FinTech and sustainable bond markets

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Introduction

ESG-based investing is a key trend which is expected to accelerate further and transform bond markets fundamentally in the coming years. FinTech cuts across the entire value chain of bond markets. However, most existing solutions are generally agnostic to the use of proceeds of a bond or issuers' commitments to sustainability. A key consideration for ICMA and its members is therefore how to leverage FinTech to further sustainability in the international debt capital markets.

As a result of discussions with ICMA members comprising issuers, investors, banks and data providers across Europe, Asia and North America, this article seeks to outline the opportunities and challenges encountered by market stakeholders and reflect on potential solutions to harness the potential of FinTech in sustainable bond markets.

The article is divided into the following sections: (i) literature review of selected publications on FinTech and sustainable finance; (ii) a high-level overview of the Green, Social and Sustainability-Linked Bond Principles; (iii) selected key regulatory developments; and (iv) perspectives from market participants and data providers.

(i) Literature review: FinTech and sustainable finance

According to the G20 Sustainable Finance Study Group, access to large amounts of data at high speed and low cost is the foundation of increasing opportunities for investments in sustainable assets.[1] Use cases identified by the International Platform on Sustainable Finance (IPSF)[2] include enhancement of environmental risk management and investment screening; enablement of real-time tracking and verification of sustainable investment outcomes; increased credibility of green finance products; increased traceability of supply chains; and greater access to sustainable investment opportunities.

Technologies used to achieve these opportunities facilitate the gathering, processing, analysis, or distribution of data. Large quantities of data from various sources and at increasing volumes (ie Big Data) enhance both ESG and Sustainable Development Goal (SDG) analytics and reporting capabilities using Artificial Intelligence (AI) algorithms, including Natural Language Processing (NLP) and Machine Learning (ML).[3] Internet of Things (IoT) remote-sensing capabilities and satellite technology provide new, real-time data feeds, which can improve tracking and verification of sustainable projects.[4] Distributed ledger technology (DLT) is considered a key technology in fostering the growth of

1. G20 Sustainable Finance Study Group, 2020. *Sustainable Finance Synthesis Report.*

2. International Platform on Sustainable Finance (IPSF), 2020. *IPSF Annual Report.*

3. Antoncic, M., Bekaert, G., Rothenberg, R. and Noguer, M 2020. *Sustainable Investment - Exploring the Linkage between Alpha, ESG, and SDG's.*

4. IPSF, 2020. See note above.

sustainable bond markets, for example, to develop green bond issuance architectures and tracking platforms where immutable data is shared between multiple parties.[5]

(ii) Overview of the Green, Social and Sustainability-Linked Bond Principles

The Green Bond Principles (GBP), Social Bond Principles (SBP), and Sustainability Bond Guidelines are the globally recognised *de facto* market standards for green, social and sustainability bonds, which are all use-of-proceeds instruments.[6] These Principles consist of four core components: (i) use of proceeds; (ii) process for project evaluation and selection; (iii) management of proceeds; and (iv) reporting (including allocation and impact reporting).

In June 2020, new principles were released in response to the emergence of sustainability-linked bonds (SLBs): The Sustainability-Linked Bond Principles (SLBP). These are voluntary guidelines for SLBs defined as forward-looking performance-based bond instruments where the issuer is committing to future improvements in sustainability outcomes within a predefined timeline. The financial and/or structural characteristics of SLBs can vary depending on whether the issuer achieves those predefined Sustainability Performance Targets. Within these parameters, the use of funds for SLBs are intended for general purposes rather than for underlying sustainable projects as in the case of existing green, social and sustainability bonds. The SLBP have five core components: (i) selection of key performance indicators; (ii) calibration of sustainability performance targets; (iii) bond characteristics; (iv) reporting; and (v) verification.

(iii) Regulatory initiatives

Sustainability is a priority for policy makers and regulators alike, which is reflected in the increasing number and diversity of regulatory initiatives worldwide. In Europe, the EU Action Plan has resulted in three regulatory initiatives: the Taxonomy Regulation, the Sustainable Finance Disclosure Regulation (SFDR), and the Low-Carbon Benchmark Regulation. The Non-Financial Reporting Directive (NFRD) and proposed EU Green Bond Standard (based on the GBP) are currently under review for a possible revision and potential legislative actions respectively. The EU Taxonomy is a cornerstone of EU policies on sustainable finance, aiming to provide further clarity on what is green and being referenced in regulations such as SFDR and others and the proposed EU GBS. In 2021, the newly established Platform on Sustainable Finance is due to complete the technical screening criteria for all environmental objectives and work on the social component of the taxonomy, all of which will create even more demand for transparent and standardised data.

In Asia, regulatory initiatives include China's Green Industry Guidance Catalogue, the ASEAN Green and Social Bond Standards, as well as Japan Green Bond Guidelines, amongst others. Further information including background on other supranational initiatives can be found in ICMA's sustainable finance compendium.

(iv) Perspectives from market stakeholders

Issuers' perspectives

One of the key challenges for issuers is data management for impact reporting of use-of-proceeds bonds. Typically, large, heterogeneous datasets are available for a range of projects, but the process of selecting, normalising and aggregating data for impact reporting purposes is labour and cost-intensive and not all formats are machine-readable. Providing impact data through third-party impact databases poses another challenge. While impact databases seek to aggregate data from different issuers and improve comparability, it is important to understand the underlying methodology and specific context which risks being omitted from broader impact categories or individual indicators.

FinTech solutions could create significant efficiencies, for example, by processing large data sets and matching an issuer's data to relevant taxonomies. Further expected benefits include better oversight of projects and analytical tools for disclosure purposes. However, cost is an important factor. On the one hand, building technology applications in-house requires appropriate resources, which are limited. On the other hand, analytics solutions can lead to a reduction in funding costs as they can help an issuer establish the fair value of a sustainable instrument and determine the appropriate issuance size according to investor demand.

Banks' perspectives

From an underwriter's and intermediary's perspective, taxonomy alignment of lending and underwriting activity poses operational challenges, which is compounded by the diversity of taxonomies, for example, differences between the EU Taxonomy and taxonomies created by Asian

5. For example, a green bond issuance architecture using smart contracts and digital tokens based on the ERC-20 token standard. Malamas, V., Dasaklis, T., Arakelian, V. and Chondrokoukis, G. 2020. *A Block-Chain Framework for Increased Trust in Green Bonds Issuance.*

6. Green bonds are any type of bond where the proceeds will be exclusively applied to (re)finance eligible green projects with environmental benefits. Similarly, social bonds are instruments that re(finance) projects with positive social impacts. Those that finance both green and social projects are sustainability bonds. All together, these instruments are referred to as "use-of-proceeds bonds" and constitute one of the most fundamental components of sustainable finance.

jurisdictions. Furthermore, banks rely on issuers to provide data. Unlike for corporate actions, there are no specific communication channels to disseminate impact reports, which are generally made available on the issuer's website in unstructured form. Traceability of issuers' commitments remains difficult since impact reports are only published on an annual basis. In emerging markets, a further challenge consists in the lack of awareness amongst some, less frequent issuers of the requirements for issuing sustainable bonds and associated commitments.

FinTech has the potential to improve demand discovery, ie assess investors' interest in sustainable bonds, facilitate exchange and alignment of data with investors' needs, but also help automate the assessment of ESG factors in banks' balance sheets for prudential regulatory requirements. Harmonisation of sustainability reporting and international accounting standards, and broader disclosure requirements (eg financial and non-financial disclosures) would be welcome. Tools for automated gap analysis between requirements for conventional bonds and sustainable bonds could facilitate access for less frequent issuers.

Investors' perspectives

Currently, investors navigate large numbers of reports which, paired with a lack of standardisation and lack of transparency on the methodology used, makes comparisons difficult, if not impossible. Mining and aggregating data from impact reports for individual securities and tracking different KPIs at issuer level for the growing segment of sustainability-linked bonds (SLBs) requires substantial resources, which can be a barrier for smaller investors. Analytics solutions are commonly used to source and aggregate data from various sources, including issuers' or credit rating agencies' websites.

FinTech could be used to develop common platforms for oversight, facilitate comparability and provide dynamic insights into ESG performance. However, key obstacles include inconsistent reporting of impact data and ESG data more broadly, and the lack of standardisation of KPIs, which limits scalability of FinTech solutions, let alone advanced applications such as AI/ML or DLT.

Data provider perspectives

Collecting, normalising and aggregating data from multiple sources is day-to-day business for data providers. However, usability depends on the quality of sustainable bond data. Pre-issuance, ESG metrics are used inconsistently which creates challenges in terms of interpreting, quantifying and comparing ESG commitments, despite adherence to voluntary guidelines.

Post-issuance, there is a significant lag until impact reports or KPIs are published by issuers, which makes it challenging to anticipate coupon step-ups or step-downs, for example. Verification remains difficult due to a mismatch between ESG frameworks validity (eg one year) and a security's maturity (eg 10 years). Regular, and more frequent, ESG reporting is therefore paramount to harness data analytics or build an index based on sustainable securities, which would create greater transparency in the market. ICMA's Impact Reporting Working Group is focused on developing guidelines for impact reporting database providers that collect and present data from sustainable bonds.

Conclusion

It is evident that usability of ESG data, whether at security level or issuer level, is a pre-requisite to enable FinTech applications in sustainable bond markets. Inconsistent reporting, lack of standardisation of KPIs and accessibility adversely impact ESG data quality. However, addressing the ESG data challenges extends beyond bond markets. Alignment of taxonomies, as well as consistent reporting and accounting standards for ESG and non-ESG data are considered equally important.

Notwithstanding these challenges, issuers perceive a number of opportunities for FinTech, for example, to automate taxonomy alignment or reduce funding costs. For banks, opportunities include enhanced "demand discovery" in sustainable bonds or improved exchange and alignment of data with investors' needs. From investors' perspective, FinTech could be used to develop common platforms for oversight, facilitate comparability and provide dynamic insights into ESG performance. For data providers, regular, and more frequent ESG reporting is paramount to harness analytics and create greater transparency.

A striking commonality between FinTech and sustainability is the need for common standards and harmonisation, which ICMA will continue to promote through its GBP workstreams, ICMA's FinTech Advisory Committee and engagement with market stakeholders and regulators alike to enable synergies between FinTech and sustainable bond markets.

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