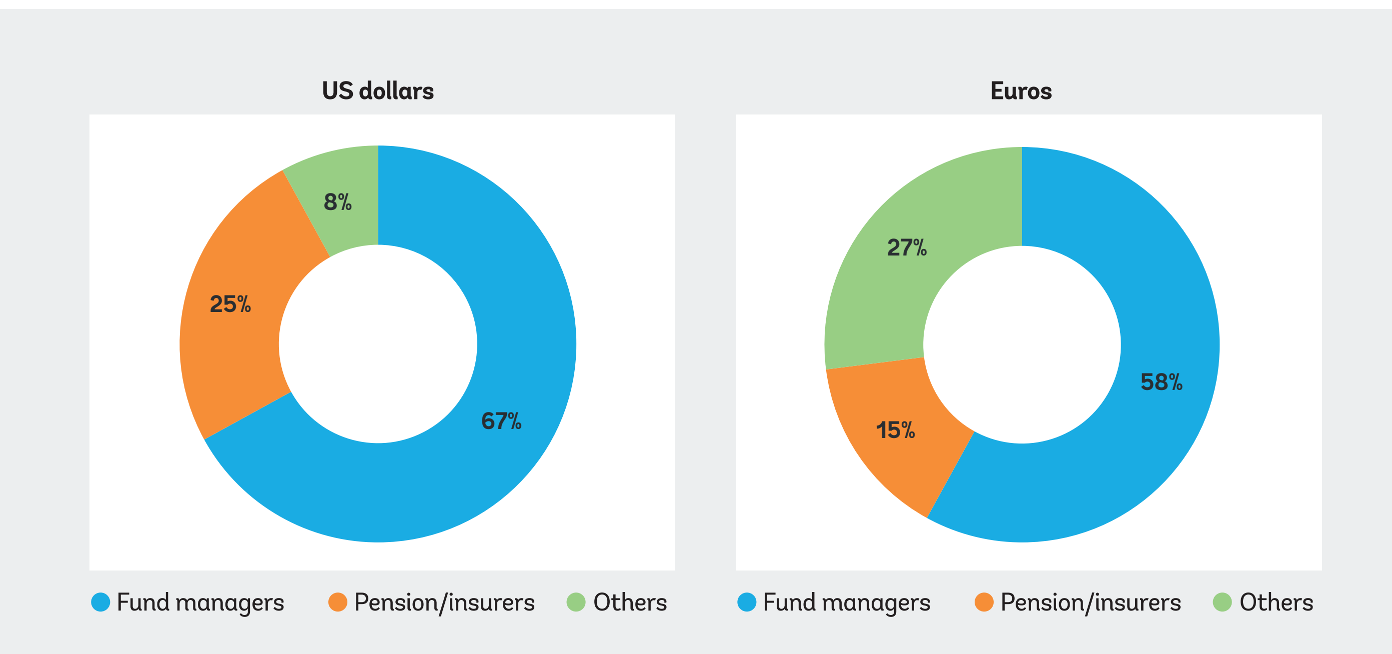
FIGURE 2.11 Investor Demand by Type, 2019



Source: Chile, Ministry of Finance.

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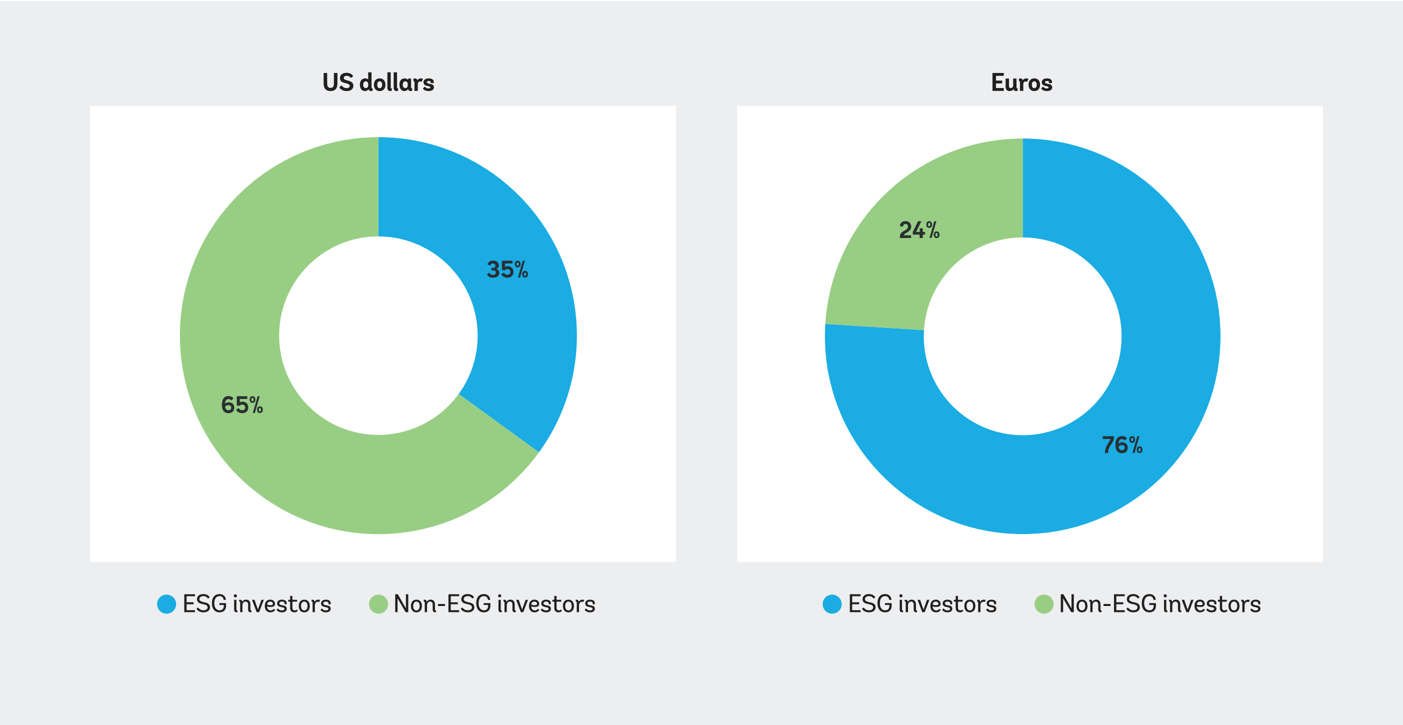
FIGURE 2.12 Investor Demand by ESG, 2019



Source: Chile, Ministry of Finance.

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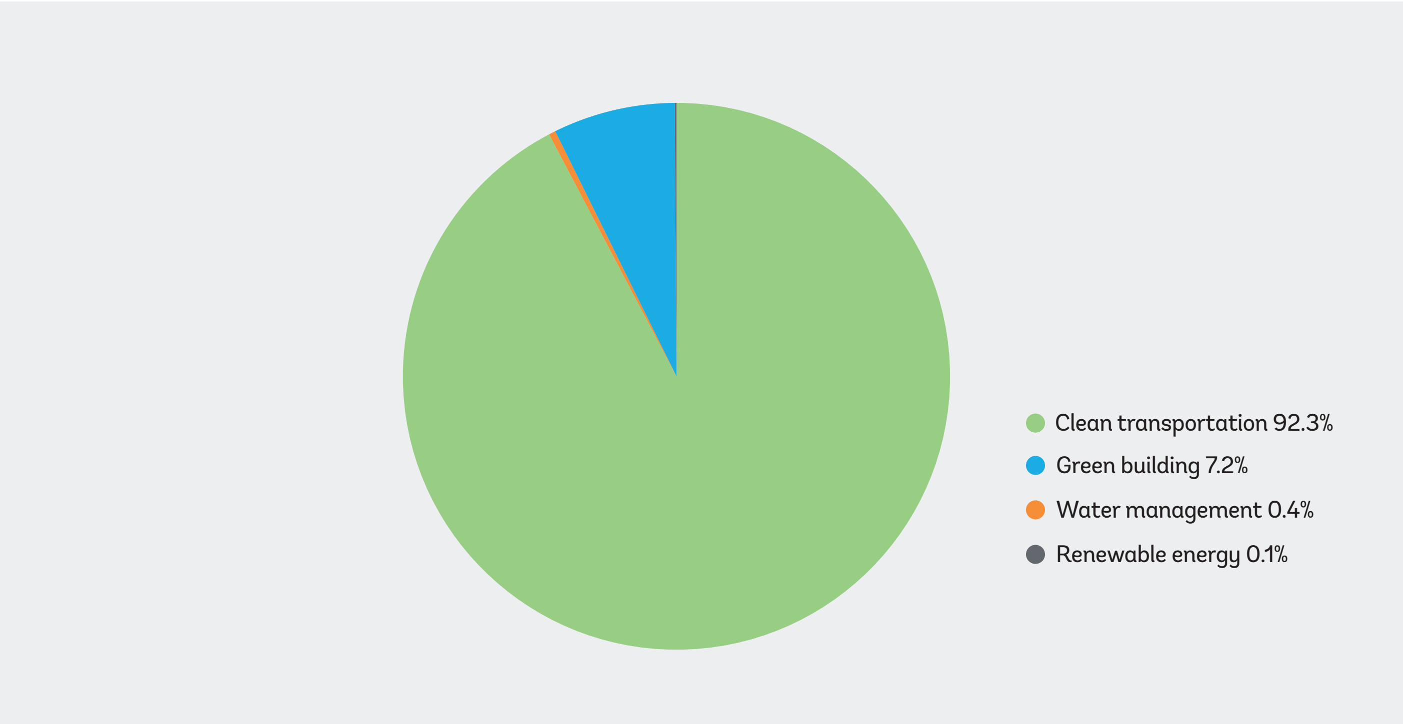
FIGURE 2.13 2019 Green Bond Project Portfolio, Sectors



Source: Chile, Ministry of Finance.

In 2020, Chile again issued in both the US dollar and euro markets. In US dollars, Chile embarked on a new issuance maturing in 2032 for US$750 million and reopened the 2019 US dollar issuance for US$900 million.[28] As with the first US dollar green bond issuance, the new issuance achieved historically low yields: 2.571 percent for the 12-year bond and 3.275 percent for the 30-year reopening bond, with spreads over US Treasury rates with similar maturities of 80 basis points and 105 basis points. Investor demand was 2.5 times the amount offered for the 12-year bond and twice for the reopening, with a total share of ESG investors of 13 percent (Government of Chile 2020b). In the euro market, the government issued a bond maturing in 2040 for €1.269 billion and reopened the one issued in 2019—maturing in 2031—for €694 million. The issuance in the euro market also achieved low yields—1.299 percent for the 2040 eurobond and 0.695 percent for the reopening—with spreads of 80 basis points and 50 basis points, respectively. Additionally, the total share of ESG-declared investor participation was 30 percent.

Finally, regarding the investor profile of buyers, between 50 percent and 70 percent of buyers for each bond denominated in euros and US dollars corresponded to fund managers. The 2020 green bond project portfolio consisted solely of projects in the clean transportation sector (figure 2.16), and totaled US$4.4 billion (Chile, Ministry of Finance 2020b).

In January 2021, the Chilean government issued euro and US dollar green bonds, achieving the country's lowest yields at the respective maturities. The issue consisted of a €400 million bond maturing in 2031 at a yield of 0.399 percent, and a US$750 million bond maturing in 2032 at a yield of 1.962 percent. These issuances will finance the portion of green bond projects that was certified in 2019 and 2020 but that had not been financed through previous bond issuances (US$2.367 billion) plus US$370 million of new green projects newly certified in 2021. This newly certified project portfolio consists of projects from the clean transportation sector (electric buses and sustainable mobility, 56 percent); energy efficiency (renewable energy in vulnerable sectors, 6 percent); and green building (construction of public buildings, 38 percent).

Chile received several international awards and recognitions in 2019 for its green bond issuances. Awards given to Chile's debt managers included the Environmental Finance Bond Award for the Green Bond of the Year-Sovereign, the LatinFinance Award for the Sovereign Issue of the Year, the GlobalMarkets Award for the Best Public Debt Office/Sovereign Debt Management Office in Latin America, and the GlobalCapital Sustainable and Responsible Capital Markets Award for the Green Bond of the Year for Latin America (Chile, Ministry of Finance 2020c).

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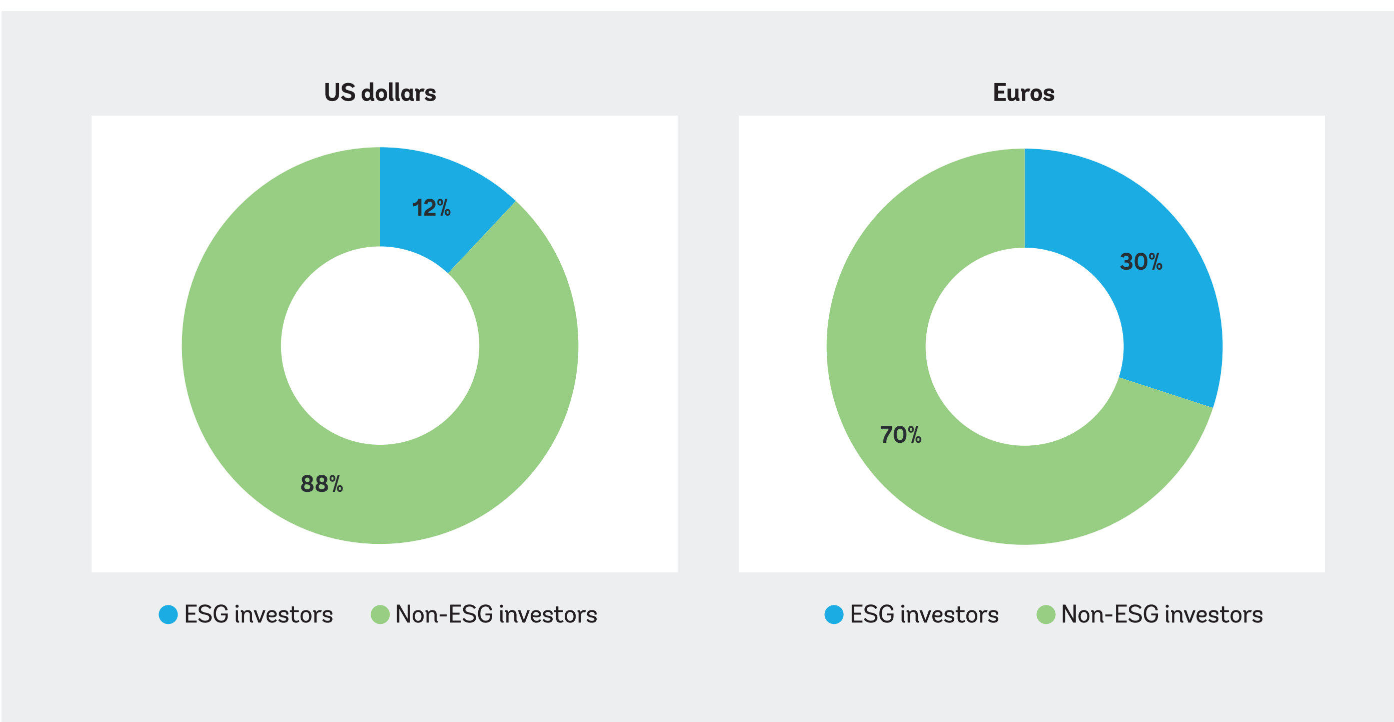
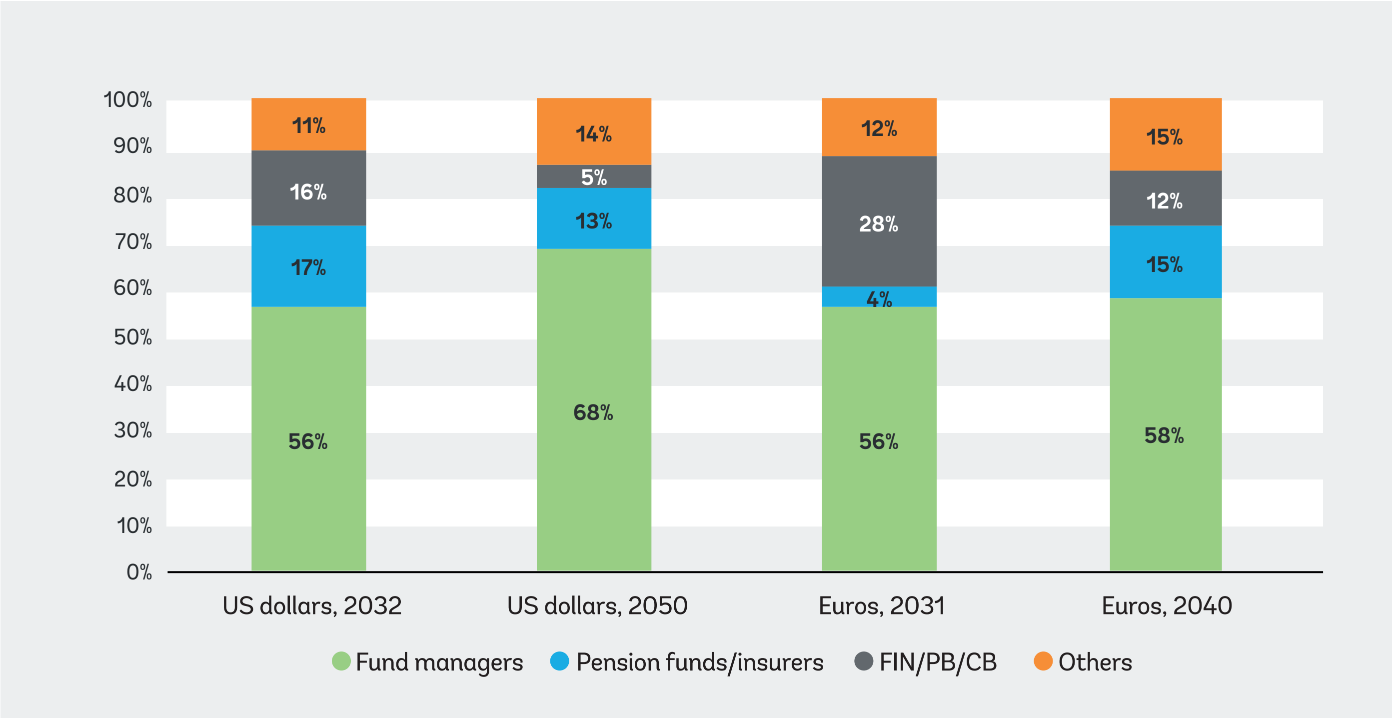
FIGURE 2.14 Investor Demand by Type (2020 Issuance)



28 Reopenings of labeled bonds are possible when new green projects, or unfunded portions of previous green projects, have been identified. In this case, the reopening helped to fill the remaining funding gap associated with the Greater Santiago metro project, as well as additional new projects.

> > >
FIGURE 2.15 Investor Demand by ESG (2020 Issuance)



Source: Chile, Ministry of Finance.

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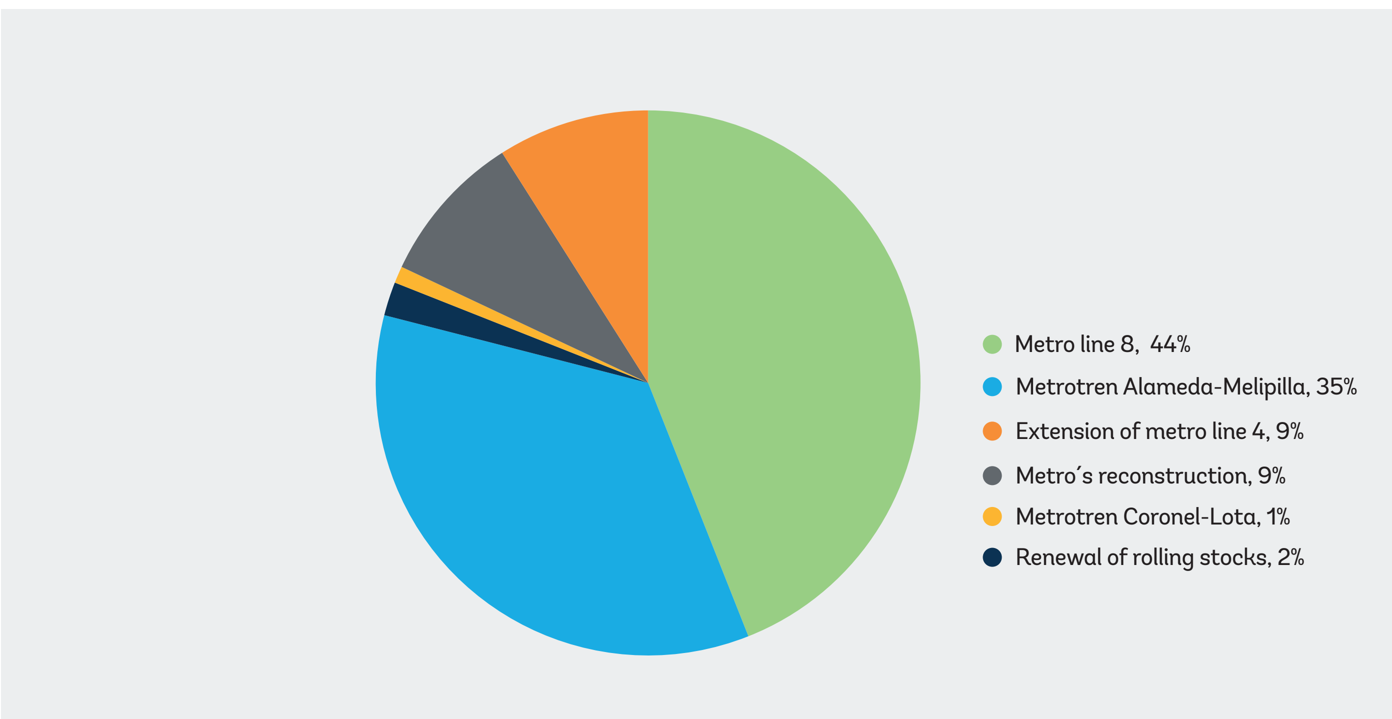
FIGURE 2.16 2020 Green Bond Project Portfolio



Source: Chile, Ministry of Finance.

CHILE'S SOCIAL BOND PROGRAM

In November 2020, Chile updated and broadened its sovereign green bond framework to support future social, green, and sustainable bond issuances. The new sustainable bond framework was designed in alignment with international guidelines and principles, especially the green, social, and sustainable bond principles of the International Capital Market Association. The updated framework follows the same four core components of the previous framework (use of proceeds, project evaluation and selection process, management of proceeds, and reporting process), but also covers the social sectors and eligible social expenditures. Importantly, the new sustainable framework also allowed the Ministry of Finance to flexibly issue labeled instruments even in a context where eligible "green" projects might be delayed.

The sustainable bond framework also updates the selection and reporting processes, which includes new entities throughout the issuance process and the delegation of new tasks. First, the updated framework creates the "Sustainable Bond Committee," an inter-ministerial committee led by the Ministry of Finance that supervises and ensures the thorough implementation of the framework. Second, the analysis and selection of projects and expenditures is now carried out by the Ministry of Finance, together with the Ministry of the Environment or the Social Politics Division, depending on whether it is a social or green expenditure. Finally, the Ministry of Finance is in charge of preparing the allocation and eligibility reports, while the impact report is prepared by the Ministry of Environment or the Social Politics Division, depending on the nature of the bond.

In November 2020, Chile issued its first sovereign social bond, in local currency, for US$2.1 billion. This first social issuance consisted of two local currency bonds maturing in 2028 and 2033. The government was able to reach very low rates—2.5 percent for the bond maturing in 2028 and 3.4 percent for the bond maturing in 2033. The issuances received a total demand of 3.1 times the amount offered and a historically high foreign participation rate of 48 percent.

In January 2021, following the success of the domestic social bond issue, the government tapped the international social bond market again through a euro and US dollar issuance. It consisted of a €1.25 billion bond maturing in 2051 at a yield of 1.298 percent and a US$1.5 billion bond maturing in 2061 at a yield of 3.116 percent. Both of these issues correspond to the longest dated bond issued by the Chilean government in their currencies, 40-year US dollar bond and 30-year euro bond.

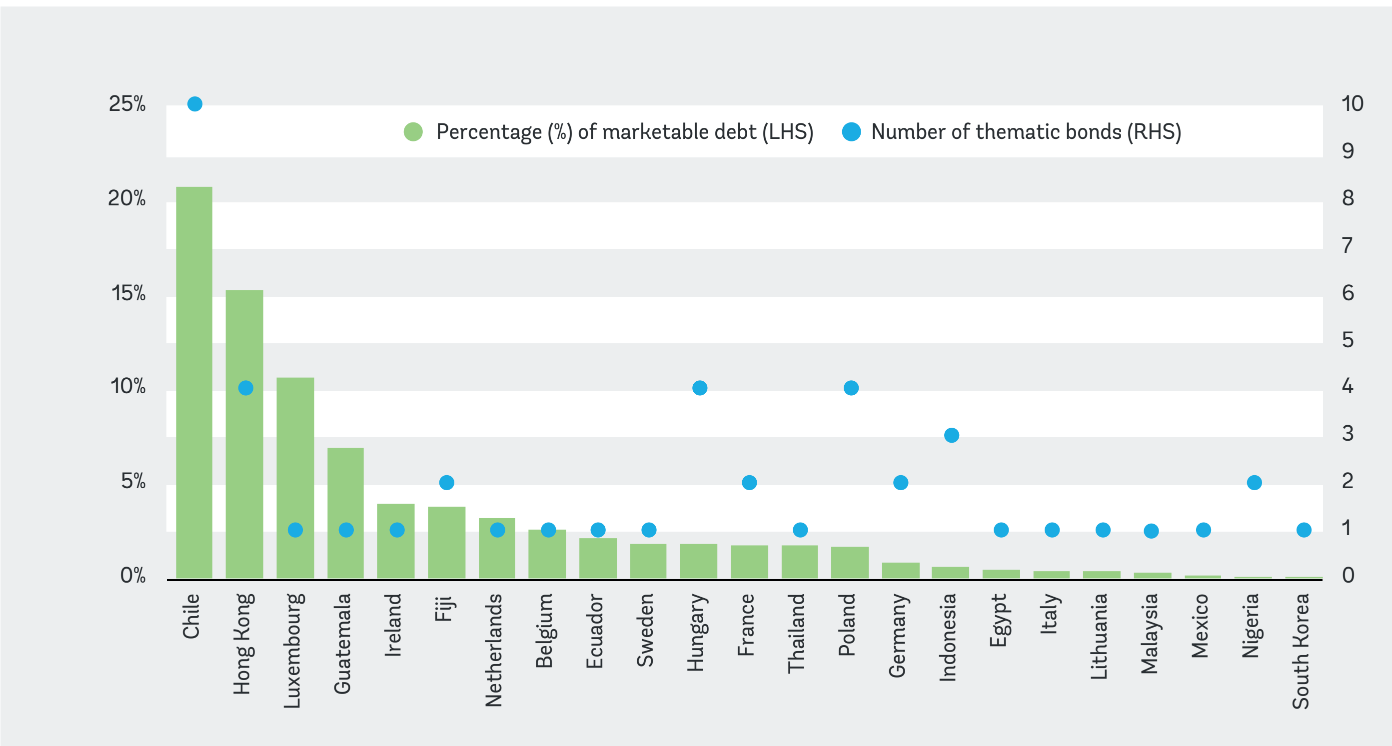
CHILE'S SUSTAINABLE BOND

In March 2021, Chile issued its first sovereign sustainable bond (US$1.5 billion, 32-year tenor). The issuance was jointly listed on the London Stock Exchange and on the Taipei Stock Exchange.[29] It marked the first sovereign sustainable instrument to be listed in Taiwan. Chile's Ministry of Finance noted that the joint listing in Taiwan helped the issuer access a broader universe of investors in Asia. Demand exceeded supply by 2.3 times and achieved a yield of 3.5 percent. The bond's proceeds will finance both green and social projects.

As of May 2021, Chile´s thematic bonds represent nearly 1/5 of the central government's debt stock -- a share that is among the highest in the world. To date, Chile has issued US $ 16.2 billion in thematic bonds, of which US $ 7.7 billion are green bonds, US $ 7 billion are social, and US $ 1.5 billion are sustainable bonds. bonds (see figure 2.17)

> > >

FIGURE 2.17 Thematic bonds as a share of marketable debt outstanding



Source: Bloomberg, World Bank staff calculations.
Note: Bonds outstanding greater than 1 year maturity.

PRICING AND THE "GREENIUM"

Much attention has focused on the existence of a pricing advantage or "greenium" for sovereign labeled bonds. Although in the initial phase of sovereign green bond issuance (2017–19) there was inconclusive evidence of the existence of a "greenium," many of the more recent sovereign labeled bond issuances indicate the existence of a premium, particularly in the primary market. This premium is indicative of the current significant investor demand for sovereign ESG-related instruments. Evidence in the secondary market is less conclusive and any assessment can be skewed when market liquidity factors are also considered. In general, the existence of a "greenium" or otherwise should not be the motivation behind a sovereign labeled bond issuance.

It is unlikely that a clear pricing differential will evolve between labeled bonds and conventional bonds, barring further regulatory-induced investor demand. As a result, "greeniums" on new sovereign issues will for the time being remain a sporadic function of the issuer's credit, investor demand, prevailing risk sentiment at issuance, syndicate desk marketing, and book-building dynamics. Indeed, some have argued that the existence of greeniums is a negative market development. The Dutch central bank (De Nederlandsche Bank) has warned that such pricing potentially indicates a market "bubble" for green bonds because they carry the same risk as their conventional equivalents.

In the case of Chile's green bond issuances, new issue premiums were calculated at up to 10 basis points on the euro issuances and at up to 5 basis points on the US dollar issuances. Although the new issues did indeed price close to the prevailing secondary market Chilean euro and US dollar yield curves, it can be difficult to ascertain a scientific pricing advantage and make exacting claims that the green bonds priced at a premium on account of secondary market pricing, liquidity, as well as other factors. For example, bid-offer spreads are quite wide for Chile's eurobonds (between 4 and 8 basis points for the euro and US dollar bonds) and as a result, calculating exacting premiums becomes more of an art than science. Moreover, premiums have dissipated in the secondary market, and Chilean green bonds tend to trade at fair value, relative to comparable conventional bonds (see figure 2.17).

In general, in the secondary market, the US dollar yield curve appears more liquid than the euro, with the two longest US dollar bonds showing up as most liquid on Bloomberg's liquidity assessment measure (LQA). This probably relates to the fact that Chile is a relatively new issuer in the euro bond market and, therefore, trading activity in it naturally lags the more mature US dollar market. In addition, based on the LQA assessment, the US dollar market appears to have more depth—indicative of these bonds being a little more actively traded—despite lower outstanding volumes.

There is mixed evidence on the secondary market liquidity of Chile's green bonds relative to comparable conventional bonds. The experience of March-April 2020 trading suggested that Chile's green bonds may be less liquid during periods of market volatility. This is perhaps a sign that dealers become a bit more defensive on pricing, and also indicative of bond holders being less willing to sell the bonds—relative to conventional bond holdings. These dynamics were also observable in other sovereign green bond markets, to varying extents during this period. However, in recent months, bid-offer spreads of Chile's green bonds have narrowed inside that of comparable conventional bonds, including during periods of market volatility. Recent primary market issuance of Chile's green bonds also supported this dynamic.

29 For additional information, see https://www.hacienda.cl/noticias-y-eventos/noticias/chile-emite-bonos-sostenibles-por-us-1-500-millones-en-mercados-internacionales.

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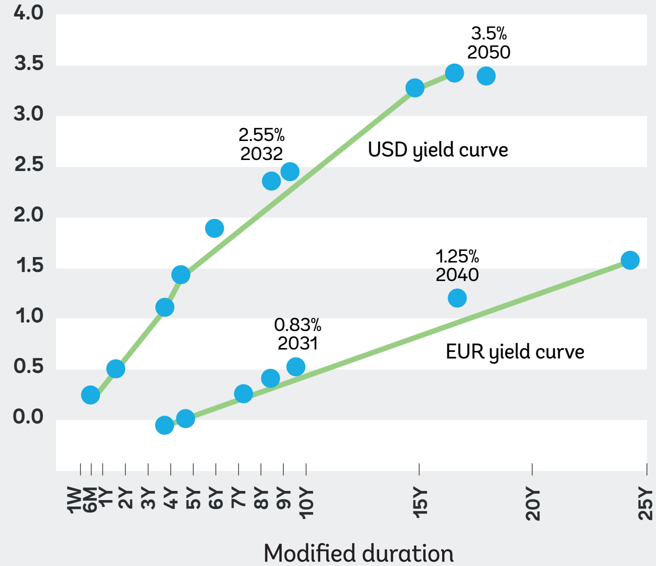
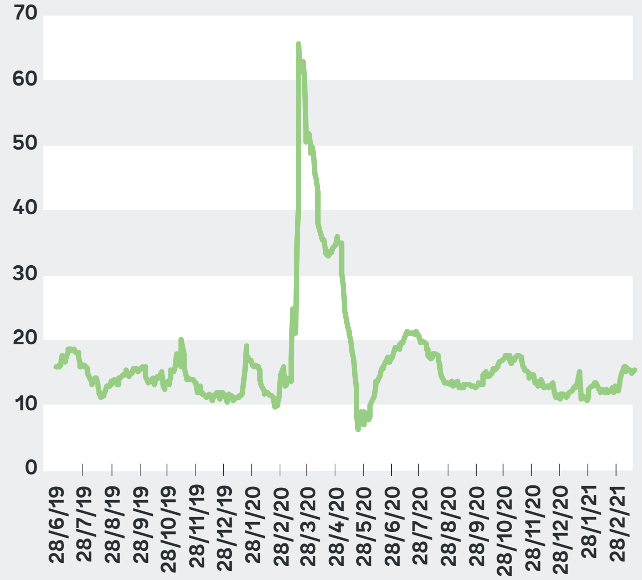
FIGURE 2.17 Overview of Recent Market Dynamics in Chile's Euro and US Dollar Green Bonds

a. Chile green bonds in both euro and USD trade at fair value to respective euro and USD Chile yield curves



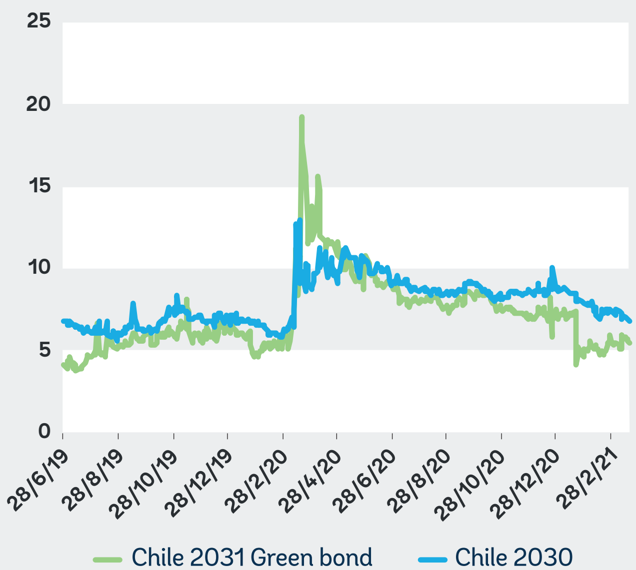
Source: Bloomberg.

b. Euro Green bond spread (bps) versus nearest comparable bond erratic during March 2020 volatility- less volatile in February 2021 bond market volatility



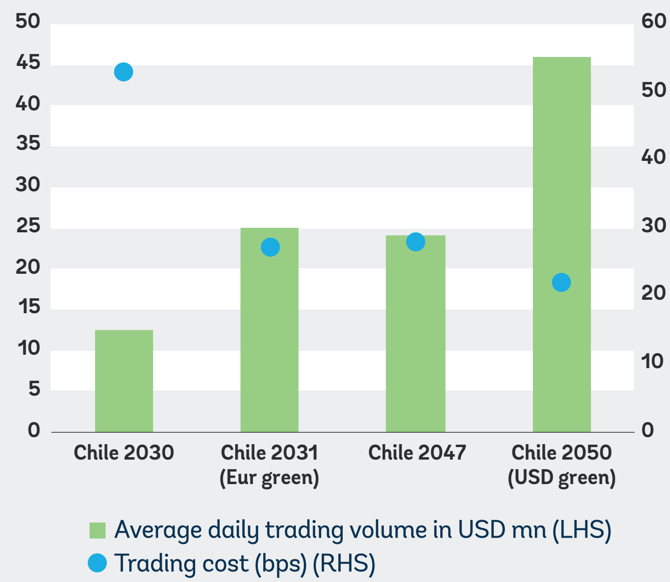
Source: Bloomberg.

c. Chile Eur Green bonds-bid offer spread widened more during March-April 2020 volatility- implying a higher cost to trade/more defensive dealers- recent primary issuance supported liquidity during February 2021 volatility



Source: Bloomberg.

d. Chile's USD green bonds appear to be more actively traded despite lower volumes outstanding. More depth in USD market despite generally wider bid-offer spreads



Source: Bloomberg.

IMPACT OF LABELED ISSUANCES ON CHILE'S DOMESTIC DEBT MARKET

Although debates will continue around the existence of "greeniums," it is important to acknowledge the indirect benefits for sovereigns of issuing a labeled bond, which are much harder to meaningfully quantify. These benefits include the establishment of a green risk-free curve for private issuers to use as a benchmark for green pricing; setting conventions for issuance, including definitions of acceptable green projects or climate goals; providing assets for hedging and collateralizing borrowing; and encouraging the development of climate finance expertise in the local financial services community, driving wider product innovation.

ESG and climate change risk has become an increasingly important concern for Chile's financial entities. According to the 2019 survey conducted by the Ministry of Finance on "risks and opportunities associated with climate change in the financial sector of Chile," 72 percent of the main participants in the financial market (pension funds, fund administrators, insurers, banks, and financial intermediaries) consider ESG and, in particular, climate change, a risk that could affect the solvency and results of these entities. In particular, most of the surveyed entities expect that the main impact of climate change will be seen in their financial results within 10 years.

As a result, financial institutions have begun taking this risk into account and they also have begun supporting climate change mitigation activities. For example, 57 percent of the surveyed entities have voluntarily adhered to an ESG information reporting and disclosure initiative.

Domestic pension funds, fund managers, insurance companies, and banks have already started to develop ESG strategies. Recently, the main participants in the financial market have changed key aspects of their business model to further integrate ESG criteria. According to the survey by the Ministry of Finance, about half of the financial entities surveyed state that they explicitly incorporate climate change criteria into their strategies or policies. This goes from investment portfolio decisions, credit evaluations, and borrowing decisions to the design of new funds and products and the investment and issuance of thematic bonds (green, sustainable, and/or impact).

The local appetite for local currency-denominated green bonds remains low compared with other developed markets but it is expected to increase. As a result, it is not surprising that the government initially focused its green bond issuances only in currencies with a high level of market development, in which there is a high appetite for ESG assets. Currently within Chile, the local demand is lower. For the average local investor, a green bond instrument is still perceived as a substitute for a traditional bond and, therefore, no "premium" is observed in the price of ESG instruments. For example, the green and social corporate issues that have taken place in recent times have performed similar to traditional instruments. This performance could be in response to the fact that the market is still in early stages of development compared with other currencies. Nevertheless, private market participants expect that in the following year the appetite for these instruments will increase as the market develops further.

Since 2018, the private sector has led the first issuances of green bonds and social bonds. However, Chilean corporate issuers are lagging behind issuers in the American or European market because they are just beginning to develop their ESG mandates, and many still do not have ESG strategies. In part, this lagging is because in Chile, the market for ESG instruments is in the nascent stage, and measures are just beginning to be implemented to further develop it. In this way, local issuances of ESG instruments are currently kept at low levels but are expected to increase as the market develops more and issuers begin to integrate them into their financing strategies.

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TABLE 2.2 Green and Social Bonds Issued by Chilean Corporates and Listed in the Santiago Stock Exchange

Date	Company	Project Category	Chilean Pesos, Millions	Placement rate
Apr 18	Aguas Andinas	Water	40.542	1.8%
Apr 18	Banco Estado	Socioeconomic advancement	51.268	4.25%
Nov 18	Los Héroes	Access to essential services	27.558	2.54%
Jan 19	ESVAL	Water	43.298	2.6%
Apr 19	Aguas Andinas	Water	60.458	2.0%
May 19	Hortifrut	Sustainable land and natural resource use	28.562	1.56%
Jun 19	Los Héroes	Socioeconomic advancement	41.699	3.78%
Jul 19	CMPC	Ecoefficient prod. and adaptation to circular economy	73.029	1.22%
Sep 19	ILC Chile	SMEs and job growth	57.275	0.36%
Oct 19	SONDA	Energy efficiency	42.165	0.37%

Source: CLAPES-UC staff calculations using Santiago Stock Exchange data.
Note: SMEs = small and medium enterprises.

Pension funds are key to further developing the ESG market given their relative importance in the sovereign debt market. Because pension funds are positioned as the main local buyer of sovereign debt, private market participants estimate that if pensions funds were to increase their demand for ESG instruments, the rest of the market will most likely follow, as has been the trend.

Financial entities believe that standardized frameworks or guidelines for the issuance of ESG instruments will be key for the development of the ESG corporate market. ESG-sensitive investors report the need for guarantees to ensure that labeled issuance will comply with global ESG standards. As a result, having a framework at the national level becomes increasingly important because there is no absolute definition of how ESG issuances or investments have to be made. A company-specific framework with clear definitions of the use of procedures, exclusions, and general disclosures serves to guarantee the transparency of the issue and the issuer's accountability. In addition, the role of third-party ESG certifications are key to give guarantees to investors that these instruments will, in fact, follow the necessary ESG standards. The Ministry of Finance has convened a Green Finance Roundtable and is working with the Inter-American Development Bank and the Climate Bonds Initiative, with a peer review from the World Bank Group, to develop a taxonomy for the financial sector.

One way to attract the entry of more participants into the ESG market could be through financial or regulatory government incentives. Some Chilean investors note that the returns on ESG instruments have not been higher than those of other traditional instruments. As a result, ESG instruments are not yet attractive enough from a risk-return perspective. Consequently, investors believe that one way more participants could be encouraged to enter the ESG market could be through government incentives, either financial or regulatory. Some participants noted that recent rules from Chile's pension fund regulator could change this. In November 2020, Chile's pension supervisor issued new rules that incorporate ESG risks as part of its risk-based supervision and compels Chile's pension funds to include ESG as part of their investment guidelines.[30]

30 For more information, see the November 24, 2020, presentation "Cambio climático y factores asg en el sistema previsional" at https://www06.spensiones.cl/portal/institucional/594/w3-article-14250.html.


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Lessons for the Pacific Alliance

Bolstered by growing international appetite for environmental, social, and governance (ESG) instruments, Chile's sustainable issuances leveraged its existing credit profile to tap a new market segment. Chile strengthened its sustainable debt offering through the delivery of a cohesive sustainable development policy framework, making its debt offering more credible. When applying the lens of the World Bank's ESG public debt management (PDM) framework, we find that Chile evaluates highly on ESG readiness factors, suggesting that the benefit of following multiple ESG activities, including issuing labeled debt, tends to outweigh the costs. These factors include the country's strong macroeconomic stability; the existence of a solid and transparent debt issuance framework; a track record of eurobond issuances; and the importance of a governance structure based on cooperation between government entities, with a focus to carry out policies in line with medium-term and long-term government strategies.

GOVERNMENT BOND MARKETS IN THE PACIFIC ALLIANCE

Countries in the Pacific Alliance maintain heterogeneous sovereign debt profiles. Before the COVID-19 pandemic, the macroeconomic background and the debt profile of these countries were different from one another. These differences have been exacerbated by the crisis because the policy response of these governments has greatly differed, resulting in different debt and macroeconomic performance. However, Pacific Alliance countries (PACs) now look to deepen their efforts in ESG policies using green finance.

The World Bank has provided significant technical assistance to PACs as they work to strengthen the development of their government bond markets and to further "green" the financial sector. Since 2011, the World Bank's Government Debt and Risk Management program has worked with middle-income countries such as Colombia and Peru to provide customized advice to support the development of sustainable debt and risk management frameworks.[31] In addition, this technical advisory has been further complemented through Switzerland's State Secretariat for Economic Affairs (SECO)–supported Capital Markets Strengthening Facility, which focuses on improving government debt market development and issuance planning in priority countries. In Mexico, the World Bank Group has launched the "30 by 30 zero" program, which aims to support public and private efforts to increase climate-related lending by financial institutions by 2030. The program will work with Mexico's Central Bank and Ministry of Finance, among others,

31 For further information, see the Government Debt and Risk Management program's website at https://www.worldbank.org/en/topic/debt/brief/government-debt-and-risk-management-program#1.

to support climate-related risk management and to identify new opportunities to further "green" the financial sector.[32]

The Colombian economy has grown steadily in recent years, though COVID-19 has ushered in the country's first economic contraction in nearly 20 years. In 2019, Colombia had the highest economic growth rate in the region; it was the only country in the region that had experienced accelerating economic growth compared with the previous year (IMF 2020a). However, gross domestic product (GDP) contracted 6.8 percent in 2020 and it is expected to rebound 5 percent in 2021. In fiscal terms, since 2007, the public debt has increased progressively, reaching 52 percent of GDP at end-2019. Recently, the Colombian government has implemented large fiscal stimuli to offset the effects of the crisis, which has deteriorated the country's fiscal and macroeconomic position (IMF 2020b). In particular, as the fiscal deficit widens substantially, the general government gross debt is expected to increase to 70 percent of GDP in 2021. As a result, the deterioration of Colombia's fiscal position has threatened the country's credit profile.

The Mexican economy had the lowest growth among the Pacific Alliance group prior to the COVID-19 crisis, and the social and economic costs of the pandemic are expected to persist. In 2019, Mexico's economic activity slowed, with a contraction of 0.3 percent (IMF 2020a). Mexico's economic recovery has been slow following the onset of the coronavirus, and it is expected to continue on that path unless a more substantial fiscal response takes place (Hannan, Honjo, and Raissi 2020). In 2020, GDP is expected to fall by 9 percent with an expected rebound of only 3.5 percent in 2021. In terms of fiscal performance, in recent years and up to 2019, Mexico's general government gross debt was stable at around 53 percent of GDP, and it is expected to increase to 66 percent in 2020 and 2021 (IMF 2020a).

Peru had benefited from a solid fiscal position prior to the onset of COVID, but it has since experienced a contraction. In the years before the pandemic, Peru enjoyed positive economic growth and it maintained a solid fiscal position and growth potential through the past decade. Peru

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TABLE 3.1 Pacific Alliance Countries Credit Rating, March 2021

	Chile	Mexico	Colombia	Peru
S&P	A+↓	BBB↓	BBB-↓	BBB+
Moody's	A1↓	Baa1↓	Baa2	A3
Fitch	A-	BBB-	BBB-↓	BBB+

Source: Credit Rating Agencies.

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TABLE 3.2 Real GDP Growth (percent, year-over-year)

	2017	2018	2019	2020e	2021e
Chile	1.2	4.0	1.1	-6.0	4.5
Colombia	1.4	2.6	3.3	-6.8	5.0
Mexico	2.1	2.2	-0.3	-9.0	3.5
Peru	2.5	4.0	2.2	-13.9	7.3

Source: Data compiled from Regional Economic Outlook Western Hemisphere, International Monetary Fund, and World Bank staff.
Note: 2020 and 2021 figures are estimates.

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TABLE 3.3 General Government Gross Debt (% GDP)

	2017	2018	2019	2020e	2021e
Chile	23.6	25.6	27.9	32.8	37.5
Colombia	48.5	51.4	52.2	66.7	70.0
Mexico	54.0	53.6	53.7	65.5	65.6
Peru	25.4	26.2	27.1	39.5	39.1

Source: Data compiled from Regional Economic Outlook Western Hemisphere, International Monetary Fund, and World Bank staff.
Note: 2020 and 2021 figures are estimates.

32 For more information on the program, see the International Finance Corporation's presentation at https://www.ifc.org/wps/wcm/connect/05541643-0001-467d-883c-5d7a127ffd57/IFC+Greening+Report+Sept+2020.pdf?MOD=AJPERES&CVID=nisvaOC&ContentCache=NONE&CACHE=NONE.

managed to reduce the high levels of debt observed in the early 2000s; debt stabilized to between 25–27 percent of GDP in recent years (IMF 2020c). Peru experienced a contraction in 2020, with GDP falling by 12 percent in 2020; a rebound of 7.6 percent is expected during 2021. Peru's government debt increased significantly and it is expected to approach 40 percent of GDP in 2020 and 2021 (IMF 2020a). However, it is important to note that even at the height of the pandemic, Peru issued a 100-year sovereign bond and continues to enjoy investor confidence.

International issuances

The countries in the Pacific Alliance have enjoyed regular access to international capital markets (eurobonds) to meet policy objectives, including investor diversification, and to build reference benchmarks for nongovernment issuers. Most eurobond issuances have been denominated in US dollars but other currencies, including domestic currencies, have also been used. All Pacific Alliance countries, with the exception of Colombia,[33] have links between the domestic central securities depository (CSD) and international CSDs such as Euroclear, which greatly facilitates the participation of foreign investors in the domestic bond market. This has also been illustrated by the use of "domestic syndications" in Chile, Colombia, and Peru where domestic bonds are offered to foreign and local investors through a syndicate of banks, very similar to the book building of a eurobond.

Domestic bond markets

Even though fixed-income markets have expanded in PACs, the public sector remains large and helps drive maturities, depth, and liquidity in the broader capital market. The amount outstanding of domestic government bonds represents significant volumes in absolute terms, as well as relative to GDP and domestic corporate bonds (see table 3.4).

Government bonds are also issued more regularly with re-taps of benchmark bonds to ensure that the average outstanding per line is enough to nourish secondary transactions and ensure liquidity. All Pacific Alliance governments also have put in place a primary dealers framework that facilitates the access of end-investors (pension funds, insurance companies, mutual funds, individuals, etc.) to the bonds, both on the primary and secondary markets. Chile, Colombia, and Mexico issue inflation-linked government bonds in addition to the fixed interest rate products.

Foreign investors have been active in the domestic government bond market of all PACs for some time (see above). Though not totally without risks, as illustrated by several episodes of brutal outflows and sudden stops, it has also contributed to diversifying the investor base as well as instilling international best practices. As a consequence and a cause of this situation, government bonds of PACs are included in most international emerging market bond indices in local currency,

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TABLE 3.4 Domestic Bond Market Outstanding in 2020

	Chile	Colombia	Mexico	Peru
Domestic central government bonds (USD billion)	56.5	88.8	294.3	34.1
Domestic central government bonds as a percentage of GDP	23.7	31.0	27.4	16.1
Non-financial corporates domestic debt securities (USD billion)	-	1.4	35.2	4.4

Source: World Bank, International Monetary Fund, Bank for International Settlements, country authorities.
Note: — = not available.

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TABLE 3.5 Inclusion of Pacific Alliance Government Bonds in Emerging Market Local Currency–Denominated Bond Indices

Index	Number of countries in the index	PA countries in the index
JP Morgan GBI-EM	17	All
FTSE EMGBI	17	All
Bloomberg Barclays EMLCGB	19	All
Markit iBoxx GEMX	23	All

Source: website of the various index providers.

33 Despite the absence of a link with international CSDs, foreign investors are active on the domestic bond market in Colombia through local custodian banks.

such as J.P. Morgan's GBI-EM,[34] an external confirmation of the degree of development of these markets (see table 3.5). Inclusion in such indices is generally conditioned to macrofiscal and legal conditions as well as to demonstrated achievements in terms of domestic market development, including a sufficiently large outstanding of government bonds (both in total and per bond), availability of daily bid/ask prices, and a regular and predictable issuance calendar.

PACIFIC ALLIANCE SOVEREIGN ISSUERS AND ESG ACTIVITIES

Several Pacific Alliance sovereigns have also explored novel ESG strategies, from labeled issuances to active engagement with global ESG investors. In September 2020, Mexico issued an innovative Sustainable Development Goal bond (7-year, US$890 million)[35] (see box 3.1). Colombia has also reported an uptick in engagement with global investors on ESG issues, and has reported on the sovereign's compliance with these factors through surveys and as part of roadshows. In addition, Colombia has recently approved a sustainable bond framework, enabling the sovereign to issue green, social, blue, or sustainable bonds (West 2020) and it is expected to begin issuing labeled instruments in the second half of 2021 (Fieser and Medina 2021).

In December 2020, the World Bank spoke to debt management officials in Chile, Colombia, and Peru to assess their ESG-related activities and plans to date. The World Bank also spoke with debt management officials in Mexico pertaining to their recent labeled bond issuance (see box 3.1).

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BOX 3.1 Mexico's Experience with Sovereign SDG Bonds

On September 14, 2020, Mexico became the first country in the world to issue a sovereign Sustainable Development Goal (SDG) bond, an important step forward in the country's commitment to the achievement of the SDGs.

The SDG sovereign bond was issued under Mexico's new and innovative "SDG Sovereign Bond Framework," which was established in early 2020. Under this institutional setting, the SDG sovereign bond proceeds must be linked to eligible expenditures set out in the federal budget that are a combination of green, resilient, and sustainable social projects. Specifically, the SDG bond issuances will promote eligible projects aligned with the relevant SDGs (11 out of 17) on the basis of multipronged eligibility criteria. The framework also includes a geospatial criterion, related to SDGs associated with social expenditures, to ensure that proceeds are directed toward regions where Mexico's SDG gaps are the greatest, particularly in the south of the country where poverty rates and vulnerabilities to climate change are significant. The eligibility is based on very detailed open data.

The framework adheres to the highest standards in terms of external reviews. Prior to the issuance of bonds, Vigeo Eiris—an international provider of environmental, social, and governance (ESG) research and services for investors and organizations—provided a second party opinion (SPO) to independently assess the alignment of the framework with the International Capital Market Association's Green Bond Principles, Social Bond Principles, and Sustainability Bond Guidelines. The SPO has been made publicly available on the Ministry of Finance's website. It provides bond investors with an independent assessment of the expected social and environmental benefits of the eligible sustainable expenditures. In addition, the Committee of Inclusive and Sustainable Economy, as one of the SDG Specialized Technical Committees of the 2030 Agenda, reviews the information provided by the Ministry of Finance. And the Supreme Audit Institution of the country also verifies the compliance of the eligible sustainable expenditures with the eligibility criteria and the processes defined in the framework.

Moreover, the United Nations Development Programme provided an opinion on the framework in which it assessed that the framework is aligned with the principles and objectives of the Sustainable Development Goals from the United Nations and that it will provide assistance to Mexico on the development of the impact reporting.

The first issuance, a seven-year SDG bond for a total value of US$890 million, inaugurated Mexico's sustainable financing program. The transaction reached a demand of US$5.696 billion, equivalent to 6.4 times the allocated amount; 267 global investment firms participated in the operation.

Source: Eduardo Olaberria, World Bank, with inputs from the Ministry of Finance, Mexico.

34 J.P. Morgan's GBI Emerging Market is currently the most used emerging market indices with US$225 billion of assets under management benchmarked against it (17.5 percent of total emerging market assets).

35 See the SDG Knowledge Hub on the IISD website at http://sdg.iisd.org/news/mexico-issues-sovereign-sdg-bond-for-most-vulnerable-municipalities/.

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TABLE 3.6 Domestic bond market outstanding in 2020

	Chile	Colombia	Mexico	Peru
Labelled instruments (green, social, sustainable)				
Has the government issued a sovereign labelled debt instrument?	Yes – Green and social bonds have been issued	No	Yes	No
If no, is the government considering the issuance of a sovereign labelled instrument?		Yes – The legislature approved the issuance of green, social, blue, or sustainable bonds (December 2020)		Yes – Debt managers are exploring options
Is project identification a challenge?	Yes	Yes	Yes	Yes
Increase sovereign ESG engagement				
Has the DMO incorporated discussion of ESG factors into investor roadshows?	Yes	Yes	Yes	Yes
Other		Debt managers report an increase in specialized ESG surveys from global investors that ask for their feedback on sovereign ESG performance Hired additional staff to manage increased interest in ESG factors		
Leverage the strategic position of the DMO				
Has the debt manager helped influence inter-ministerial coordination to support ESG processes?	Yes – through its work to plan and execute the green and social bonds and related climate finance initiatives	Yes	Yes – through its work to plan and execute the SDG bond issuance	No

Note: n.a. = not applicable. DMO = debt management organization/office; ESG = environmental, social, and governance; SDG = Sustainable Development Goals.

The interviews with debt managers suggest an increasing focus on ESG-sensitive investors, and continued questions about the evolving role of debt management organizations (DMOs) to reflect the changing investor landscape. The debt managers reported increasing interest from conventional sovereign bond investors and ESG-oriented fund managers on how the sovereign might evaluate against different ESG metrics. This increasing interest has been reflected in requests for ESG-focused meetings and discussions with investors, or via special thematic presentations requested and incorporated into marketing roadshows. Several DMOs have begun to create publicly accessible marketing materials to give more credibility to how the sovereign aligns with ESG best practice standards.

As of January 2021, all of the Pacific Alliance sovereigns have either issued labeled instruments or have reported publicly their plans to explore doing so. Although questions remain among some debt managers as to how to streamline project tagging and reporting processes, most report increased pressure to learn from international experiences in this regard to remain on the cutting edge of the intersection between ESG and sovereign debt management.

Corporate green bond issuance has also grown in the Pacific Alliance countries, lending credence to the desire of most sovereigns to also build out a sovereign labeled issuance program. Since 2014, approximately 75 percent of the total ESG issues by PACs have been made by private entities, with Mexican corporations positioned as the issuers with the most volume outstanding. Mexican corporates account for approximately 70 percent of the total PAC corporate issuance, followed by Chile with 19 percent, Peru with 8 percent, and Colombia with only 1 percent. At the sovereign level, however, the market has only recently begun to develop—in 2019, the government of Chile issued for the first time a sovereign ESG instrument, placing it as the first within the region. As of October 2020, the Chilean government has made several ESG issues, which account for 87 percent of the total sovereign issues from PACs. Besides Chile, the only other government that has issued ESG instruments is Mexico, which recently issued an SDG bond.

In 2020, with the onset of the COVID-19 pandemic, ESG bond issuance has slowed. As can be observed in figure 3.1, ESG issues contracted from US$8.5 billion in 2019 to US$4 billion in 2020. Although this contraction was not as strong as that observed during the market slowdown in 2018, it is important to note that more than half of the total 2020 issuances corresponded to Chile's sovereign green bonds issued in January, months before the pandemic arrived in the region. Following Chile's early issuance, no other issue took place during the first and second quarters of the year. During September and October 2020, the market became dynamic again, as corporates from Chile, Mexico, and Peru and the Mexican government issued ESG instruments.

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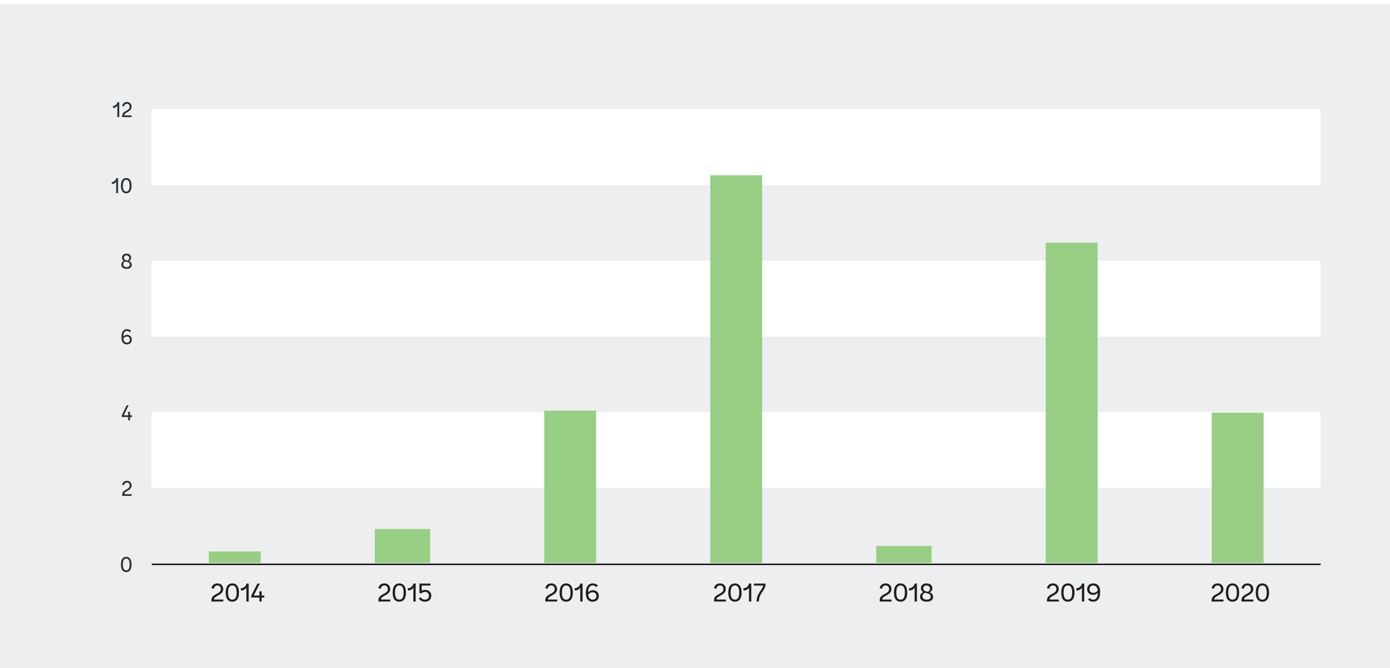
FIGURE 3.1 ESG Bond Issuance by Pacific Alliance Countries



Source: Bloomberg.

KEY TAKEAWAYS FROM THE CHILEAN EXPERIENCE AND BEYOND

Sovereign issuer options

Chile's macroeconomic stability and its fiscal discipline have made the country's debt attractive to both global and domestic investors. Chile´s sustainable growth strategy, orderly and transparent fiscal accounts, prudent macroeconomic policies, and strong policy framework have allowed Chile to earn the highest credit rating in the region. Naturally, this macroeconomic stability and prudent fiscal discipline have lowered perceived risk, making Chilean debt increasingly attractive to investors.

Chile's green bond issuances benefited from both its credible standing as a sovereign debt issuer and increased global and local interest in ESG-labeled products. The timing of Chile's pivot toward issuing ESG-labeled instruments was critical to the success of Chile's issues because the government took advantage of the high foreign demand for green bonds in the United States and Europe, and thus decided to diversify and issue in these two currencies. In addition, most of the green bond issues from other

European sovereigns have had notably low yields; therefore, bonds with slightly higher yields from non-European issuers with a strong reputation and fundamentals, such as Chile, were highly attractive and were met with strong investor demand. Local demand for labeled instruments has begun to evolve, as was seen in the 2020 social bond issuance, in which half of the investors were domestic. The issuance was made in nominal local currency.

Chile's green bonds were issued within the context of a credible ESG framework that lent legitimacy to the instruments, the tagged projects, and the reporting process. Learning from experiences in Belgium, France, and Ireland, Chile's green bond framework was developed in early 2019, in coordination with different government entities, international institutions, and with the support of the Inter-American Development Bank. Because the issuance of labeled instruments carries considerations beyond just financial, the government's goal was to develop a framework that ensures transparency and accountability throughout the issuance process, from the selection of eligible projects and certification, to the placement of the bond, the allocation of resources, and the reporting process. It is not surprising that issuing bonds endorsed by a strong and transparent framework makes them increasingly attractive to foreign ESG investors. In addition, to further stress the importance the government gives to strong frameworks, together with the CMF (Chile's financial market regulator), the government has launched a Climate Change Working Group that is jointly exploring climate risk monitoring, climate risk information dissemination, and the development of a green financial market.[36]

At the time of issuance, sovereign green bonds had already been successfully introduced to market by nine sovereigns; other instruments had a more limited track record. Poland issued the world's first sovereign green bond in December 2016. Since then, more than a dozen sovereigns have issued sovereign green bond instruments, making the instrument well known to the market and helping sovereigns track the expected market impact of these transactions. In contrast, sovereign social bonds and sustainability bond frameworks were only introduced to the market in 2017, with very few sovereign experiences to track. Once Chile understood that it had some margins-to-maneuver with regard to instrument choices, the decision to issue a sovereign green bond carried the least risk and the most potential benefit in relation to instrument options.

However, the onset of the COVID-19 pandemic, combined with the varied macroeconomic and fiscal positions of the Pacific Alliance sovereigns, should contribute to a careful consideration of all ESG activity types, not just labeled debt issuance. Although all the sovereigns in the

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BOX 3.2 Sustainability-Linked Bonds: The Next Frontier?

In June 2020, the International Capital Market Association issued its Sustainability-Linked Bond Principles to guide issuers in the structuring, disclosure, and reporting of sustainability-linked bond instruments. Sustainability-linked bonds embed an environmental, social, and/or governance (ESG)-related key performance indicator (KPI) that issuers commit to achieve within a predetermined time period; the financial or structural characteristics of the instrument will then vary contingent on achievement of the KPI.

Sustainability-linked bonds differ from other labeled instruments, including green bonds, in that proceeds need not be earmarked for specific tagged projects. Instead, the issuance would be used for general purposes, with the KPI-link acting as a forward-looking performance-based target.

As Silva and Stewart (2021) argue, sustainability-linked bonds at the sovereign level could be linked to, for example, sovereign achievement of their own self-defined Nationally Determined Contributions (NDCs) under the Paris Agreement by 2030. Using this as an example, sovereign instruments issued as linked to NDC achievement could come with a coupon that varies once the KPI has been met.

Enel, the Italian utility company, issued four inaugural sustainability-linked bonds in late 2020 (Balasta 2020). The coupons on those securities are tied to Enel's renewable energy generation goals. To date, no sustainability-linked instruments have been issued by a sovereign issuer. Given strong demand by global investors for other ESG-assets, coupled with benefits to the sovereign issuer of reduced project-based tagging and reporting, the instrument may prove appealing. However, it is yet unclear what types of targets and other instrument characteristics would prove appealing to both investors and issuers in the ever-evolving marketplace of ESG investing.

36 For more information, see the CMF press release at https://www.cmfchile.cl/portal/principal/613/w3-article-29015.html.

Pacific Alliance experienced economic expansion prior to the onset of the pandemic, their varied macroeconomic and fiscal positions and sovereign debt market profiles give them differing degrees of freedom in which to operate. Through varied ESG activities—from engaging actively with ESG-oriented investors to contributing to interministerial committees and strengthening understanding of how to contribute to improved ESG outcomes—debt managers can play a key role outside of preparing for and issuing a labeled instrument.

Ensuring macroeconomic stability and conducting prudent fiscal policy have always been key for increasing the attractiveness of sovereign bonds—labeled bonds are no different. The Chilean experience as well as investor interviews reveal that strong fundamentals are key to influencing investor behavior, including ESG-oriented investors. As the region's economies continue to absorb the impacts of COVID-19 on financial markets, continuing to develop the government debt market as a whole remains fundamental; any labeled instrument should serve to strengthen the functioning of the overall market, not undermine it. This implies that significant consideration should be given to how any labeled instrument might affect the debt portfolio's exposure to foreign currency, the duration of the overall government portfolio, or the liquidity of other government instruments, among other considerations. It is also important to note that only green bonds are currently contributing to greater weighting in ESG-weighted indices, including the JESG—not social, SDG, or other labeled instrument types.

Issuance of local currency labeled bonds in the short-term may be complicated due to insufficient domestic demand for ESG instruments. So far, the issuance of labeled bonds in the region has primarily taken place in the euro and US dollar markets. This is not surprising because the development of ESG markets in local currencies remains low, inhibited by insufficient demand and a steep learning curve. For Pacific Alliance countries, increased exposure of a government's debt portfolio to foreign currency and the potential impact of a depreciation of the domestic currency also should be closely considered.

Sovereign issuer opportunities

Chile's governance structure was helpful in reducing implementation costs and speeding up the green bond development process. Chile's interministerial process already involved close coordination between relevant entities; the green bond issuance process was able to leverage these existing institutional features. Debt market transactions are channeled by the DMO and, thus, the office is entrusted with most debt management obligations and decisions. This greatly reduces transaction costs, promotes government coordination, and allows public debt management to be quicker, more efficient, and less bureaucratic. The green bond framework that regulated government debt issues did not require congressional approval and, therefore, the framework was quickly developed and implemented. In addition, the DMO had previously worked in coordination with other government entities, which increased

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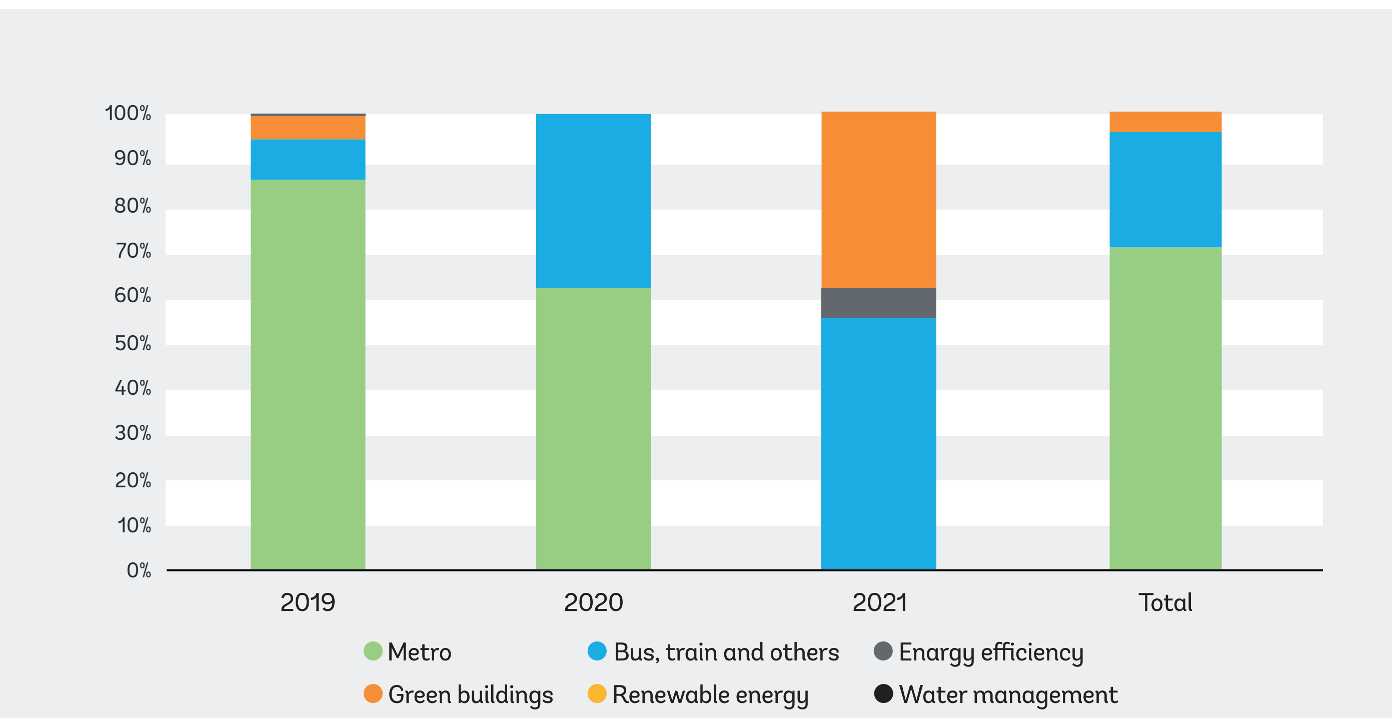
FIGURE 3.2 Chile Sovereign Green Bond Proceeds, By Project and Sector



Source: Chile, Ministry of Finance.

the efficiency of the process. For example, DIPRES (the budget office) helps with the selection of projects because it first identifies those eligible and those that also fit the budget cycle. During the reporting process, the Ministry of Environment takes charge of the impact reports following the issuances.

Chile's success in quickly issuing green, social, and sustainable bonds highlights how a sovereign can leverage previously planned or emergency expenditures. As noted, Chilean debt and budget managers reviewed the list of projects that had been budgeted through normal channels. The list of projects revealed a large project—the Greater Santiago metro project—that was slated for financing and could be considered "green" by international standards. Selecting one high-value project as one of the projects to receive a green bond allocation made the green tagging process much simpler—fewer additional projects would need to be identified to issue and allocate a market-ready bond. Indeed, as demonstrated in figure 3.2, 70 percent of the overall green bond proceeds were allocated to the Greater Santiago metro project. Though expedient from a budgeting, project tagging, and ex post impact and allocation reporting perspective, it may be a difficult model to replicate in other countries or, indeed, in Chile itself.

Chile's thematic bond issuances fit Chile's overall debt management strategy and supported the sovereign's strategic aims to both diversify the investor base and build out foreign currency yield curves. For Chile, the labeled bond issuances were aligned with the DMO's strategy and the country's financing needs because they allowed the government to diversify its investor base consistent with its objectives in relation to currency exposure and building out the yield curves. It also helped develop a new asset class in Chile, generating some positive externalities to the corporate sector. In addition, Chile assessed the convenience of the green bond issues considering the annual borrowing plan and the current state of the market. For example, in the second green bond issuances, the DMO noticed that domestic demand for government debt has shifted toward shorter maturities and this could potentially lower the duration of the overall government bond portfolio farther from the target duration. The green bond issues represented an important opportunity for the government to compensate that development because it could issue longer-maturity bonds in markets in which there was high demand and maintain the duration of the overall bond portfolio close to the target.

Sovereign issuer challenges

The process of issuing a new labeled instrument can be costly and it can take time. The functioning of the DMO and coordination with other government entities can play a key role to facilitate the ease, cost, and efficiency of preparing for a labeled instrument issuance. Sovereigns should take advantage of the existing institutional framework for debt management to help facilitate the implementation process of new labeled bond issuances. Reorganizing tasks inside the debt office and also between government entities might be recommended to further increase efficiency. The Chilean and Mexican experiences clearly show how working in coordination among entities, while also entrusting most debt management decisions exclusively to the DMO, makes the process quicker, less bureaucratic, and saves time and money. Decisions on how to distribute and coordinate tasks among entities should take into account the current institutional framework and governance structure, and also the nature of the labeled issuance. For example, given the nature of green bonds, Chile's DMO worked in close coordination with the Ministry of Environment to develop the green bond framework and delegated the impact reports to its office.

To issue a new labeled instrument and further develop the asset class, developing clear frameworks and guidelines is key. It is strongly recommended that sovereigns develop a comprehensive framework that clearly backs and regulates the issuance process. This action strengthens budget transparency and provides higher accountability, making the issue more attractive to investors. Mexico's labeled instrument is also backed by a comprehensive framework to support the issuance. The issuance was also supported by credible external partners, including development banks and the United Nations Development Programme. In addition, Mexico supported the issuance through the development of an SDG framework that defined the selection of expenditures, management of proceeds, allocation and impact reporting, and an external review (Mexico, Ministry of Finance 2020). Beyond the desire of most ESG investors to understand how a sovereign labeled bond would fit into an overall sustainable development strategy, clearly articulating a green or sustainable financing framework also helps support government planning for climate mitigation and adaptation, and, more broadly, for coherent sustainable development purposes.

Labeled instrument issuance is not a panacea—savvy sustainability-oriented investors increasingly are concerned about a coherent sustainable development framework. If a coherent low-carbon transition development framework is not in place, sustainability-oriented investors may prefer to invest in other economies, even if they do not offer a formal labeled bond program. Although developing a green bond framework can lend credibility to a government's overall sustainable orientation, green bond issuances alone will not be taken kindly if the conventional government program is funding other less environmentally friendly activities.

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Appendix A. Chile's Green Sectors and Expenditure Taxonomy for Green Bonds

Green sectors	Eligible green expenditures	Environmental benefits	SDG related
1. Clean transport	• Investment in public infrastructure and assets enhancing modal shift, electric public passenger transport: - Electrified metro lines: new lines, extension and renovation - Electric buses, charging stations for electric vehicles - Other public transportation like tramways and trains - intermodal infrastructure to connect different clean public transportation, system monitoring and control, passenger safety and security infrastructure and bicycle paths and parking - Subsidies or incentives to promote public transportation	• Air quality improvement • Greenhouse gas reduction through the promotion of low-carbona means of transportation	SDG 3: Health and well-being SDG 11: Sustainable cities and communities SDG 13: Climate action

Green sectors	Eligible green expenditures	Environmental benefits	SDG related
2. Energy efficiency	• Energy efficiency investments in public buildings that result in savings higher than 20 percent, including (but not limited to) retrofit, thermal insulation, and/or upgrades of air conditioning system • Subsidies dedicated to energy efficiency improvements in housing, including (but not limited to) improvement on houses' insulation • Public lighting improvements (for example, replacement with LEDs)	• Energy savings • Greenhouse gas reduction	SDG 3: Health and well-being SDG 11: Sustainable cities and communities SDG 13: Climate action
3. Renewable energy	• Investments in projects from renewable non-fossil sources such as: - Wind energy (onshore) - Solar energy (onshore) - Small run-of-river hydro plants (under 25MW) - Investments in solar/wind energy (onshore) projects that integrate energy generation and storage (batteries) - Training programs to increase technical knowledge in vocational education centers in renewable energies installation	• Long-term low carbon infrastructure provision • Greenhouse gas emission reduction	SDG 7: Clean energy SDG 9: Industry, innovation, and Infrastructure SDG 13: Climate action
4. Living natural resources, land use and marine protected areas	• Forestry - Programs for the conservation and restoration of native and exotic forest - Management and maintenance of National Parks and Conservation Areas • Marine protected areas protection and surveillance (including research)	• Conservation and sustainable use of terrestrial ecosystems • Biodiversity preservation and protection of terrestrial ecosystems	SDG 3: Health and well-being SDG 13: Climate action SDG 14: Life below water SDG 15: Life on land

Green sectors	Eligible green expenditures	Environmental benefits	SDG related
5. Efficient and climate resilient water management	• Water distribution: Installation or upgrade of water-efficient irrigation systems, construction or upgrade of sustainable infrastructure for drinking water (including research or studies) • Waste water management: Installation or upgrade of waste water infrastructure including transport, treatment, and disposal systems • Water resources conservation: Including protection of water catchment areas and prevention of pollution affecting water supplies • Flood defense systems against riverine inundations: Including construction of reservoirs for the control of water flows	• Water resources conservation • Climate change adaptation • Reduction of water consumption • Climate change adaptation and resilience, considering meteorological extreme events	SDG 6: Clean water SDG 9: Industry, innovation, and infrastructure
6. Green building	• Design and construction of public buildings certified under “Sistema Nacional de Certificación de Calidad Ambiental y Eficiencia Energética para Edificios de Uso Público” • Costs associated with retrofits to existing public buildings to meet “Certificación Edificio Sustentable” or to improve the current certification level	• Energy savings • Greenhouse gas emission reduction	SDG 9: Industry, innovation, and infrastructure SDG 11: Sustainable cities and communities SDG 13: Climate action

Source: Chile, Ministry of Finance 2019e.
Note: SDG = Sustainable Development Goal.

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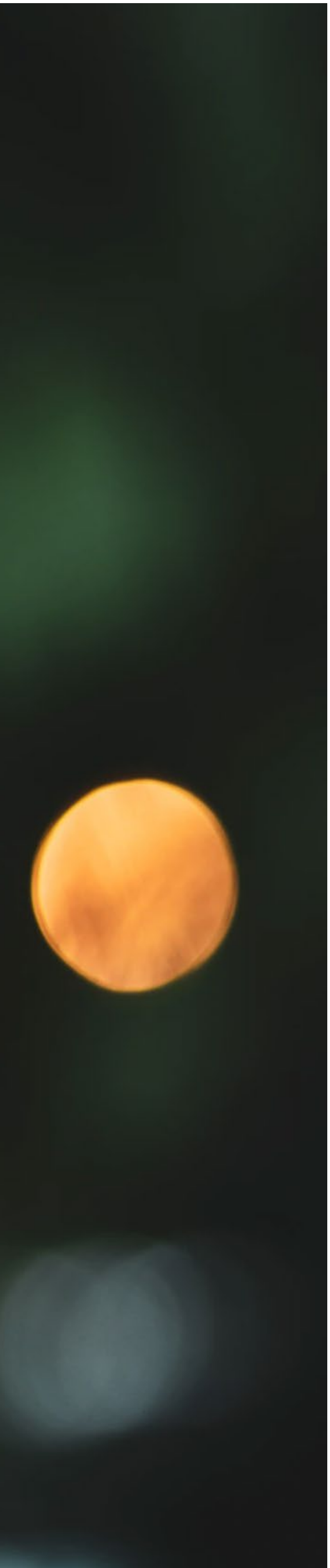
Appendix B. Asset Managers and Sovereign Bond ESG Integration Policies

Asset manager	Title	Year
Neuberger Berman	ESG Factors in Sovereign Debt Investing	2013
PGIM	Our Sovereign ESG Framework	2017
Aberdeen Standard	Considering ESG for Emerging Market Sovereigns	2018
Aegon Asset Management	ESG Integration in Sovereign Portfolios	2018
Franklin Templeton	Environmental, Social and Governance Factors in Global Macro Investing	2018
Lazard Asset Manangement	Giving Credit Where It's Due - ESG Factors in EM Soverreign Debt	2018
PIMCO	Applying ESG Analysis to Sovereign Bonds	2018
Western Asset Management	ESG Investing in Sovereigns: Navigating the Challenges and Opportunities	2018
Allianz Global Investors	An ESG framework for EM Sovereign Bonds	2019
Aviva Investors	Sovereign interest: ESG matters in emerging market debt	2019
Barings	ESG for Sovereign: One Size Does Not Fit All	2019
BlackRock	Sustainabilitu: the bond that endures	2019
BlueBay and Varisk Maplecroft	The Role of ESG Factors in Sovereign Debt Investing	2019
Hermes Investment Management and Beyond Ratings	Pricing ESG Risk in Sovereign Credit	2019
M&G Investments	Are government bonds compatible with an ESG approach?	2019
Morgan Stanley Investment Management	ESG and Sovereign Fixed Income Investing: A better Way	2019
TCW	Incorporating Environmental, Social, and Governance (ESG) Factors into the Investment Process	2020



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