

Green Liquidity Moves Mainstream

July 7, 2021

(Editor's Note: This article is a thought leadership report that neither addresses views about ratings on individual entities nor is a rating action. S&P Global Ratings, S&P Global Market Intelligence, and S&P Dow Jones Indices are separate and independent divisions of S&P Global.)

Key Takeaways

- Liquidity across sustainable debt markets is steadily increasing as primary markets expand and interest grows in lower-rated credit sectors.
- There are signs that sustainable bonds may be pricing at a premium in certain sectors, although it is difficult to isolate ESG factors.
- Improved standardization within sustainable debt markets could bolster overall liquidity further, but higher financing costs and lower liquidity could impact issuers that fail to meet investors' ESG thresholds.
- Greening monetary policy operations might not be an easy task, but options exist, and their implementation could accelerate the development of green liquidity, especially in the corporate bond space.

As issuers' needs to finance their environmental, social, and governance (ESG) objectives rise and sustainable finance debt issuance accelerates, this should augur well for the future growth and stability of sustainable debt markets. But can we find compelling evidence of increased market liquidity and a greenium--a premium for sustainable debt--within these markets? Furthermore, as central banks continue to play a pivotal role in global markets, how important will future policy decisions be in bolstering the liquidity of sustainable debt markets?

Liquidity Grows As Sustainable Debt Surges

When evaluating the relative liquidity of a market, pricing is clearly a core component--and is certainly a hot topic within sustainable debt markets. But before we discuss pricing, it's important to explore the many other interrelated factors that play a significant role. Scale--in terms of issuance volume and product type--is a telltale sign of a growing market and increased liquidity. By both measures, the sustainable finance market has steadily grown over the last three years. S&P Global Ratings forecasts a 40% year-over-year increase in sustainable debt issuance in 2021 (see "[Sustainable Debt Markets Surge As Social And Transition Financing Take Root](#)," published Jan. 27, 2021). This level of growth is no small feat as it follows a significant growth rate of about 85% in 2020 (see chart 1). According to data from Environmental Finance, the average size of

PRIMARY AUTHORS

Patrick Drury Byrne

Dublin
(00353) 1 568 0605
patrick.drurybyrne
@spglobal.com

Sandeep Chana

London
+ 44 20 7176 3923
sandeep.chana
@spglobal.com

SECONDARY CONTACT

Lori Shapiro, CFA

New York
+ 1 (212) 438 0424
lori.shapiro
@spglobal.com

CHIEF EMEA ECONOMIST

Sylvain Broyer

Frankfurt
+ 49 693 399 9156
sylvain.broyer
@spglobal.com

CONTRIBUTORS

Brian D. Luke, CFA

S&P Dow Jones Indices, New York
(1) 212-438-8013
brian.luke
@spglobal.com

Marina Lukatsky

Leveraged Commentary & Data, New York
(1) 212-438-2709
marina.lukatsky
@spglobal.com

See complete contact list at end of article.

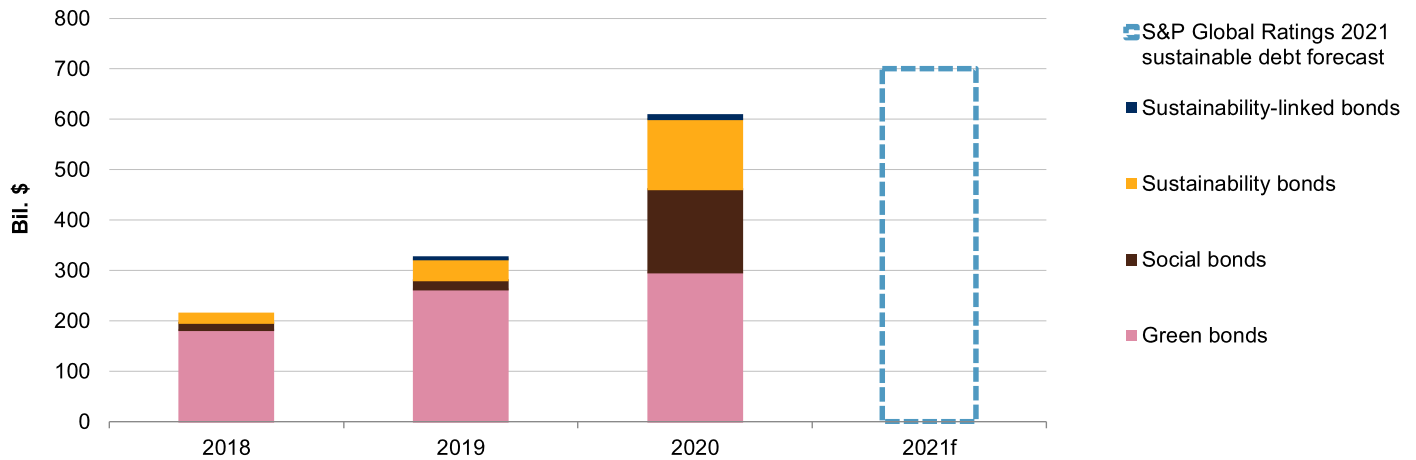
Green Liquidity Moves Mainstream

sustainable debt transactions has also steadily increased since 2011--a key trend since larger transactions are typically more liquid (see chart 2).

Chart 1

Sustainable Debt Issuance Surpassed \$500 Billion In 2020

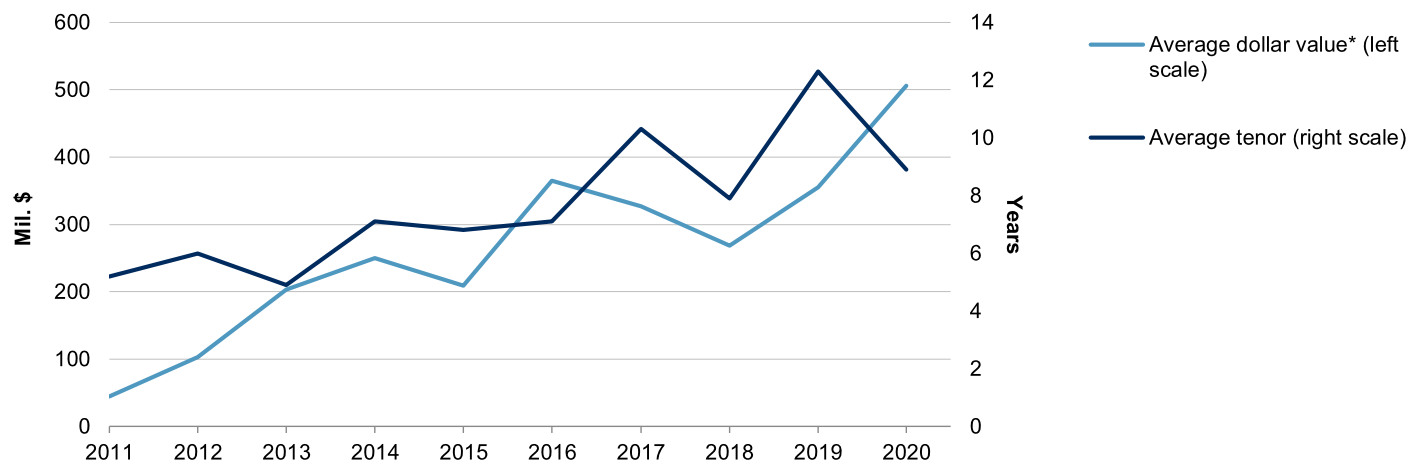
Annual issuance in sustainable debt by instrument type



f--Forecast. Source: Environmental Finance and S&P Global Ratings.
Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Chart 2

Average Sustainable Debt Issuance And Tenor



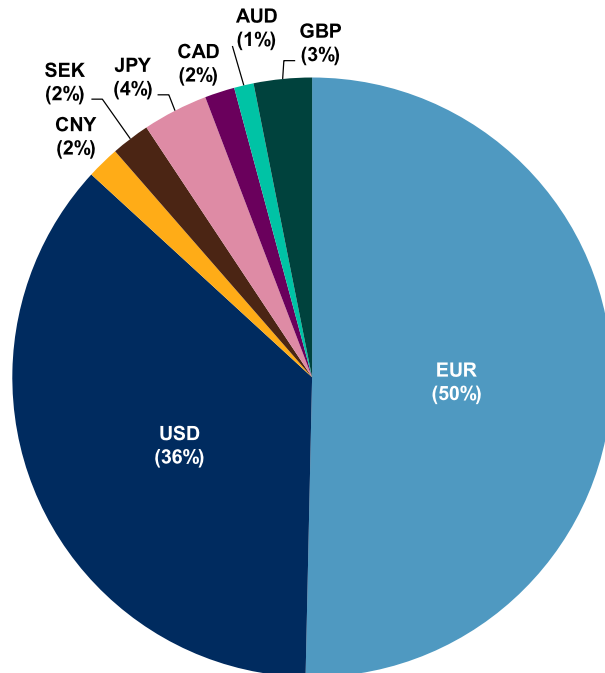
*Average dollar value excluding Fannie Mae. Source: Environmental Finance.
Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Green Liquidity Moves Mainstream

Another key sign of increasing market liquidity is the globalization of the market. Sustainable debt was issued in 32 different currencies in 2020 (see chart 3). While Europe and the U.S. are the dominant markets--and the euro and dollar the main currencies--it is noteworthy that the largest sovereign social bond in 2020 was issued by Chile, and the largest corporate social bond was issued by a Japanese company.

Chart 3

Sustainable Debt Issuance By Currency In 2020



Source: Environmental Finance.

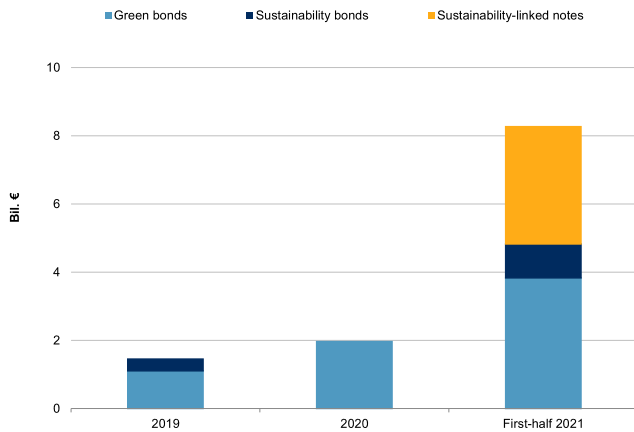
Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

When we look closer at specific asset classes, there has been growth in some sectors that are lower rated and therefore arguably less liquid. According to a recent report by LCD, a division of S&P Global Market Intelligence (see "[ESG Goes Mainstream Across Global Leveraged Finance Markets In 2021](#)," published June 25, 2021), the European and U.S. high-yield bond sectors have shown strong year-on-year growth, in particular for sustainability-linked notes (see chart 4 and 5). Sustainability-linked notes have a step-up in coupon that is linked to ESG-related performance indicators. Interestingly, the step-up offers no pricing benefit to issuers if they meet their targets, only a penalty if they miss them. This approach differs from the European term-loan market, which does offer pricing benefits, and more than a quarter of European term loans now have a pricing mechanism with ESG language incorporated.

Green Liquidity Moves Mainstream

Chart 4

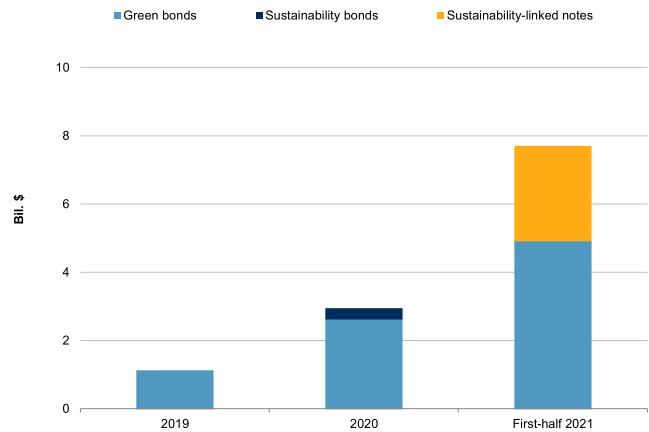
European ESG High-Yield Bond Volumes



Source: LCD, an offering of S&P Global Market Intelligence.
Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Chart 5

U.S. ESG High-Yield Bond Volumes



Source: LCD, an offering of S&P Global Market Intelligence.
Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Increased market liquidity is also often correlated with increased investor demand. More investors are beginning to incorporate ESG themes within their investment mandates. A survey of 728 fixed-income institutional investors carried out by AtoZ Marketing Analysis and Kadence International in June 2020 reinforces this point (see table). According to respondents, 77% of investors consider the ESG characteristics of issuers and investments as part of their investment process.

Fixed-Income Institutional Investors Surveyed On ESG

Consider ESG characteristics of issuers and investments	77%
---	-----

Among those who consider ESG characteristics

Use ESG scores to build investment portfolios	52%
Use ESG information to identify investments that make a positive impact, such as green investments	65%
Use ESG information for negative screening to avoid certain sectors as part of an exclusionary strategy	63%

ESG--Environmental, social, and governance. Source: Survey of 728 fixed-income institutional investors by AtoZ Marketing Analysis and Kadence International, June 2020.

Importantly, as the survey results highlight, investors' ESG strategies are not only limited to ESG characteristics, but also increasingly include elements of a socially responsible investment strategy. For example, investors may exclude investments that do not meet their ESG thresholds--arguably placing the burden of responsibility back on issuers. While this is a key trend in the evolution of ESG investing, it may over time unintentionally reduce liquidity as identifying, evaluating, and assessing ESG themes becomes clearer. A narrower approach over time may lead to fewer or more costly financing options and could result in less market liquidity for certain sectors that remain an important part of the global economy. Some sectors are already beginning to experience these challenges (see "[The Energy Transition: ESG Concerns Are Starting To Present Capital Market Challenges To North American Energy Companies](#)," published June 14, 2021).

Greening CLOs: Helping Or Hindering Portfolio Management?

The European collateralized loan obligation (CLO) market--which has experienced rapid growth in 2021--is an interesting case in point. CLO managers, acting as both issuers and investors, have become increasingly focused on ESG-compliant investing, with ESG features and undertakings becoming more prevalent in transactions. Chief among these requirements is negative screening, by which a CLO manager is prohibited from purchasing loans or bonds from certain industries. This could include those that engage in speculative extraction of oil and gas or thermal coal activities, although many of these industries are rarely included within CLO portfolios. Further measures can be seen in CLOs that exclude businesses that source the majority of their revenue from activities that violate global sustainable principles, such as United Nations Global Compact (UNGC) violations, and the introduction of positive screening language, where CLOs target loans from companies trying to improve ESG profiles.

Although these initiatives are positive from a societal perspective, it is uncertain whether the ESG requirements actually help or hinder the creation and management of CLO portfolios. It is possible that the restrictions on investing in certain industries could lead to more concentrated CLO portfolios. This is not evident yet, as CLOs rated by S&P Global Ratings continue to be backed by relatively well-diversified portfolios spread across a variety of industries. Of course, this may simply imply that CLOs would not otherwise be invested in these industries to begin with, irrespective of their ESG requirements. However, the risk remains that the increasing inclusion of ESG conditions may hamper portfolio and industry diversification in the long term.

Seeking Out The "Greenium"

Although liquidity within sustainable debt markets is growing, it is less clear whether financing cost benefits accrue to issuers of these instruments and whether investors are willing to pay a premium for sustainable bonds. Many macro and idiosyncratic factors influence bond pricing, which makes it difficult to isolate the ESG impact. However, without placing too much weight on any specific data point, data from different corners of the market suggests that there may be a pricing advantage for issuers that pass investors' ESG investment criteria.

The clearing yield is a good place to start. Calculations derived from Refinitiv data suggest that, since June 2017, the median clearing yield for senior nonfinancial corporate sustainability bonds in Europe has been broadly tighter than for conventional bonds (see chart 6). Recent concession data for the same data set shows that concessions offered for European sustainability bonds are broadly lower than for conventional bonds--particularly at lower rating levels (see chart 7).

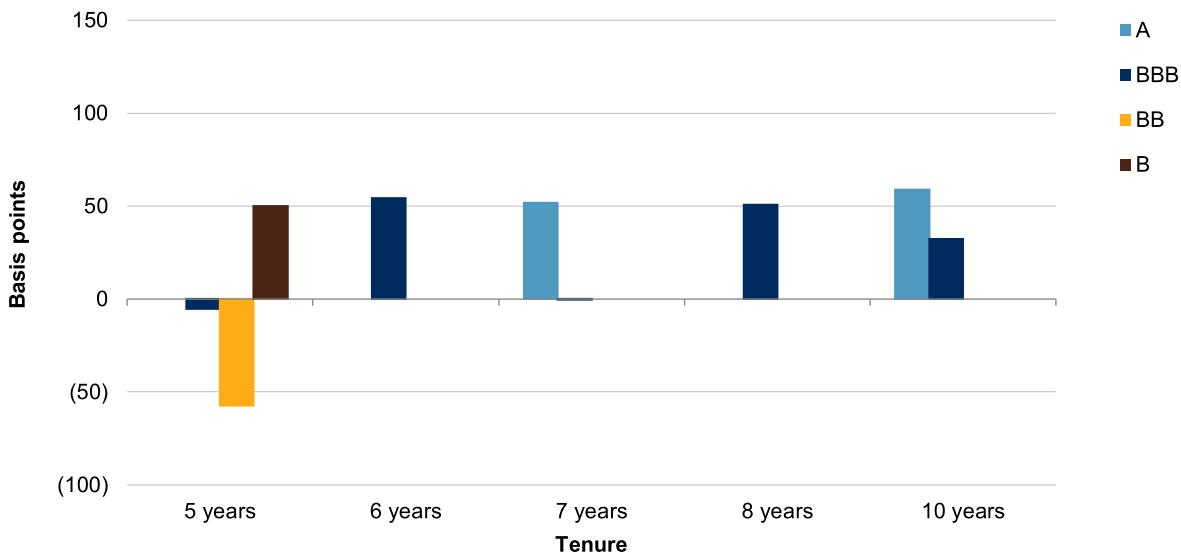
While many non-ESG factors also influence clearing yields, the same trends seem to hold, at least anecdotally, in parts of the market that would typically be less liquid. According to a report from LCD, "[Sustainability-Linked Bonds Offer Pricing Perk For Right Credits](#)," published May 27, 2021, anecdotal evidence suggests that initial demand for sustainability-linked transactions in the European speculative-grade market could be 30%-40% greater than for conventional bonds. This is because investors with multiple funds are placing larger orders, rather than a higher number of orders.

Green Liquidity Moves Mainstream

The strong demand for sustainable instruments relative to a still-limited supply has translated into favorable financing costs for some issuers. According to LCD, for instance, Europe's first sustainability-linked, speculative-grade bond deal--a €650 million issuance by Greece's Public Power Corp. S.A.--priced in March to yield 3.875%, while senior notes for similarly rated issuers have averaged a yield of 4.890%. There is also some anecdotal evidence to suggest that CLOs with documented ESG requirements may appeal to a wider investor base than traditional CLOs, with lower clearing yields particularly for lower-rated tranches.

Chart 6

Spread Between Median Clearing Yields For Sustainability Bonds And Conventional Bonds



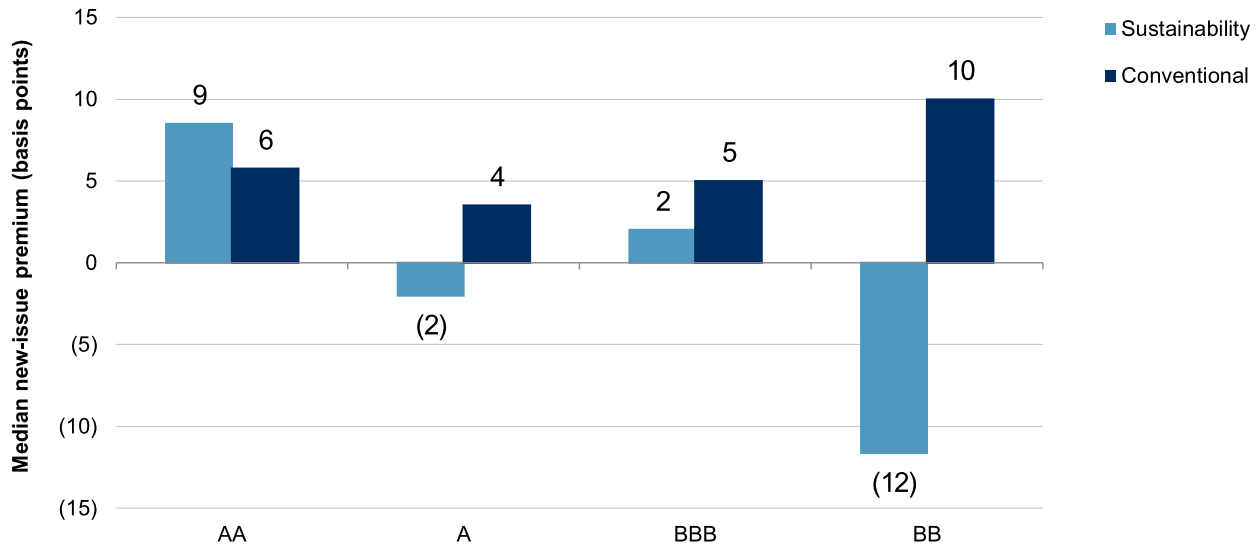
Note: Data includes all senior euro-denominated deals by nonfinancial corporates since June 2017.

Sources: S&P Global Ratings calculations, Refinitiv.

Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Chart 7

Concessions Offered In The Primary Markets



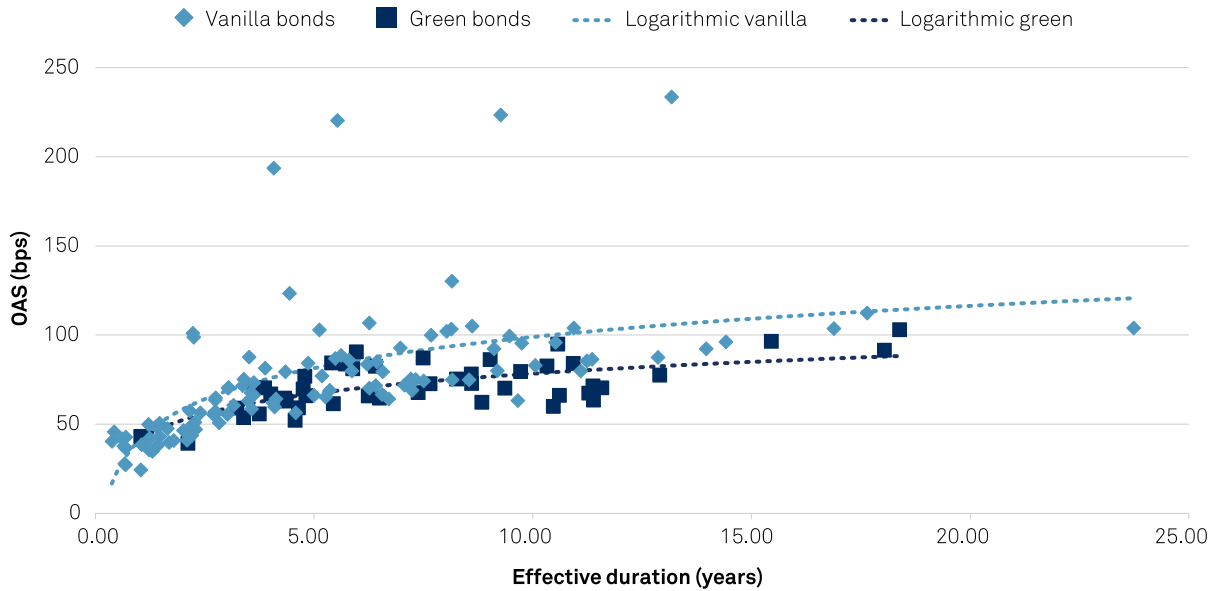
Note: Data includes all senior euro-denominated deals by nonfinancial corporates since June 2017. Sample size is small for 'AA' and 'BB' categories. Sources: S&P Global Ratings calculations, Refinitiv. Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

More compelling evidence supports the presence of a greenium, at least in certain sectors. An analysis by S&P Dow Jones Indices (SPDJI) sought to isolate and highlight a investor greenium by constructing credit curves of similar bond issuance. First, SPDJI constructed a credit curve evaluating over 100 conventional European utilities bonds against 46 green bonds (see chart 8). Evidence of investors paying a premium for green bonds across this sector is apparent, illustrated by the lower yield offered. Spread deviation for vanilla bonds in the sample is significantly higher than that for green bonds, contributing to an overall higher curve. For example, the largest deviation of spread among green bonds is approximately 20 basis points (bps), compared to 120 bps for vanilla bonds. SPDJI also did a similar analysis using a sample pool of European senior bank debt with an index rating of 'A' (see chart 9). The results show similar patterns: a small premium with tighter dispersion across the sample size.

Green Liquidity Moves Mainstream

Chart 8

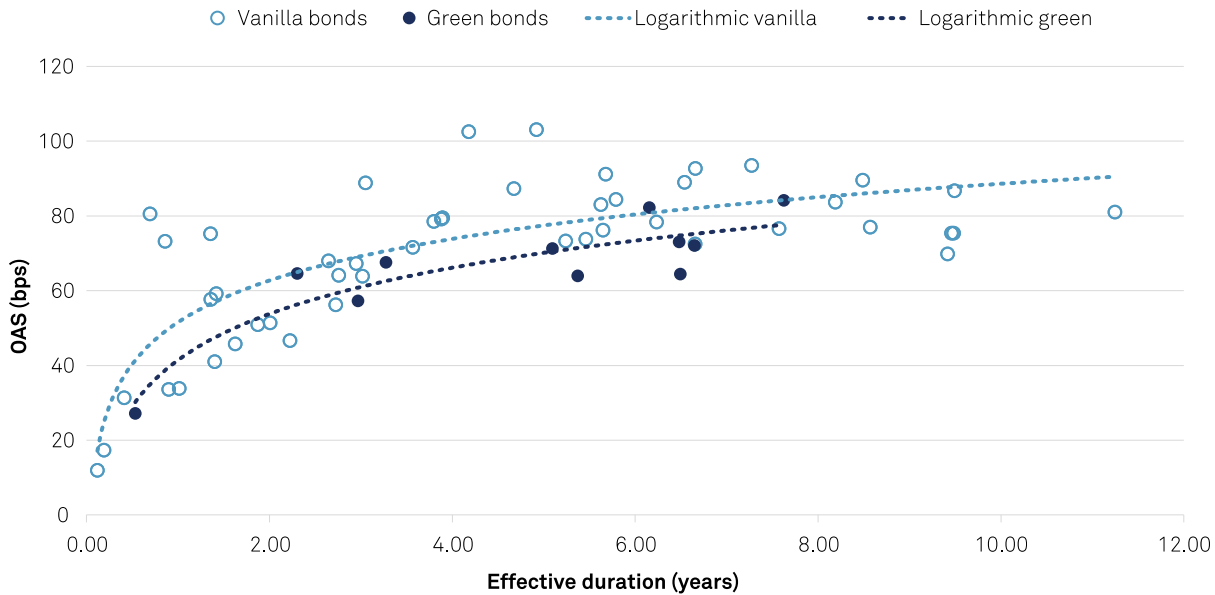
Utilities Credit Curve



OAS--Option-adjusted spread. Note: Data is as of May 31, 2021. Sources: S&P Dow Jones Indices, S&P Eurozone Investment Grade Corporate Bond Index, and S&P Green Bond Index. Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Chart 9

'A' Nonpreferred Bank Credit Curve



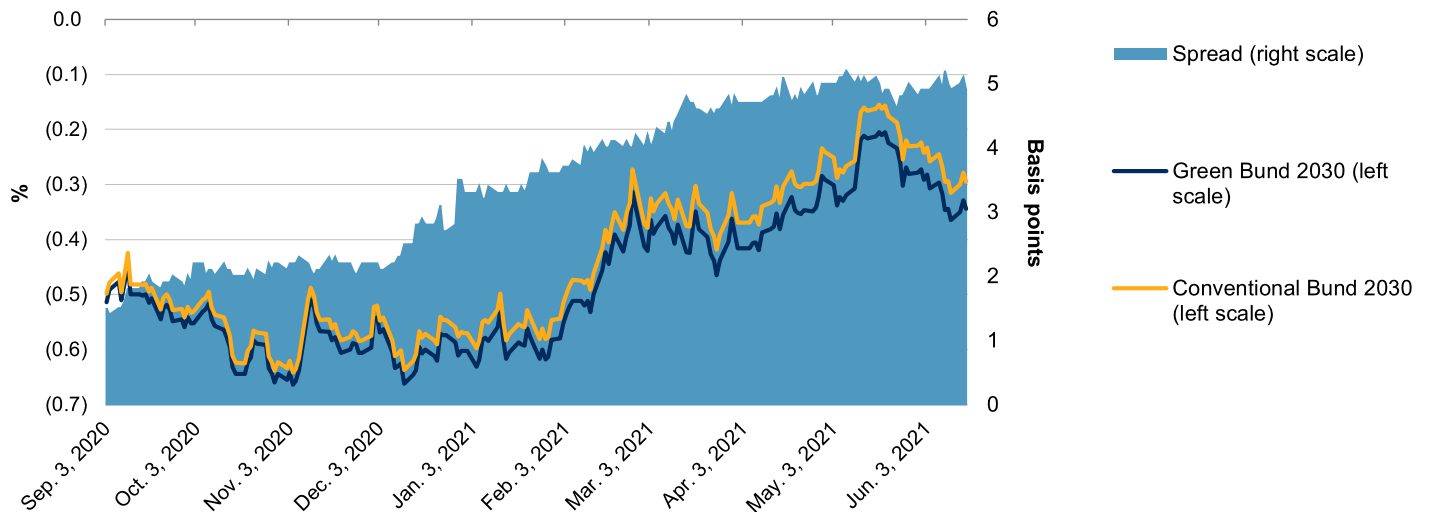
OAS--Option-adjusted spread. Note: Data is as of May 31, 2021. Sources: S&P Dow Jones Indices, S&P Eurozone Investment Grade Corporate Bond Index, and S&P Green Bond Index. Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

Green Liquidity Moves Mainstream

The spread differentials between German green bonds and conventional bonds also support the presence of a greenium in certain sectors. Green bonds trade at a premium to conventional bonds with similar maturities. While small, the differential is apparent and relevant given that duration and credit risk have been removed from the pricing equation.

Chart 10

German Bunds: Green Compared With Conventional



Source: S&P Global Market Intelligence.

Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

All of these examples suggest that a greenium may be present in certain sectors, providing a pricing benefit to issuers who can demonstrate the required ESG credentials, but this evidence is not definitive given the various factors that influence bond pricing. Furthermore, liquidity in sustainable debt markets is unlikely to approach the levels of conventional markets until the sustainable debt markets make further progress in addressing its key challenges. The more transparent and comparable a market is, the more liquid the instruments are likely to be.

Progress in standardizing data, product standards, and reporting may improve transparency in the sustainable finance market. For example, there may be momentum from the EU's Taxonomy Regulation, which determines what constitutes a sustainable investment in Europe (see "[A Short Guide to the EU's Taxonomy Regulation](#)," published May 12, 2021) and from the new Article 8 and 9 sustainable investment product designations under the EU's Sustainable Finance Disclosure Regulation (see "[What Is The Impact Of The EU Sustainable Finance Disclosure Regulation \(SFDR\)?](#)" published April 1, 2021). Additional sustainable investment labels are expected in the EU, which will be directly linked to the Taxonomy Regulation, such as a new EU Green Bond Standard.

Individual stakeholders in the market seeking to tighten standards to avoid the risk of greenwashing will also contribute to greater transparency. For instance, according to LCD, the European Leveraged Finance Association and the Loan Market Association are working together on guidelines to ensure that market participants incorporate ESG provisions in an effective and appropriate manner, as pricing mechanisms linked to ESG performance become more prevalent.

As issuers' needs to finance their ESG objectives rise and sustainable debt markets continue to grow, the more important it will be to create a level playing field for issuers and investors.

The Path To Greener Monetary Policy

As central banks hold sway over current financing conditions, understanding their future role is becoming increasingly important to sustainable debt market participants. The role of monetary policy in addressing and mitigating climate change is a complex undertaking--and one that is evolving quickly. Whether monetary policy should play a role is no longer a matter of debate. Instead, the prevailing view is that central banks must act in unison with fiscal authorities, regulators, and supervisors, as climate stability is a prerequisite to financial stability and thus to price stability. The question of whether the legal mandate for central bank's independent inflation-targeting allows them to address climate challenges--a critical question for the European Central Bank (ECB)--has also been settled. Now, the question is how can monetary policy effectively be greened.

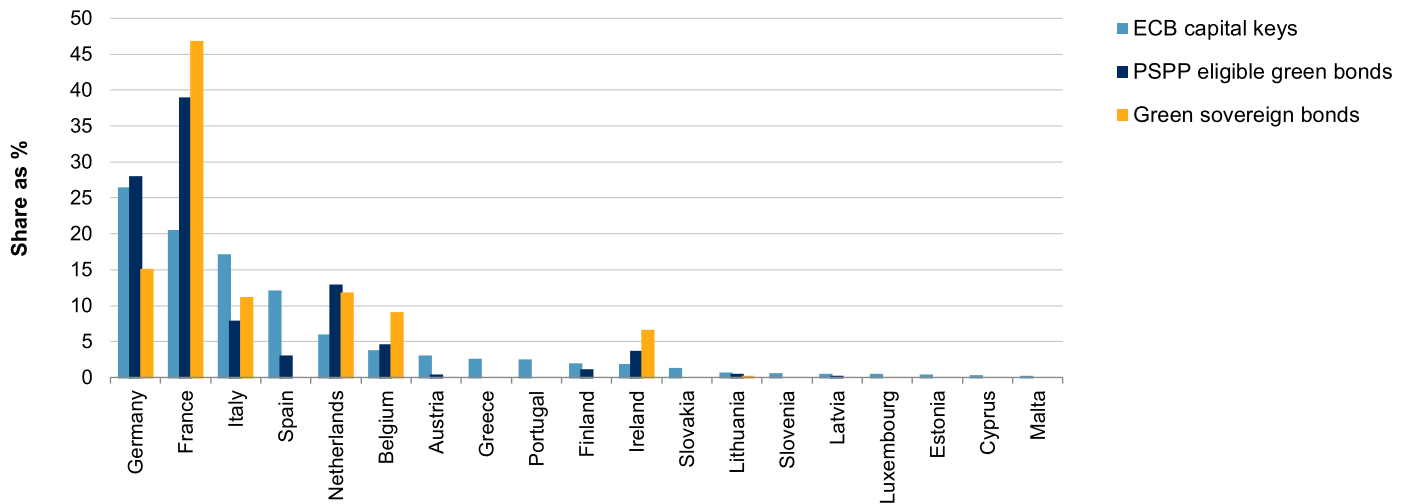
This needs to be handled with care. Central banks will need to find the right balance of policy instruments to deliver on the primary mandate of price stability on one hand, while mitigating their balance sheet risks and supporting the green transition on the other. This is necessary to avoid falling "from green neglect to green dominance," as Isabel Schnabel, Member of the Executive Board of the ECB, said in a speech this year. In a recent study, a group of experts from the Network for Greening the Financial System (NGFS), a network that currently represents more than 80 central banks and financial supervisors worldwide, concluded that four avenues look the most promising in meeting their stated objectives. The four options consist of tilting asset purchases toward climate-friendly assets, implementing a positive screening strategy, aligning the pool of collateral to climate factors, and adjusting the price of lending operations to reflect the counterparties' climate-related lending (see Related Research for more information).

That said, no option provides a silver bullet, and the four avenues are not yet totally practicable. Some roadblocks still include issuers' and lenders' incomplete disclosures of climate-related exposures and the limited--although growing--supply of green financial assets. What's more, not all four avenues are equally practicable to all central banks. For the ECB, tilting public sector bond purchases toward green bonds will be challenging because the ECB also needs to respect the capital allocation keys. Even the pandemic emergency purchase program (PEPP), which is supposed to be flexible in this respect, does not deviate much from the capital keys. This may be because of the provisional nature of the PEPP and the need to eventually bring it in line with the public sector purchase program (PSPP) guidelines. The supply of green public sector bonds that are eligible to quantitative easing (QE) does not match the ECB's capital keys (see chart 11). Respecting market neutrality while purchasing green bonds that are eligible to the PSPP would lead the ECB to overweight French debt. The EU's issuance of green bonds as part of its Next Generation EU plan financing could help the ECB meet the capital key guidance, should the ECB maintain this guidance for the PSPP in the future.

Chart 11

Greening ECB QE While Respecting Market Neutrality And Capital Keys Would Be Challenging

Breakdown of green bonds eligible to the PSPP by country and capital keys



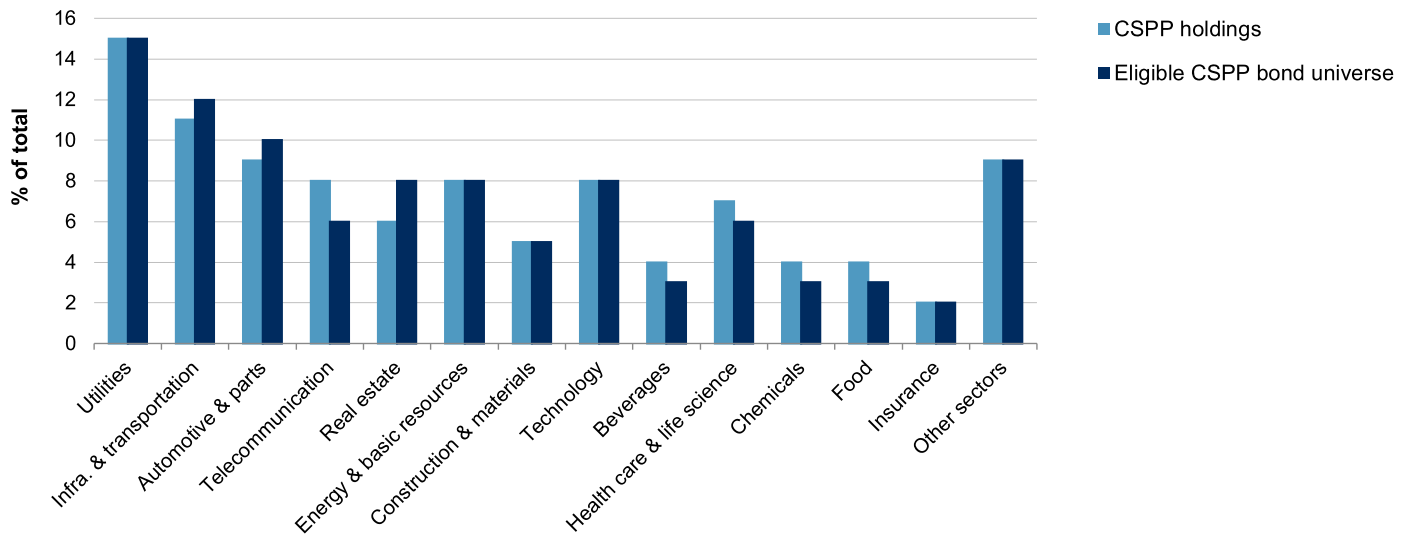
Note: Green bonds eligible to the PSPP are bonds aligned with Climate Bonds Initiative standards issued by central and local governments, government-backed agencies, and development banks with maturity between one and 30 years. ECB--European Central Bank. QE--Quantitative easing. PSPP--Public sector purchase program. Source: S&P Global Ratings and Climate Bond Initiative.

Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

For these reasons, tilting corporate bond purchases may offer a simpler way to green ECB's monetary policy, but this would not be without challenges. The first hurdle is that the corporate sector purchase program (CSPP) does not make up more than 8% of bonds held by the ECB for monetary policy reasons. What's more, we estimate that a bit less than 7% of the portfolio of corporate bonds held by the ECB are included in the Climate Bonds Initiative database for green bonds. Conventional bonds are likely to dominate CSPP holdings and purchases for some time (see chart 12), even if the ECB overcomes the principle of market neutrality on this QE program, as Philip Lane, the ECB chief economist suggested on a panel recently. That said, tilting the CSPP toward green bonds would be a signal for financial markets, which might help foster and accelerate their greening.

Chart 12

Economic Sector Distribution Of CSPP Holdings And The Eligible Bond Universe



CSPP--Corporate sector purchase program. Source: European Central Bank.
 Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

The future of sustainable debt looks bright, and liquidity is steadily improving. Further progress will largely depend on the standardization of data, product standards, and reporting, as well as the decision-making of key stakeholders, including central banks. As ESG and credit markets become even more interdependent, the importance of fully functioning, liquid sustainable credit markets will only increase.

The authors would like to thank Aude Guez for research support on the section titled The Path To Greener Monetary Policy.

Related Research

S&P Global research

- [European Hospitals Turn To Sustainability-Linked Financing To Advance The ESG Goals](#), July 1, 2021
- [ESG Goes Mainstream Across Global Leveraged Finance Markets In 2021](#), June 25, 2021
- [The Energy Transition: ESG Concerns Are Starting To Present Capital Market Challenges To North American Energy Companies](#), June 14, 2021
- [Sustainability-Linked Bonds Offer Pricing Perk For Right Credits](#), May 27, 2021
- [A Short Guide to the EU's Taxonomy Regulation](#), May 12, 2021
- [What Is The Impact Of The EU Sustainable Finance Disclosure Regulation \(SFDR\)?](#) April 1, 2021

Green Liquidity Moves Mainstream

- [Sustainable Debt Markets Surge As Social And Transition Financing Take Root](#), Jan. 27, 2021

External research

- "Taking stock: The ECB strategy review and current challenges for monetary policy," Official Monetary and Financial Institutions Forum (OMFIF) virtual panel, May 5, 2021 (<https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210505~01af2bde18.en.pdf?cdfa982d828b1cef6ad365b2413d3747>)
- "Adapting central bank operations to a hotter world," The Network of Central Banks and Supervisors for Greening the Financial System (NGFS), March 2021 (<https://www.ngfs.net/en/adapting-central-bank-operations-hotter-world-reviewing-some-options>)
- "From green neglect to green dominance?" speech by Isabel Schnabel, Member of the Executive Board of the ECB, at the "Greening Monetary Policy – Central Banking and Climate Change" online seminar, organized as part of the "Cleveland Fed Conversations on Central Banking," March 3, 2021 (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210303_1~f3df48854e.en.html?form=MY01SV&OCID=MY01SV)

This report does not constitute a rating action.

S&P Global's opinions, quotes, and credit-related and other analyses are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security.

Contact List

PRIMARY AUTHORS

Patrick Drury Byrne
Dublin
(00353) 1 568 0605
patrick.drurybyrne@spglobal.com

PRIMARY AUTHORS

Sandeep Chana
London
+ 44 20 7176 3923
sandeep.chana@spglobal.com

SECONDARY CONTACT

Lori Shapiro, CFA
New York
+ 1 (212) 438 0424
lori.shapiro@spglobal.com

CHIEF EMEA ECONOMIST

Sylvain Broyer
Frankfurt
+ 49 693 399 9156
sylvain.broyer@spglobal.com

CONTRIBUTOR

Brian D. Luke, CFA
S&P Dow Jones Indices, New York
(1) 212-438-8013
brian.luke@spglobal.com

CONTRIBUTOR

Marina Lukatsky
Leveraged Commentary & Data, New York
(1) 212-438-2709
marina.lukatsky@spglobal.com

RESEARCH CONTRIBUTOR

Yogesh Balasubramanian
CRISIL Global Analytical Center, an S&P affiliate,
Mumbai

Copyright © 2021 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses, and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw, or suspend such acknowledgement at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, www.standardandpoors.com (free of charge), and www.capitaliq.com (subscription), and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.