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Scaling the sustainable finance market

A cross-border financial market infrastructure-driven approach

September 2021

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Euroclear group is the financial industry's trusted provider of post trade services. Euroclear provides settlement and custody of domestic and cross-border securities for bonds, equities and derivatives to investment funds. Euroclear is a proven, resilient capital market infrastructure committed to delivering risk-mitigation, automation and efficiency at scale for its global client franchise.

The Euroclear group comprises Euroclear Bank, the International CSD, as well as Euroclear Belgium, Euroclear Finland, Euroclear France, Euroclear Nederland, Euroclear Sweden and Euroclear UK & International. The Euroclear group settled the equivalent of EUR 897 trillion in securities transactions in 2020, representing 276 million domestic and cross-border transactions, and held EUR 32.8 trillion in assets for clients by end 2020.

For more information about Euroclear, please visit www.euroclear.com

FOREWORD

PwC's ambition is to build trust in the climate transition and help our clients create sustainable value to meet ESG goals. We do this by helping organisations transform sustainably; build the credibility of reporting, particularly around non-financial metrics and climate reporting; develop and implement investment strategies for the future; and support their people through a fair transition. We're also continuing to make sure that our own business is ready to meet the challenge, too.

We are delighted to have collaborated with Euroclear to produce this report which develops a cross-border financial market infrastructure approach to scaling the sustainable finance market. This approach is centred on creating transparency and trust and is designed to include finance raisers and investors from around the globe. We will continue to support the development of sustainable finance markets in this way, and expect this approach to deliver a meaningful impact on the environmental and societal challenges we face today.

My thanks to the Strategy& and Euroclear teams who worked tirelessly to produce this report.

Peter Gassmann
PwC's ESG Leader and
Global Strategy& Leader

As a Financial Markets Infrastructure (FMI), Euroclear is committed to the stability and smooth running of the financial markets. Given Euroclear's systemically important role, is our responsibility to create a more stable and more sustainable world for the benefit of us all. One of the ways we can do this is by looking at how we can facilitate the growth of sustainable finance markets. Demand for sustainable securities is growing, as is the supply. We must ensure that investors are able to identify and compare such securities and that they can invest in them easily and securely.

We are extremely pleased to create this report with PwC which examines these issues and provides a series of possibilities to overcome the challenges in sustainable finance to ensure the development of a greener global economy.

Euroclear has been sustaining financial markets for many years; now we want to help those markets become sustainable.

Lieve Mostrey
Euroclear Group Chief Executive Officer

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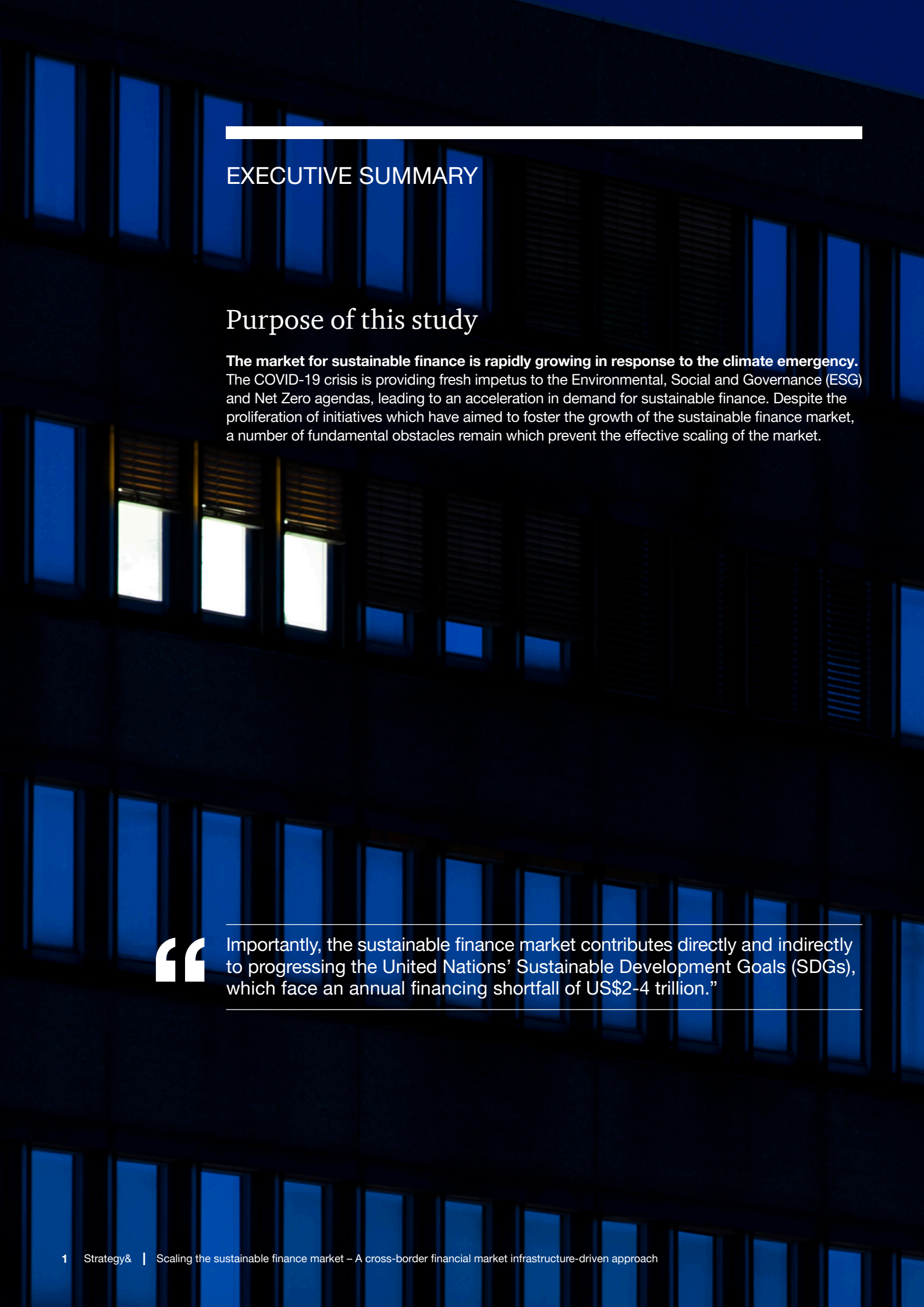


EXECUTIVE SUMMARY

Purpose of this study

The market for sustainable finance is rapidly growing in response to the climate emergency. The COVID-19 crisis is providing fresh impetus to the Environmental, Social and Governance (ESG) and Net Zero agendas, leading to an acceleration in demand for sustainable finance. Despite the proliferation of initiatives which have aimed to foster the growth of the sustainable finance market, a number of fundamental obstacles remain which prevent the effective scaling of the market.

> “Importantly, the sustainable finance market contributes directly and indirectly to progressing the United Nations’ Sustainable Development Goals (SDGs), which face an annual financing shortfall of US$2-4 trillion.”

The purpose of this study is threefold:

- First, this study sets out the key challenges in the sustainable finance market and why it is not currently delivering to wider societal needs. It also defines a set of five necessary characteristics which, if met, would deliver an efficient and well-functioning sustainable finance market.
- Secondly, this study explores the avenues for financial market infrastructures (FMIs) and related partners to address key market gaps. A number of recommendations are set out for how a cross-border FMI-driven approach can drive the continued development of a successful sustainable finance market.
- Thirdly, this study quantifies the potential economic and sustainable impact of addressing key challenges in the sustainable finance market through a cross-border FMI-driven approach.

This study aims to raise awareness of the unique role that cross-border FMIs, like Euroclear, can play in scaling the global sustainable finance market. A cross-border FMI-driven approach uses the trusted, central and neutral position of FMIs to address fundamental obstacles in the growth of the sustainable finance market globally. The insights contained in this study should encourage a coordinated effort across financial market participants – driven by FMIs – to support the sustainable finance market to reach its full potential.

The importance of sustainable finance

Sustainable finance is a subset of the overall financial market, which offers a structured way to channel capital to economic activities and projects that deliver sustainable outcomes. Importantly, the sustainable finance market contributes directly and indirectly to progressing the United Nations' Sustainable Development Goals (SDGs). While there exists an annual financing shortfall of US$2-4 trillion to achieve the SDGs, there is a wealth of capital available in financial markets, particularly through institutional investors. The Asian Development Bank estimates that "global pools of institutional funds, including pension and insurance funds [may be] worth between $45 trillion and $60 trillion".[1] Greater flows into sustainable finance can therefore provide the necessary capital to fund important and urgent sustainable change.

However, fundamental challenges on both the supply and demand side of the market are preventing the scaling of sustainable finance to its full potential. On the supply side, underdeveloped market infrastructure in some regions, prohibitive upfront issuance costs and confusion about what is required for a trustworthy issuance capable of attracting international investment all limit the supply and pipeline of sustainable securities. On the demand side, while sustainable finance remains oversubscribed, unstructured information leads to difficulties in making informed investment decisions. These information failures are complicated by the overload of methodologies and taxonomies for ESG classification and poor comparability of ESG scores and issuer disclosure reporting.

The tools and resources to scale the market exist, but have yet to be deployed in an effective way. There exists a multitude of ongoing initiatives – including frameworks, taxonomies, standards and certifications – all of which have strived to develop the sustainable finance market. Unfortunately, these efforts have been largely siloed across regions and asset classes. Successful scaling of sustainable finance to meet the UN's SDGs in a timely manner requires a centrally orchestrated effort with support across all financial market participants to avoid leaving developing and frontier markets behind.

[1] Asian Development Bank, 'Green, Sustainability, and Social Bonds for COVID-19 Recovery: A Thematic Bonds Primer', February 2021.

We have identified the following necessary characteristics for a successful sustainable finance market:

- investors increase their demand for sustainable securities
- issuers increase their supply of sustainable securities
- investors can more easily identify and compare sustainable securities
- investors are better able to invest in sustainable securities; and
- market participants trust in the sustainable finance market.

Scaling the sustainable finance market will ultimately improve the sustainability of overall financial markets. In the future, sustainable finance will not be a distinct market; rather, if we are to meet the SDGs, sustainability will need to be a key feature across all financial decision making, globally. Rather than a sustainable finance market, there will be a financial market which is sustainable.

A cross-border FMI-driven approach to scaling sustainable finance

FMIs have a unique place in the financial ecosystem. FMIs hold trusted, central and neutral positions in the global financial market and include central securities depositories (CSDs), international central securities depositories (ICSDs), payment systems, central counterparties (CCPs), security exchanges, securities settlement systems and trade repositories. They are valued for their efficient infrastructure systems and wide-reaching networks across the financial market ecosystem, with breadth across both geography and the financial services value chain. They have unique visibility of – and access to – data which underpins global financial transactions and can therefore support continued sustainable finance market development. This builds on previous successes in international capital market development, such as supporting fixed income issuance for euroclearable instruments.[2]

FMIs can be segmented by cross-border FMIs and domestic FMIs. Cross-border FMIs offer capabilities which enable and facilitate the connection of issuers and investors across borders through, for example, cross-border payments or settlements. Domestic FMIs are those with capabilities which are inherently domestic – for example, a domestic CSD, which provides services for securities issued domestically and which are traded and settled in the same jurisdiction. While both types of FMIs are integral to the smooth functioning of financial markets, this report focuses on the role of cross-border FMIs in particular.

> “A cross-border FMI-driven approach to scaling the sustainable finance market can be defined as bringing together market scaling efforts in a coordinated way across the financial market ecosystem to create the right conditions and incentives to support the transition of sustainable finance to a mainstream market.”

[2] PwC Strategy&, ‘Impact of Euroclearability’, April 2019.

Cross-border FMIs positioning has created three distinct opportunities to foster an environment which incentivises sustainable finance at each stage of the market's maturity. Given that some visibility of sustainable securities and regions are more active in the sustainable finance market than others, the central and neutral positioning of FMIs in the financial ecosystem allows them to support all market participants and asset classes regardless of where they sit along the market's trajectory. Therefore, a cross-border FMI-driven approach can support the levelling up of sustainable finance market capability and activity globally, bringing everyone along the journey, whether they are a longstanding market participant or just entering the market. In doing so, a cross-border FMI-driven approach facilitates a baseline level of global transparency around sustainable finance and ESG data, which is critical to transition from sustainable finance as a subset of the market to a global financial system which is sustainable.

These opportunities include:

1. encouraging greater sustainable finance issuance by reducing infrastructure, regulatory and informational barriers to issuance
2. processing ESG information flows including ESG metrics, disclosure and assurance; and
3. expanding the market to more asset classes and participants.

First, cross-border FMIs can encourage a greater supply of sustainable investment opportunities within the market by reducing key barriers to issuance. Key barriers include infrastructure, regulatory and informational barriers, all of which prevent issuers from entering or engaging with the sustainable finance market, particularly for non-EU issuers. These barriers also have implications for investors who require a steady and diversified pipeline of sustainable investments to truly integrate sustainable finance into their portfolios. Investors have to be able to make informed decisions about a security, which may fall along a spectrum of 'sustainability'; to create this space for investor choice, all potential issuers need to be able to first access and engage with the sustainable finance market. FMIs therefore have an opportunity to engage with regulators and policymakers to ensure that the necessary infrastructure is in place to foster capital market depth. They also have an opportunity to simplify and clarify what is required to create a successful sustainable finance issue – one that will be attractive to international investors – from the start of the issuance process. Reducing these fundamental barriers in the short-to-medium term will help to bolster the supply and pipeline of sustainable securities to match the strong investor demand.

Cross-border FMIs can then improve the processing of ESG information between market participants. With greater volumes of non-financial performance data being incorporated into financial systems comes the difficulty of interpreting inconsistent or unreliable information. FMIs therefore have a big role to play in facilitating use of this new language between market participants. With strong track records in managing and quality-assuring data, cross-border FMIs can improve the processing of ESG metrics, ESG disclosure and ESG assurance, to ensure that these key pieces of information flow systematically between issuers and end-investors and are commonly understood and interpreted by all financial market participants. For example, cross-border FMIs can inform and highlight globally relevant and decision-useful ESG metrics and/or host a repository of ESG data collected from the issuance of securities and related transactions. These interventions can support investors to discern which securities are, indeed, sustainable according to the investor's own due-diligence criteria and have confidence that their investments will remain in line with their sustainable investing objectives. They can also support issuers to understand what ESG themes and metrics investors value, thereby helping issuers bring desired sustainable investments to market. Implemented over the medium-to-long term, enhancing ESG information flows will serve to improve transparency and uphold the integrity of the sustainable finance market, particularly as more environmental, social and sustainable metrics emerge and more data is transmitted within financial markets.

Finally, cross-border FMIs can expand the sustainable finance market to more asset classes and market participants. To catalyse greater sustainable finance flows, larger volumes on both the supply and demand side are needed. Having established clear steps for issuers at origination of a sustainability security issue and systematic processing of ESG information once a security is issued, cross-border FMIs can then use their central and neutral positioning within the financial ecosystem to 'crowd-in' more participants on both the issuer and investor sides, and widen the scope of sustainable finance to new asset classes or products, such as pooled small sustainable projects traditionally listed on ESG crowdfunding platforms. Implemented over the longer term in parts of the sustainable market that are relatively mature, cross-border FMIs can facilitate diversification benefits to both issuers and investors. Expanding the sustainable finance market in this way will be instrumental to achieving Net Zero by 2050 and ultimately fostering a financial system which is sustainable, rather than a sustainable finance market which is a subset of overall financial markets.

At its core, a cross-border FMI-driven approach offers pragmatic solutions to foster an environment which incentivises greater sustainable finance flows through an open architecture approach by both cross-border and domestic FMIs. The enablers of a cross-border FMI-driven approach set out above are pragmatic because they address root problems in market infrastructure and information flows, which are common to emerging and frontier economies and therefore could offer a critical inflection point for these economies.

Economic and sustainable impacts of a cross-border FMI-driven approach

A cross-border FMI-driven approach can deliver positive economic and societal outcomes over the long term, novel to previously tried approaches. The package of market scaling enablers proposed in this study can lead to an increased supply of sustainable securities and demand for sustainable finance, resulting in greater flows within the global sustainable finance market. While the sustainable finance market has experienced impressive growth in recent years without a cross-border FMI-driven approach, underpinning these additional flows are two arguably more important outcomes: improved efficiency of issuance processes and ESG disclosure, and enhanced comparability of sustainable securities to aid investor due diligence. These less tangible outcomes have not yet been realised through other market scaling approaches but are essential to creating a bedrock of trust in the sustainable finance market for its continued growth over the long term.

Presented below are quantifications of the potential economic and sustainable impacts of a cross-border FMI-driven approach. Note that the analysis is based on best efforts to quantify and illustrate the potential scale and scope, and therefore should be interpreted as indicative.

US$

25 tr

additional capital mobilised by 2030

"A cross-border FMI-driven approach has the potential to uplift the growth of the sustainable finance market by up to 2.5% annually, which is additional to the projected 13% cumulative average growth rate of the market."

Greater sustainable finance flows mobilised by a cross-border FMI-driven approach leads to significant economic impact. A cross-border FMI-driven approach has the potential to uplift the growth of the sustainable finance market by up to 2.5% annually, which is additional to the projected 13% cumulative average growth rate of the market. This results in the mobilisation of roughly US$25 trillion additional capital by 2030. Improved efficiency and financial market depth are key features of a cross-border FMI-driven approach centred on developing a financial system which offers equal access to the sustainable finance market through globally reaching infrastructure. This means that emerging and frontier markets stand to gain the most from this approach, where the need for sustainable financing is greatest and the investment of sustainable capital is the least. Therefore, a considerable amount of this additional capital is expected to be channelled to emerging and frontier markets."

Up to

1.1

years saved in financing the UN's SDGs

> "The US$25 trillion additional capital mobilised by a cross-border FMI-driven approach translates to savings of up to 1.1 years in financing the UN's SDGs by 2030."

A cross-border FMI-driven approach can help to balance progress on sustainability globally. This is of particular importance to emerging and frontier markets where there is great opportunity but little coverage of the sustainable finance market. The US$25 trillion additional capital mobilised by a cross-border FMI-driven approach translates to savings up to 1.1 years in financing the UN's SDGs by 2030.

What is needed to activate a cross-border FMI-driven approach

Collaboration across the financial market ecosystem is necessary to succeed in scaling the sustainable finance market through a cross-border FMI-driven approach. The intention of a cross-border FMI-driven approach is to bring together market scaling efforts in a coordinated way across the financial market ecosystem to create the right conditions and incentives to increase the growth of the sustainable finance market. FMIs can provide the driving force, but committed collaboration across financial market participants is important to creating the interlinkages necessary for a truly global financial market that is sustainable. Otherwise, the financial industry risks devoting time and resources to another siloed effort, which may exclude small issuers and under developed markets.

Time is of the essence. At the time of publication, there are just over nine years left to progress and achieve the UN's SDGs by 2030. There is still a long way to go in a short amount of time. However, with swift endorsement and coordination, several of the market scaling enablers proposed in this study can be activated over the next year. Additionally, adapting existing initiatives supporting sustainable finance can help to minimise activation time and cost.

There is an action for all market participants willing to get involved. To ensure a coordinated approach, it is imperative that FMIs, multilateral organisations, development banks and global banks co-design the way forward. Euroclear and its partners have already begun the development of a number of prototypes to set a cross-border FMI-driven approach into action. For ease and speed, activation of a cross-border FMI-driven approach might begin with cross-border FMIs, drawing upon their important relationships with sovereign and corporate issuers across developed, emerging and frontier markets. Collaboration across the financial ecosystem is needed to ultimately create a global financial market which is truly sustainable.

CHAPTER 1: INTRODUCTION

> This study sets out a cross-border FMI-driven approach to scaling sustainable finance, what is required to enable a cross-border FMI-driven approach, what the potential impact could be and the next steps to achieve it."

Summary

- With managing Environmental, Social and Governance (ESG) issues – including climate change – becoming an urgent necessity, sustainable finance has been recognised as a key enabler for achieving sustainable development objectives.
- Despite impressive growth, however, the sustainable finance market has a long road to maturity. There is a misalignment of incentives to participate in the sustainable finance market and the market is currently subject to data and information silos, which prevent optimal decision-making.
- The aim of this study is therefore to raise awareness of the role that financial market infrastructures (FMIs), such as Euroclear can play in addressing these fundamental market challenges in sustainable finance.
- This study sets out a cross-border FMI-driven approach to scaling sustainable finance, what is required to enable a cross-border FMI-driven approach, what the potential impact could be and the next steps to achieve it.

1.1 Purpose of this study

With managing Environmental, Social and Governance (ESG) issues – including climate change – becoming an urgent necessity, sustainable finance has been recognised as a key enabler for achieving sustainable development objectives. The market for sustainable finance is rapidly growing in response to the climate emergency, resource depletion, inequality and a host of other sustainable development challenges. The COVID-19 crisis is providing fresh impetus to the sustainable development agenda, leading to an acceleration in demand for green investments and sustainable finance.

Despite impressive recent growth, however, the sustainable finance market has a long road to maturity. While there exists a proliferation of sustainable finance initiatives, a number of obstacles remain which are preventing the effective scaling up of the market for sustainable finance.

There is a misalignment of incentives to participate in the sustainable finance market. Today, the market is experiencing strong investor demand but an insufficient supply of sustainable securities to meet this demand. This is largely due to the significant barriers that small and new issuers face in issuing sustainable securities, which include insufficient market infrastructure use or involvement in regions which lack capital market depth, unclear issuance processes and high costs of meeting and disclosing ESG standards. Investor demand is set to grow even further, following the COVID-19 crisis. However, without the necessary support for issuers, society stands to lose the opportunity to seize this inflection point.

The sustainable finance market is also subject to data and information silos, which prevent optimal decision-making. The lack of high quality and comparable ESG data is exacerbated by the lack of consistent definitions, methodologies and reporting standards. This fragmentation leads to difficulties in making informed investment decisions. The differences in taxonomy and criteria for ESG performance have also led to different asset classifications and ESG scores, all with varying methodologies that, at best, further complicate comparability or, at worst, contribute to perceptions of 'greenwashing'. Greenwashing refers to instances where there is a gap between expectations of issuers and investors with regard to what is considered 'green' or 'sustainable'. In general, it is based on miscommunication and there are misperceptions between issuers' and investors' expectations.

The aim of this study is therefore to raise awareness of the role that FMIs, such as Euroclear can play in addressing these fundamental market challenges in sustainable finance. There is a role for market infrastructures, such as Euroclear to address these challenges through their trusted, central and neutral infrastructure and their wide global reach across the sustainable finance ecosystem. This study sets out a cross-border FMI-driven approach to scaling the sustainable finance market. While it will require committed collaboration across financial market participants, there is a ripe opportunity over these next few months ahead of Climate Change Conference of the Parties (COP26) and the World Economic Forum in 2022 to come together and make real progress against global sustainability goals.

1.2 Approach

This study was conducted over three phases:

Phase 1 – Understanding the challenges currently facing the sustainable finance market. This study began with extensive desk-based research – including the research and papers issued by the United Nations Environment Programme (UNEP) Inquiry into the Design of a Sustainable Financial System – to understand how the sustainable finance market has grown to date and what remains in the way of scaling the sustainable finance market further. This included a review of the various issuance processes for different sustainable finance instruments across different markets. It also included an extensive review of policy papers, academic literature and industry developments to understand the breadth and overlap of ongoing initiatives supporting the growth of the market. This stock-taking exercise led to the identification of five proposed necessary characteristics for a successful sustainable finance market.

Phase 2 – Defining a cross-border FMI-driven approach to scaling the sustainable finance market. Every financial market participant has a role and opportunity to contribute to the growth of the sustainable finance market. There are a number of approaches to facilitate sustainable finance market growth that have been tried, but not all have been successful, nor complementary with each other. Against this backdrop, Euroclear collaborated with PwC Strategy& to work with stakeholders with sustainable finance, economics and capital markets expertise to define a unique role for FMIs in addressing fundamental barriers to scale. This study defines what a cross-border FMI-driven approach to scaling sustainable finance could look like through three distinct opportunities that FMIs have to uplift the market's growth at each stage of maturity. Within each of these roles, several market-scaling enablers were identified and developed which FMIs can deliver to support and accelerate the growth of the sustainable finance market.

Phase 3 – Quantifying the potential economic and sustainable impacts of a cross-border FMI-driven approach. To demonstrate the benefits of a cross-border FMI-driven approach, the third phase of the study involved quantifying the potential economic and sustainable impacts across three steps:

- **Quantifying the baseline:** Data was gathered on the current sustainable finance market size and growth trajectory, including the equity and fixed-income portions of the sustainable finance market.
- **Quantifying the potential economic impacts:** Evidence from the literature on FMI-enabled growth in the global bonds market and Euroclearable markets was reviewed and analysed to estimate the potential sustainable finance market uplift which could be achieved through a cross-border FMI-driven approach. Our estimation accounts for both the price and non-price channels of the uplift to market growth. The uplift was applied to the currently projected cumulative average growth rate of the sustainable finance market to estimate the total sustainable finance market size in 2030. This market size was then compared with the baseline to identify the additional capital which could be mobilised due to a cross-border FMI-driven approach.
- **Quantifying the potential sustainable impacts:** Estimates by the UN, the OECD and academic literature are referenced to quantify the current shortfall in financing the UN's SDGs, the necessary reduction in annual CO_2 emissions to reach Net Zero and the financing needed to ensure inclusive and equitable quality education for all by 2030 (SDG 4). These figures are then compared with the potential additional capital mobilised in the sustainable finance market from a cross-border FMI-driven approach, to quantify the potential sustainable impact through different impact channels (e.g. time savings in financing the UN's SDGs, CO_2 emissions reductions, children afforded primary school education).

1.3 Report structure

The findings of this study are set out across the following chapters:

- **Chapter 2** sets out the current challenges to scaling the sustainable finance market;
- **Chapter 3** presents the role of FMIs in scaling sustainable finance;
- **Chapter 4** sets out the opportunities of a cross-border FMI-driven approach to scaling sustainable finance; and
- **Chapter 5** presents the potential economic and sustainable impacts of a cross-border FMI-driven approach.

Evidence from the literature on FMI-enabled growth in the global bonds market and Euroclearable markets was reviewed and analysed to estimate the potential sustainable finance market uplift which could be achieved through a cross-border FMI-driven approach."

CHAPTER 2: CHALLENGES TO SCALING THE SUSTAINABLE FINANCE MARKET

> While the sustainable finance market has grown significantly to date, it lacks sufficient flows to address the scale of social and climate challenges society is facing today."

Summary

- Sustainable finance is a subset of the overall financial market, which offers a structured way to channel capital to economic activities and projects that deliver sustainable outcomes.
- While the sustainable finance market has grown significantly to date, it lacks sufficient flows to address the scale of social and climate challenges society is facing today. This problem is exacerbated by the difficulty in measuring the sustainability impact of financial flows and as a result some finance may result in unsustainable outcomes.
- These challenges need to be addressed in order to achieve the desirable conditions for efficient functioning of the sustainable finance market.
- We have identified the following necessary characteristics for a successful sustainable finance market:
  - **a** investors increase their demand for sustainable securities
  - **b** issuers increase their supply of sustainable securities
  - **c** investors can more easily identify and compare sustainable securities
  - **d** investors are better able to invest in sustainable securities; and
  - **e** market participants trust in the sustainable finance market.

2.1 The sustainable finance market

There is an undeniable need to address global sustainability challenges. The United Nations' Sustainable Development Goals (SDGs), as set out in **Figure 2.1,**[3,4] reflect the needs and desires of humanity for both present and future generations. However, the SDGs are, in many cases, still unmet.

There is a large financing gap to meet sustainability challenges, which is particularly pronounced in low and lower-middle income countries. Meeting the SDGs by 2030 in developing countries will require bridging a US$2.5 trillion annual financing gap,[5] while the OECD projects that the COVID-19 crisis has increased this shortfall to US$4.2 trillion.[6] In order for sustainable finance to respond to these pressing sustainability challenges, annual sustainable finance flows will have to scale from billions to trillions of dollars. Furthermore, the Global Financial Markets Association estimates that annual climate finance flows will have to increase by 5 to 8 times from today's levels of around US$600 billion to meet the US$3-5 trillion+ annual need for climate finance through 2050.[7]

> "The Global Financial Markets Association estimates that annual climate finance flows will have to increase by 5 to 8 times from today's levels of around US$600 billion to meet the US$3-5 trillion+ annual need for climate finance through 2050."

[3] G20 Sustainable Finance Study Group, Sustainable Finance Synthesis Report, July 2018.
[4] International Capital Market Association, Sustainable Finance High-level Definitions, May 2020.
[5] United Nations Conference on Trade and Development, World Investment Report 2014, 2014.
[6] OECD, Global Outlook on Financing for Sustainable Development 2021, 9 November 2020.
[7] Global Financial Markets Association and Boston Consulting Group, Climate Finance Markets and the Real Economy, December 2020.

This challenge is especially apparent in low and lower-middle income countries; the Sustainable Development Solutions Network estimates that the SDG funding gap is between US$1.4 trillion and US$3 trillion per year in these countries alone.

Figure 2.1: Sustainable Development Goals[8]

> “Sustainable finance is a subset of the overall financial market, which offers a structured way to channel capital to economic activities and projects that deliver sustainable outcomes.”

[8] United Nations, ‘Take Action for the Sustainable Development Goals’. Note the content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States.

Sustainable finance is a subset of the overall financial market, which offers a structured way to channel capital to economic activities and projects that deliver sustainable outcomes. It contributes directly (through labelled sustainable finance and impact investing) and indirectly (through wider socially responsible investing) to sustainable development.

However, the current market provision of sustainable finance may result in unsustainable outcomes:

- **Measuring sustainability impact of financial flows:** Financial institutions do not routinely record data on sustainability impacts against financial assets and even the fraction of institutions which do so align with different methodologies. This can result in sustainable finance flows not being identified as such and unclear accounting for financial flows which claim to be sustainable.
- **Unsustainable nature of financial markets today:** Difficulty in measuring the sustainability impact of financial flows can result in some negative sustainability impacts. For example, 35 private-sector banks have financed the fossil fuel industry with US$2.7 trillion since the Paris Agreement and their annual financing has increased by almost 5% over that period.[9] Six major agribusinesses which were implicated in destruction of rainforests received US$44 billion of financing between 2013 and 2019.[10] As such, economic outcomes are often prioritised and time horizons of financial markets often focus too much on the short term.

Greater sustainable finance facilitated through a trusted market can therefore serve to address each of the three key challenges in achieving the SDGs. The relevance and breadth of sustainable finance across equity, fixed-income and alternative financial instruments supports two core routes to making finance more sustainable:

1. **Mainstreaming sustainability considerations in traditional financial instruments and investment strategies.** For example, this would include the integration of ESG factors into the issuance of vanilla corporate or sovereign bonds (such as reporting on environmental metrics even if a security is not limited to only funding sustainable projects) or negative screening of equity portfolios based on ESG factors.
2. **Developing and investing in financial instruments whose proceeds explicitly finance projects with positive sustainability outcomes.** This would include impact funds, green, social and sustainability bonds, bonds issued by multilateral development banks to support sustainable development or impact investments.

> "Financial institutions do not routinely record data on sustainability impacts against financial assets, and even the fraction of institutions which do so align with different methodologies."

[9] Rainforest Action Network, Banking on Climate Change - Fossil Fuel Finance Report 2020, 18 March 2020.
[10] Global Witness, Money to Burn, 23 September 2019.

Table 2.1 sets out how sustainability has been considered in traditional finance instruments and how sustainable financial instruments have been developed, across equities, debt fixed-income, debt bank loans and alternative investments.

Table 2.1: Sustainable finance is applicable to all asset classes

Asset class	Sustainability in traditional financial instruments	Developing sustainable financial instruments
Equities	Sustainable finance can be adopted in equities through a number of strategies. The traditional method has been through **negative or exclusionary screening** and **ESG investing.** Investment strategies such as **shareholder engagement, positive screening (best in class)** and **impact investing** are growing.	**Equities from sustainable companies.** For example, London Stock Exchange Group has a Green Economy Mark that recognises listed companies and funds which derive 50% or more of their revenues from environmental solutions. **ESG Exchange-Traded Funds (ETFs)** are funds which screen securities based on ESG practices and are listed on exchanges.
Debt fixed-income	**Traditional corporate bonds.** Material ESG criteria can be incorporated into corporate credit analyses. While nascent compared to equities, this segment is growing. **Traditional sovereign bonds.** Several studies have found a link between sovereign debt risk and ESG score.[11] Integrating ESG factors into assessments of sovereign credit risk is becoming mainstream. PIMCO has adopted this approach since 2011 in its sovereign ratings model. The CFA Institute and the PRI jointly developed the ESG Integration Framework to consider how investors might integrate ESG factors into their sovereign debt investment. **Traditional money market funds** are also beginning to include ESG elements.	**ESG money market funds (MMFs)** involve applying ESG factors to the investment of money market instruments. **Green bonds** are specific bonds labelled green, following a well-defined process of earmarking and allocating equivalent amounts to projects with environmental benefits. **Social bonds,** like green bonds, are use of proceeds bonds that raise funds that are allocated to projects with positive social outcomes. **Sustainability bonds** are bonds where the proceeds will be exclusively applied to finance or refinance a combination of both Green and Social Projects.[12] **Sustainability-linked bonds** are bonds where the proceeds can be applied to any purposes, but the financial return through the coupon is linked to a pre-defined ESG target. These products can also be explained as **"sustainability performance-linked bonds".** **Green mortgage-backed securities** securitise numerous mortgages that go towards financing green properties. Fannie Mae has been the leading issuer of Green MBSs.
Debt bank loans	**Sustainability-linked loans** are corporate lending linked to sustainability performance, where the interest rate can rise or fall depending on whether the borrower hits pre-agreed ESG targets.	**Green loans** that have their proceeds used to finance or refinance green projects. **Social impact loans** that have their proceeds used to finance or refinance projects with a positive social impact. **Sustainable project finance and project-related corporate lending** are financial arrangements between corporates and financial institutions which consider environmental and social risks as set out in the Equator Principles, which apply international ESG standards to project due diligence.
Alternative investment	n/a	**Green real estate investment trusts (REITs)** have portfolio exposure to properties which are environmentally certified. **Private equity and venture capital** organisations have private impact funds that finance sustainable startups and corporations.

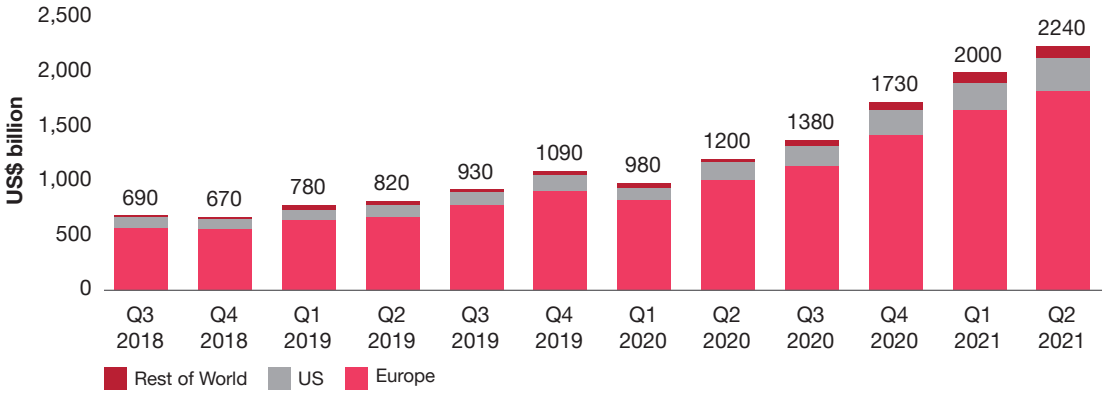
[11] Hermes Investment, Pricing ESG Risk in Sovereign Credit, July 2019.
[12] ICMA, Sustainability Bond Guidelines.

2.2 Dynamics of the global sustainable finance market

The growth and drivers of sustainable finance

There has been a substantial surge in investor demand for sustainable finance over recent years. As shown in **Figure 2.2,** by the end of Q2 2021 global assets in sustainable funds climbed to US$2,240 billion, up 87% since Q2 2020.[13]

Figure 2.2: Quarterly Global Sustainable Fund Assets (US$billion)



Source: Morningstar[14]

[13] Morningstar, 'Global Sustainable Fund Flows: Q2 2021 in Review', July 2021.
[14] Morningstar, 'Global Sustainable Fund Flows: Q2 2021 in Review', July 2021.

Inflows into sustainable investments are being driven by a number of factors. These include upside return potential, reduced downside risk, regulatory pressures, market pressure, public sector activity and societal pressure. More detail on these factors is provided in **Table 2.2.**

2.2 Dynamics of the global sustainable finance market

Table 2.2: Drivers for sustainable finance

Drivers	Description	Examples
Upside potential	Many sustainable indices have outperformed their benchmarks in 2020. Sustainable investing can tilt portfolios towards markets of the future and deliver improved returns.	• A review of 2200 studies on the impact of ESG on corporate financial performance found that 90% showed a positive relationship or no negative relationship.[15] • Analysis by Morningstar showed that 24 out of 26 ESG index funds yielded higher returns than their non-ESG benchmarks in Q1 2020.[16]
Reduced downside risk	Sustainable assets can be more resistant to downside risk. Taking sustainability factors into account can mitigate against regulatory and reputational risks, along with market risks associated with transitioning to a more sustainable economy.	• A BlackRock study based on 2,800 global stocks found that ESG portfolios can be more resilient in downturn scenarios.[17] • State Street Global Investor's SPDR highlights that almost 70% of ESG investors stated that these investments helped them manage volatility.[18] • During the COVID-19 crisis green bond indexes have suffered smaller drawdowns than non-green ones, given their more defensive sector and credit profile.[19]
Regulatory pressures	Regulators are tightening their supervision over the financial sector and sustainable finance. Increasingly they are requiring financial institutions to include sustainability considerations in investment decisions through movements like the EU including sustainability as part of investors' fiduciary duty. Regulators are also encouraging financial institutions to engage with sustainable finance through enhancing sustainability reporting, in turn requiring corporates to improve their sustainability disclosures.	• Hong Kong's Securities and Futures Commission has made it compulsory for public companies to report on ESG factors and mainland China is introducing a similar requirement. • France's article 173 fulfils a similar function, while the UK will mandate TCFD disclosure by 2025, with premium listed companies reporting in 2022. • At its meeting in the UK in June 2021, the G7 supported mandatory climate disclosures by companies in line with the TCFD Recommendations.
Market pressure	Sustainable finance is becoming mainstream and investors have to engage with this agenda or risk falling behind.	• In 2020 there were over 3000 signatories of the UN PRI with US$103 trillion AUM.[20] • The TCFD had financial institution supporters with US$175 trillion AUM as of March 2021.[21]
Public sector activity	Blended finance models and issuance of green, social and sustainability bonds have reduced the risk profile of investing in sustainable assets.	• Blended finance models have delivered US$144 billion in financing since 2010 across a diverse mix of sectors and deal types.[22]
Societal pressure	Societal pressure is pushing financial institutions to consider sustainable finance. NGOs such as Bankwatch, Banktrack and ShareAction track investor performance, and call out sustainability laggards. Retail investor interest in sustainable investing is pulling financial institutions to engage with this market to meet growing demand.	• US retail investor assets invested using ESG criteria have increased by 50% to US$4.6 trillion since 2018.[23] • Two-thirds of French and German retail investors surveyed by 2DII say they want to invest sustainably.[24] • An NGO report found that BlackRock was the world's largest investor in companies contributing to deforestation.[25]

[15] Friede, Busch and Bassen (2015). ESG and Financial Performance: Aggregated Evidence from More than 2000 Empirical Studies, Journal of Sustainable Finance & Investment, Vol. 5, Issue 4, p. 210-233, 2015, doi: 10.1080/20430795.2015.1118917.
[16] Morningstar, Sustainable Funds Weather the First Quarter Better Than Conventional Funds, 3 April 2020.
[17] BlackRock, Sustainable investing: Resilience amid uncertainty.
[18] Barron's, Why a Recession Would Be Good for ESG Investors, 21 June 2019.
[19] UBS, Sustainable bonds boost SI portfolios during COVID-19, 28 April 2020.
[20] Principles for Responsible Investment, Principles for Responsible Investment releases new guidelines for asset owners on relationships with investment managers, 27 October 2020.
[21] Financial Stability Board, Task Force on Climate-related Financial Disclosures - Overview, March 2021.
[22] Convergence, The State of Blended Finance 2020, 2020.
[23] Barron's, U.S. Sustainable Investments Jumped to $17.1 Trillion in 2020, Up 42% from 2018, 16 November 2020.
[24] 2 Degrees Investing Initiative, A Large Majority of Retail Clients Want to Invest Sustainably, March 2020.
[25] Amazon Watch, BlackRock's BIG Deforestation Problem, August 2019.

The key initiatives shaping sustainable finance

The number of sustainable investment initiatives has grown exponentially over the past few years. Initial initiatives have focused on project finance (such as the UNEP FI Statement by Financial Institutions on the Environment & Sustainable Development in 1992, the Equator Principles in 2003 and the IFC Performance Standards in 2006); however, they have since expanded to cover a wider variety of financial market participants and asset classes. This was largely jump-started by the creation of the labeled bond market which originated in 2008 with the first green bond issuance by the World Bank, and expansion of the concept of "use-of-proceeds" to the entire balance sheet of the World Bank through its mandate.[26] While the World Bank "created the blueprint for today's green bond market" and the World Bank Group and other multilateral development banks provide the platforms for sustainable finance, the market has seen great interest in sustainable finance from other market participants, such as banks, corporates and sovereigns in recent years.

There has been a proliferation of competing and differing standards, initiatives, regulations and associations applicable to sustainable finance investors and issuers. A summary of the key sustainable finance initiatives is set out in **Table 2.3** below. In the **Appendix** we set out a more detailed list.

Table 2.3: Key sustainable finance initiatives

Impact investing, responsible and sustainable investment	Regulation and disclosure standards	Sustainable issuance standards	Sustainable investment associations
Equator Principles	**Regulation**	ICMA Green Bond Principles	Glasgow Financial Alliance on Net Zero (Net-Zero Asset Owner Alliance, Net Zero Asset Managers Initiative)
IFC Performance Standards	• EU Taxonomy	ICMA Social Bond Principles	Climate Action 100+
UN PRI	• Climate disclosure in line with CFD recommendations	ICMA Sustainability-linked Bond Principles	NGFS
UN PSI	**Disclosure standards**	LMA Green Loan Principles	Sustainable Banking Network
UN PRB	• CDP	LMA Sustainability-linked Loan Principles	Sustainable Stock Exchanges
Corporate Forum on Sustainable Finance	• GRI	Climate Bonds Initiative Taxonomy	Global Investors for Sustainable Development Alliance
Global Green Finance Council	• SASB	ACMF Green Bond Standards	International Platform on Sustainable Finance
Green Bond Pledge	• SBTi	ACMF Social Bond Standards	Technical Expert Group on Sustainable Finance
Global Sustainable Investment Alliance	• CDSB	ACMF Sustainability Bond Standards	
US SIF	• WEF IBC core set of material ESG metrics and recommended disclosures	Guidelines for Issuing Green Bonds in Brazil	
UN Sustainable Development Goals	• TCFD	Preparation Rules on Green bond Endorsed Project Catalogue (China)	
		EU Green Bond Standard	
		Green Bond Guidelines Japan	
		Green Bond Program – Kenya	

[26] World Bank, 'From Evolution to Revolution: 10 Years of Green Bonds', November 2018.

2.3 Different segments of the sustainable finance market

Sustainable finance by asset class

On the buy-side, sustainable investing is growing rapidly, but it is still a small fraction of the overall market. Net flows into ESG funds outpaced net flows into conventional funds for the first time in Europe in 2020.[27] However, sustainable investment strategies are still a small fraction of the broader financial universe. Financial intermediaries such as banks, institutional investors and asset managers hold global financial assets valued at over US$378.9 trillion.[28] Of these assets, investments that integrate some sustainability measurement are estimated to total US$30 trillion (8%), and US$3 trillion seek positive impacts (0.8%).[29]

The issue here is twofold:

1. **Negative screening is more commonplace and is used to remove ESG risks rather than drive positive sustainability impacts.** Across all asset classes, of the investments which integrate some sustainability measurement, over two-thirds conduct negative screening.[30] The popularity of this approach is primarily driven by its lower cost and reduced impact on portfolio construction and investment universe composition. Negative screening processes are well formed, socially responsible investment approaches which eschew investments in certain sectors have existed for hundreds of years. Its popularity also stems from a previously widespread view amongst investors that ESG can contribute to value erosion but not value creation.
2. **The vast majority of investments do not take sustainability considerations into account and could be financing activities that are detrimental to achieving sustainability goals.** 91.2% of these assets are invested with minimal sustainability screening.[31]

On the sell-side, the supply of sustainable securities is growing but still makes up a small proportion of the market. Green, social and sustainability bonds are probably the most advanced sustainable securities in terms of market penetration, but still accounted for less than 5% of total global bond issuance in 2019.[32,33] Total assets under management (AUM) in ESG-focused MMFs was roughly US$78 billion in 2019, less than 2% of total AUM in MMFs.[34] ESG ETFs grew by 223% in 2020, with nearly 200 new active ETFs brought to market in 2020 growing AUM to US$189 billion.[35]

Equity investors are ahead of fixed-income investors in their inclusion of sustainability considerations, despite rapid growth in the size and maturity of the sustainable debt market. According to a survey by Dutch group NN Investment Partners, only 26% of professional fixed-income investors have a clearly defined responsible investment approach, compared with nearly 50% for equities.[36] Supporting this pattern, analysis by Morningstar found that global funds labelled as sustainable accounted for US$1.8 trillion of assets as of mid-2019 – but fixed income strategies made up only one fifth of these.[37]

[27] Morningstar, European Sustainable Fund Flows: Q3 2020 in Review, 2020.
[28] Camradata, Fixed Income has been slow to embrace ESG factors, 27 August 2020.
[29] Camradata, Fixed Income has been slow to embrace ESG factors, 27 August 2020, p. 102.
[30] Camradata, Fixed Income has been slow to embrace ESG factors, 27 August 2020, p. 117.
[31] Author calculation using data from United Nations Conference on Trade and Development, World Investment Report 2014, 2014.
[32] Environmental Finance, Sustainable Bonds Insight 2020, 2020.
[33] S&P Global, Credit Trends: Global Financing Conditions: Bond Issuance Is Expected To Grow 3.8% In 2020, 30 January 2020.
[34] Fitch Ratings, ESG Adoption Increases Burden of Proof on Money Market Funds, 11 March 2020.
[35] Track Insight, ESG ETF Assets Surge Three-Fold in Record-Setting 2020 for ETFs, 8 January 2021.
[36] Money Week, Why an ESG approach is particularly suited to bond investors, 9 November 2020.
[37] Camradata, Fixed Income has been slow to embrace ESG factors, 27 August 2020.

Fixed-income issuers are ahead of equity issuers on the use of proceeds for sustainable purposes. Green, social and sustainability-linked bond and loan principles (e.g. ICMA, ACMF, LMA) require issuers to specify and report on how proceeds will be used for purposes which have a positive sustainability impact. The EU Green Bond standards are due to be introduced in 2021. They will demand mandatory reporting on use of proceeds and environmental impact, set stricter definitions of what constitutes a green project, make post-issuance reporting on environmental impact mandatory and also require accreditations for green bond verifiers.[38] Sustainable equity issuers do not have an equivalent requirement that ensures all investment achieves positive sustainability impact. For example, the London Stock Exchange Green Economy Mark recognises listed companies and funds which derive 50% or more of their revenues from environmental solutions.[39]

Sustainable finance by geography

European investors and issuers are the dominant force in the sustainable finance market. Europe is by far the most developed and diverse ESG market, accounting for 82% of the global sustainable fund universe.[40] In 2020, Europe made up 48% of global green bond issuance and 58% of the sustainability-linked and green loan market.[41,42] The leading position of Europe has been furthered during the COVID-19 pandemic by the European Commission's intention to issue EU SURE bonds of up to €100 billion as social bonds under the ICMA Social Bond Principles.[43]

Emerging and developing economies have smaller sustainable finance markets, but have strong sustainable finance ambitions and growth to date. In 2020, emerging markets accounted for 16% of green bond issuance and 5% of sustainability bond issuance.[44] Issuances of these bonds were more depressed in emerging markets than developed markets by the COVID-19 pandemic.[45] While there is little aggregate coverage of the sustainable finance market in these economies, there is substantial opportunity. For example, China alone accounted for over 80% of social bond issuance in 2020.[46] In January 2021, "Chile met 70% of its expected US$6 billion debt issuance for 2021, all in green and social bonds and it plans only to issue sustainable and green bonds during the remainder of the year".[47] Similarly, Egypt, the first Middle Eastern sovereign to issue a green bond, saw five times oversubscription of its debt issuance in September 2020.[48]

"Green, social and sustainability-linked bond and loan principles (e.g. ICMA, ACMF, LMA) require issuers to specify and report on how proceeds will be used for purposes which have a positive sustainability impact."

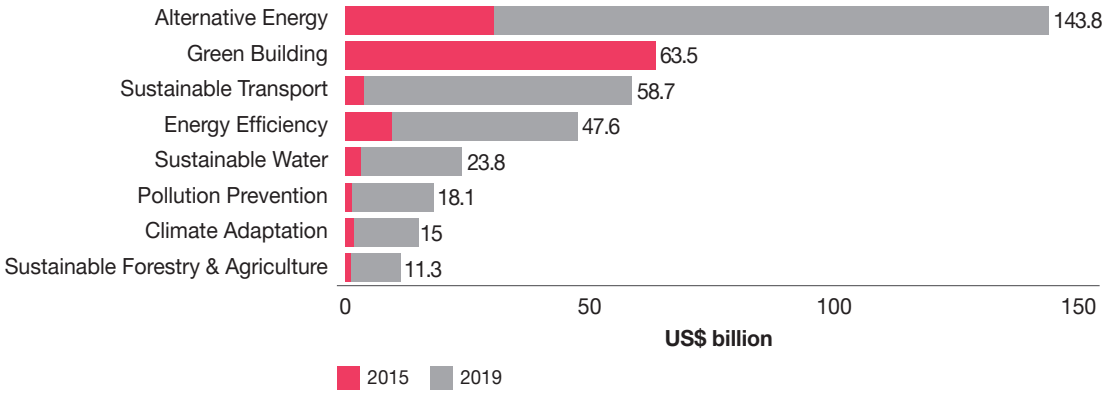
[38] European Commission, EU Green Bond Standard.
[39] London Stock Exchange, Green Economy Mark.
[40] Morningstar, European Sustainable Fund Flows: Q3 2020 in Review, 2020.
[41] Climate Bonds Initiative, Sustainable Debt Global State of the Market 2020, April 2021.
[42] Open Insights by Nordea, The sustainable loan market: A snapshot of recent developments, 29 October 2020.
[43] European Commission, European Commission to issue EU SURE bonds of up to €100 billion as social bonds, 7 October 2020.
[44] Climate Bonds Initiative, 'Sustainable Debt Global State of the Market 2020', April 2021.
[45] Climate Bonds Initiative, 'Sustainable Debt Global State of the Market 2020', April 2021.
[46] Climate Bonds Initiative, 'Sustainable Debt Global State of the Market 2020', April 2021.
[47] Pictet Asset Management, 'Why EM bond investors can no longer ignore ESG', March 2021.
[48] Pictet Asset Management, 'Why EM bond investors can no longer ignore ESG', March 2021.

Even blended finance initiatives struggle to mobilise sustainable finance for low-income countries. In 2018, US$46.4 billion was mobilised from the private sector by official development finance interventions, an increase of 28% over 2017. However, only 5.3% of private finance mobilised went to least developed and other low-income countries. Research has found that there is an inverse relationship between the fragility of the recipient country and the private finance mobilised.[49]

Sustainable finance by sustainability theme

Energy, buildings and transport are the use-of-proceeds categories which have dominated the green debt market, with climate change mitigation as the preeminent sustainability theme. These three categories accounted for 87% of the use-of-proceeds of green bonds issued in H1 2020,[50] while renewable energy and power account for 70% of green loans.[51] While the use-of-proceeds split of sustainability-linked loans is more diverse, utilities and transport are still the top two categories.[52] This is broadly aligned with the need for green finance, as power, transport and buildings are three of the sectors with the largest financing need to meet the commitments of the Paris Agreement.[53] **Figure 2.3** depicts how climate change mitigation dominates the use of proceeds for green bonds, with other environmental considerations such as water, climate adaptation and agriculture, forestry and other land use attracting less funding.

Figure 2.3: Green-bond funding by use of proceeds (US$billion)[54]



Source: MSCI[55]

[49] OECD (2020), Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet, OECD Publishing, Paris, https://doi.org/10.1787/e3c30a9a-en, p. 91.
[50] Climate Bonds Initiative, Sustainable Debt Global State of the Market H1 2020, October 2020.
[51] Open Insights by Nordea, The sustainable loan market: A snapshot of recent developments, 29 October 2020.
[52] Open Insights by Nordea, The sustainable loan market: A snapshot of recent developments, 29 October 2020.
[53] Global Financial Markets Association and Boston Consulting Group, Climate Finance Markets and the Real Economy, December 2020.
[54] This chart reflects estimated proceeds (in US$billion) raised by bonds eligible for inclusion in the Bloomberg Barclays MSCI Global Green Bond Index, as of 31 December of the corresponding year. Included are energy-efficiency investments not otherwise classified under sustainable transport or green building - e.g. energy efficiency for non certified buildings, public infrastructure, industrial processes, electrical grids and district heating.
[55] MSCI, Green bonds: Growing bigger and broader, 14 April 2020.

Other sustainability themes – including biodiversity and agriculture, forestry and other land use – have struggled to gain traction in the sustainable finance market. In 2019, green securities raised only US$6 billion for biodiversity conservation, less than 4% of total funding, despite there being a biodiversity financing gap of between US$598 billion and US$824 billion per year.[56] Sustainable agriculture and forestry is another sustainability theme that is overlooked, with less than 3% of green bond funding going towards this purpose in 2019.[57] There is substantial unmet sustainable financing demand in the agricultural sector, which accounts for 27% global greenhouse gas emissions and is one of the most cost-effective sectors in which to mitigate emissions.[58]

COVID-19 and sustainable finance

COVID-19 is acting as both a disruptor and an accelerator of the emerging sustainable finance ecosystem. Sustainable finance activity fell sharply in the first two quarters of 2020, particularly for sustainable debt. Volumes of green bond issuance dropped to below half of 2019 levels with private sector issuance experiencing a notable tail off.[59] Despite this derailing, green bond issuance recovered in H2 2020 and total 2020 issuance was recorded at US$270 billion, the highest since market inception.[60] Moreover, the Climate Bonds Initiative expected green bond issuance to be close to US$ 500 billion in 2021, due to 'green multilateralism' in pandemic recovery plans.[61]

The resurgence in green bond issuance has been accompanied by growth of social bonds. According to Bloomberg, social bond issuance "jumped sevenfold to US$147.7 billion in 2020", driving the sustainable bond market and the wider sustainable debt market to record size of US$532 billion and US$732 billion, respectively.[62] This growth is expected to continue through 2021, with Moody's forecasting social bonds to retain a 23% share of the sustainable bond market at US$150 billion issuance in 2021.[63] Indeed, as recovery from the pandemic continues, sovereigns, supranationals and agencies (SSA) issuers may further scale up issuance of thematic bonds as a channel to raise capital for stimulus effort.

Positive sell-side sentiment is matched by growing buy-side support for sustainable finance. Sustainable equities and debt proved more resilient to market downturns and have outperformed benchmarks in 2020,[64,65] and continued to experience strong inflows in Q1 2020. Investor surveys by BNP Paribas and HSBC suggest that the pandemic has reinforced investor commitment to ESG investing.[66,67]

However, market activity in 2020 and the impact of COVID-19 have emphasised some of the persistent challenges in sustainable finance, including relatively little private sector issuance. Private sector green bond issuance dropped in 2020, driven by substantial falls in financial corporate, asset-backed security and green bond issuance. This underlines the fact that private sector issuance in sustainable debt markets is still relatively small and these markets are largely underpinned by public sector issuance. While private sector green bond issuance is recovering this year in some regions such as North America,[68] it will need to maintain a steep trajectory to keep up with the increasing public sector issuance due to ESG-related COVID-19 recovery plans.

[56] Paulson Institute, The Nature Conservancy and Cornell Atkinson Center for Sustainability, Financing Nature: Closing the Global Biodiversity Financing Gap, 15 September 2020.
[57] MSCI, Green bonds: Growing bigger and broader, 14 April 2020.
[58] McKinsey & Company, Agriculture and Climate Change, April 2020.
[59] Climate Bonds Initiative, Sustainable Debt Global State of the Market H1 2020, October 2020.
[60] Climate Bonds Initiative, 'Record $269.5bn green issuance for 2020: Late surge sees pandemic year pip 2019 total by $3bn', 24 January 2021.
[61] Institutional Asset Manager, 'Green bond issuance on track to almost double in 2021, market estimates suggest', 26 January 2021.
[62] Bloomberg, 'Social Bonds Propel ESG Issuance to Record $732 Billion in 2020', 11 January 2021. Note that sustainable debt includes sales of green, social and sustainability bonds, sustainability-linked bonds, green loans, sustainability-linked loans.
[63] Environmental Finance, 'Trends in sustainable bonds issuance and a look ahead to 2021', 22 February 2021.
[64] United Nations Global Compact, Sustainable Finance.
[65] UBS, Sustainable bonds boost SI portfolios during COVID-19, 28 April 2020.
[66] HSBC, ESG investing remains key during COVID-19, 14 October 2020.
[67] Financial News, Covid-19 crisis has brought 'social' to the forefront of ESG investing, 13 July 2020.
[68] Climate Bonds Initiative, North America: State of the Market 2021.

2.4 Envisaging a sustainable finance future

Necessary characteristics for a successful sustainable finance market

There are five core necessary characteristics which are necessary for efficient sustainable finance market operation:

1. investors increase their demand for sustainable securities
2. issuers increase their supply of sustainable securities
3. investors can more easily identify and compare sustainable securities
4. investors are better able to invest in sustainable securities; and
5. market participants trust in the sustainable finance market.

It is useful to reflect on these desirable market conditions for an effective sustainable finance market to understand the relative pervasiveness of the existing barriers to market scale. These necessary characteristics and the associated market challenges are summarised in **Table 2.4** below and discussed in further detail in the following section.

Table 2.4: Overview of necessary characteristics and challenges

Characteristic	Sub-characteristics	Challenges
Investor increase their demand for sustainable securities	• There is a latent high level of investor demand for sustainable securities across geographies and sectors. • Investors see clear benefits from investing in sustainable securities.	• Strong primary market demand is undermined by weaker secondary market demand for sustainable securities. • Demand for sustainable securities is concentrated towards established issuers, major currencies, dedicated platforms and developed markets.
Issuers increase their supply of sustainable securities	• There are sufficient incentives for issuers to develop sustainable securities. • The supply of sustainable securities is of suitable ticket sizes and risk-return profiles. • Issuing sustainable securities is possible for a variety of issuers.	• Unclear sustainability project pipelines are a common barrier to scaling up investment in sustainable development. • It can be difficult for issuers to create securities that meet investor needs on ticket size and risk-return profile. • Investor requirements on ticket size and risk-return profile constrict the sustainability thematic areas and issuer mix that can participate in the market. • Different investor preferences on ESG thematics make it difficult for issuers to assess demand. • Complexities and timescales of issuing sustainable products can dissuade issuers from moving away from vanilla issuances.
Investors can more easily identify and compare sustainable securities	• Investors are able to differentiate between sustainable and unsustainable securities. • Investors can compare and contrast sustainable securities.	• Disclosure standards are unclear for corporates, preventing investors from comparing securities on an equal basis. • ESG scores have unclear methodologies, poor correlations between the scores of ESG research firms and a lack of real-time data. • Standards for sustainable securities are slowly emerging, but are currently insufficient to support investor and issuer confidence in the market. • Use of proceeds and post-issuance reporting is insufficient in some cases for investors to fully understand how their investments achieve sustainable outcomes. • External verification, second-party review and post-issuance reporting can be important stages in verifying the sustainability credentials of products, but increase transaction costs for issuers and should not be considered sufficient or necessary. • ESG data has improved over recent years, but continues to have patchy coverage by market and asset class.

Table 2.4: Overview of necessary characteristics and challenges *(continued)*

Characteristic	Sub-characteristics	Challenges
Investors are better able to invest in sustainable securities	• The process of investing in sustainable securities is simple and inexpensive. • Investors do not have increased transaction and expertise costs when investing in sustainable securities.	• Traditional risk factors such as sovereign, currency and political risks apply to sustainable finance, but there is not yet a robust derivatives market to mitigate and allocate these risks for sustainable securities. • Investor demands for liquid securities with narrow spreads are not being met by the sustainable finance market due its small size and sector skew. • A lack of investor knowledge and understanding prevents engagement with sustainable finance. • Growth of passive investing could undermine the growth of sustainable finance, given the need for greater engagement with issuers and higher analytical burden and cost.
Market participants trust in the sustainable finance market	• There is counterparty trust that the market will function correctly. • There are sufficient assurance steps and checks and balances to promote this trust and improve transparency.	• The lack of global standards or recognised legal definition and market criteria based on voluntary compliance can result in reputational and legal risks for issuers and investors. • The voluntary nature of the market leaves investors without a contractual basis to ensure that securities sold as sustainable remain sustainable for their lifetime. • Underdevelopment of local regulatory frameworks and general FMI impedes functioning and growth in sustainable finance across emerging markets.

Challenges to scaling sustainable finance

There are several accompanying challenges to each of the five principles for a successful sustainable finance market. These challenges are set out in greater detail below. Collectively, they capture the key barriers to scale facing the sustainable finance market today, which will likely hinder its continued growth if left unaddressed.

Necessary characteristic 1: Investors increase their demand for sustainable securities

Strong primary market demand is undermined by weaker secondary market demand for green securities. Green, social and sustainability bond indexes and funds (including exchange-traded funds (ETFs)) are crucial for the continued expansion of the sustainable debt market. They enable sustainable bond investing to become part of index asset allocation, which will deepen and widen the investor base. There are several green bond indices, including the Solactive Green Bond Index, S&P Green Bond Index and BofAML Green Bond Index, but there are fewer covering social and sustainability bonds.[69] Green bond ETFs are growing, with two new funds launched in 2020, taking the total to eight.[70] However, total assets under management as of 30 June 2021 were only €729m and US$309m, and similar ETFs are yet to be launched covering social and sustainability bonds. Expanding the menu of green bond mutual funds and ETFs is essential to appeal to a wider investor base and enhance liquidity.

[69] Liaw, T. (2020). Survey of Green Bond Pricing and Investment Performance, Journal of Risk and Financial Management, Vol. 13, Issue 9, 26 August 2020. Doi: 10.3390/jrfm13090193.
[70] Climate Bonds Initiative, Green Bond Pricing in the Primary Market: January - June 2021, September 2021.

Demand for green securities is concentrated towards established issuers, major currencies, dedicated platforms and developed markets. An analysis of over 1500 green bonds issued worldwide estimated the differences in yields of green and comparable conventional bonds, and found that issuer reputation appears to correlate with existence of a green premium or 'greenium'.[71] There was a very high negative yield difference for green bonds issued by more reliable issuance entities such as governments or supranationals, while the yield difference for corporate green bonds are much less significant, or even positive on secondary markets. Investor preference for sovereign issuances is further evidenced by euro-denominated green bonds issued by sub-sovereign issuers trading at relatively tighter spreads than those issued by corporates and financial institutions.[72] Bonds denominated in major currencies are also issued at lower yields, while green bonds listed on an exchange with a dedicated green market segment (i.e. Luxembourg or London Stock Exchange) also trade at yields up to 13 basis points (bps) lower.[73] Some research has found no meaningful premium for emerging market green bonds.[74] There is a buy-side focus on developed markets, dedicated platforms, major currencies and established issuers, although this could also be partially driven by current issuer distributions and sell-side limitations.

Demand for sustainable securities from both retail and institutional investors is growing. Surveys of retail investors have consistently found that 50% to 80% of respondents want to invest more sustainably[75] and, as wealth transfer to a sustainability-conscious millennial generation continues, this trend looks set to grow.[76] Some of the largest institutional investors have strongly engaged with sustainable investing, including Amundi which is aiming to integrate ESG in 100% of its investments by 2021[77] and BlackRock which has committed to increase its sustainable assets from US$90 billion currently to US$1 trillion within the next 10 years. In 2019, sustainable investment in developed countries reached US$35.3 trillion in assets under management.[79]

A high aggregate level of investor interest is translating into increased demand for green products. In 2020 green bonds in both EUR and USD attracted larger book cover and exhibited greater spread compressions than vanilla equivalents. Average oversubscription was 5.2x for green bonds in EUR compared with 3.1x for vanilla equivalents, and 79% of EUR green bonds achieved larger oversubscription than vanilla equivalents.[80] Demand for green securities is enhancing issuer appetite to supply, with increasing evidence that strong investor demand is realising the elusive green premium, or 'greenium', for sustainable securities.

Necessary characteristic 2: Issuers increase their supply of sustainable securities

Sustainable debt issuances are attractive to issuers due to the potential for a lower cost and increased investor engagement. Two recent literature reviews found that more studies report positive evidence for a green bond premium.[81,82] However, as previously discussed this appears to be stronger for sovereign or supranational issuers. For corporate green bond issuers, studies have found that investors respond positively to the issuance announcement, a response that is stronger for first-time issuers and bonds certified by third parties.[83] Issuing green bonds enables corporates to attract new investors and facilitates more engagement with investors.[84,85] There are some strong motivations for issuers to engage with sustainable financial markets.

[71] Kapruan, J. and Schiens, C. (2019), (In)-Credibly Green: Which Bonds Trade at a Green Bond Premium?, European Commission, 2 May 2019.
[72] IFC, Emerging Market Green Bonds Report 2019, Spring 2020.
[73] Kapruan, J. and Schiens, C. (2019), (In)-Credibly Green: Which Bonds Trade at a Green Bond Premium?, European Commission, 2 May 2019.
[74] IFC, Emerging Market Green Bonds Report 2019, Spring 2020.
[75] 2 Degrees Investing Initiative, A Large Majority of Retail Clients Want to Invest Sustainably Survey of French and German retail investors' sustainability objectives, March 2020.
[76] IISD, Sustainable Investing: Shaping the Future of Finance, February 2020.
[77] S&P Global, 2019 ESG Trends – What to Watch, 18 March 2019.
[78] Financial Times, BlackRock shakes up business to focus on sustainable investing, 14 January 2020.
[79] GSI Alliance, 2020 Global Sustainable Investment Review, August 2021.
[80] Climate Bonds Initiative, Green Bond Pricing in the Primary Market: January - June 2020, September 2020.
[81] Cheong, C. and Choi, J. (2020). Green bonds: a survey, Journal of Derivatives and Quantitative Studies, Vol. 28, No. 4. pp. 175-189. September 2020. Doi: 10.1108/JDQS-09-2020-0024.
[82] Liaw, T. (2020). Survey of Green Bond Pricing and Investment Performance, Journal of Risk and Financial Management, Vol. 13, Issue 9, 26 August 2020. Doi: 10.3390/jrfm13090193.
[83] Flammer, C. (2020). Corporate Green Bonds, Journal of Financial Economics Flammer, Forthcoming. Available at: https://dx.doi.org/10.2139/ssrn.3125518.
[84] Flammer, C. (2020). Corporate Green Bonds, Journal of Financial Economics Flammer, Forthcoming. Available at: http://dx.doi.org/10.2139/ssrn.3125518.
[85] Climate Bonds Initiative, Green Bond Pricing in the Primary Market: January - June 2020, September 2020.

Unclear sustainability project pipelines are a common barrier to scaling up investment in sustainable development. Despite willing capital, private investments can remain limited because there are simply not enough identifiable, investment-ready and bankable projects.[86] There is increasing focus from multilateral development banks, overseas development assistance institutions, NGOs and finance ministries on creating project preparation facilities, incubators and accelerators which can identify and develop sustainable projects, and improve their bankability so they can secure primary project finance. The UK Government's Climate Finance Accelerator led by PwC is one example of this type of scheme, which "seeks to enable a collaborative approach to unlocking a steady flow of funding for climate projects at scale and create a pipeline of 'investment ready' low carbon projects".[87]

Sustainability project pipelines are also poorly supported with too much focus on mobilising greenfield investment. An important element of the transition to a sustainable financial system is supporting businesses to update their practices and their existing business models to become more sustainable. Therefore, beyond, for example, solar parks and wind turbines, the supply of sustainable investment opportunities necessarily needs to include brownfield investments in transitioning issuers.

However, it can be difficult for issuers to create securities that meet investor needs on ticket size and risk-return profile. Ticket size is a crucial impediment to the growth of sustainable finance, especially in emerging markets, which have the greatest need for these types of investments. For example, in order to keep transaction costs low, most green bond issuances are over US$100 million. While some smaller deals have taken place, with the average green bond issue in Latin America and Africa being US$78 million and US$45 million respectively in 2018, these issuances are mostly too small to appeal to international investors.[88] According to Franklin, bond investors prefer at least US$200 million equivalent in liquidity, while green bonds must have a minimum value of US$250-300 million to be eligible for inclusion on major indices.[89,90] While green bonds are only one example, challenges on ticket size and risk-return profile are common to many sustainable finance products. Therefore, aggregation and asset-backed securities can be routes to increase ticket size and bankability.

Investor parameters on ticket size and risk-return profile constrict the sustainability thematic areas and issuer mix that can participate in the market. Ticket size requirements have weighted sustainable debt markets towards sectors that have sufficient revenue streams and project sizes to qualify for issuances, with energy, buildings and transport dominating the green bonds and loans markets.[91,92] In contrast, projects in sectors which are more segmented (such as agriculture) would have to be packaged up into a single security to be of sufficient size, but this option is restricted to issuers with the transactional skills and technical ability to pool assets. This may be restricting corporate activity in sustainable bond markets, with 46% of green bonds from corporates, 19% of sustainability bonds and 35% of social bonds.[93] This could also partially explain why corporate issuance of sustainability-linked bonds is dominated by large global corporations.

Different investor preferences on ESG thematics make it difficult for issuers to assess demand. The growth of thematic investing coupled with the sheer range of ESG themes makes it difficult for issuers to align their issuances with ESG issues which investors are targeting. For example, the ETF database identifies over 35 ESG themes for ETFs spread across various ESG criteria.[94] While there are some clear ESG issues that investors are more concerned about, such as climate change, human rights and bribery and corruption, other issues can quickly rise or fall in their importance to investors.[95]

[86] OECD, Developing Robust Project Pipelines for Low-Carbon Infrastructure, November 2018.
[87] UK Government, Climate Finance Accelerator, 21 June 2021.
[88] Stockholm Environment Institute, Green bonds: a mechanism for bridging the adaptation gap?, February 2020.
[89] Franklin, A. (2016). "Is Green Striping the Future of Green Bonds?" International Financial Law Review, September 2016.
[90] ICMA GBP SBP Databases and Indices Working Group, Summary of Green – Social - Sustainable Fixed Income Indices Providers, June 2018.
[91] Climate Bonds Initiative, Sustainable Debt Global State of the Market H1 2020, October 2020.
[92] Open Insights by Nordea, The sustainable loan market: A snapshot of recent developments, 29 October 2020.
[93] Climate Bonds Initiative, Sustainable Debt Global State of the Market H1 2020, October 2020.
[94] ETF Database, ESG Investing.
[95] LGT Capital Partners, ESG to SDGs: the road ahead, 2019.

Complexities and timescales of issuing sustainable securities can dissuade issuers from moving away from vanilla issuances. Sustainability securities may be seen as overly complex to issuers, given the multiplicity of criteria, the overlapping roles of some market participants, and the broad sets of rules, disclosure reporting guidelines and standards which may or may not apply to issuance.[96] Regulations make the issuance process onerous, unpredictable and protracted, increasing the lead in time and costs associated with issuance. This can result in issuers turning to vanilla products for faster access to funds.[97]

Necessary characteristic 3: Investors can more easily identify and compare sustainable securities

Disclosure standards are unclear for corporates, preventing investors from comparing securities on an equal basis. One of these challenges is the lack of consistency by which companies measure and report to investors and other stakeholders their sustainability performance and goals. There are myriad voluntary sustainability disclosure standards which companies can report to, along with sector-specific initiatives and legal reporting obligations. This makes it difficult for companies to comply with stakeholder reporting expectations, but also enables poor performers to avoid scrutiny. However, there have been encouraging recent attempts to align and consolidate these disparate requirements, such as the WEF IBC consolidated set of "Stakeholder Capitalism Metrics" metrics and the commitment by five framework – and standard-setting institutions to collaborate to align standards.[98,99] In addition the IOSCO has emphasised the need for globally consistent, comparable and reliable sustainability disclosure standards, and is working with the IFRS to develop a plan for the establishment of a Sustainability Standards Board (SSB) to sit alongside the International Accounting Standards Board (IASB).[100] Improving the alignment of corporate disclosures would enable investors to compare like with like. However, the issue is now one of timing and whether the market can achieve such alignment over the next two to three years.

ESG data has improved over recent years, but continues to have patchy coverage by market and asset class. Coverage has grown considerably over recent years in public markets, with 80% of the top 5200 companies globally now reporting on sustainability.[101] However, ESG data is often limited for private companies, alternative investments and more illiquid securities.[102,103] Investors seeking to use ESG data for these types of securities are often reliant on modelled estimates provided by third parties, which are often far less accurate. A study on corporate carbon emissions found that self-reported data is 2.4 times more accurate than estimates provided by third parties.[104] This has emerged as a critical challenge for sustainable finance to the extent that EU and UK policymakers are considering plans to regulate or supervise ESG score providers.

> "There are myriad voluntary sustainability disclosure standards which companies can report to, along with sector-specific initiatives and legal reporting obligations. This makes it difficult for companies to comply with stakeholder reporting expectations, but also enables poor performers to avoid scrutiny."

[96] Baker McKenzie, Critical challenges facing the green bond market, October/November 2019.
[97] Climate Bonds Initiative, Scaling up Green Bond Markets for Sustainable Development, November 2015.
[98] WEF, Toward Common Metrics and Consistent Reporting of Sustainable Value Creation, January 2020.
[99] CDP, CDSB, GRI, IIRC and SASB Facilitated by the Impact Management Project, World Economic Forum and Deloitte, Statement of Intent to Work Together Towards Comprehensive Corporate Reporting, September 2020.
[100] IOSCO, IOSCO sees an urgent need for globally consistent, comparable, and reliable sustainability disclosure standards and announces its priorities and vision for a Sustainability Standards Board under the IFRS Foundation, 24 February 2021.
[101] KPMG, The time has come: The KPMG Survey of Sustainability Reporting 2020, December 2020.
[102] Alpha, ESG in Private Markets – it's time to act, 2020.
[103] Measurable, Investment Grade ESG Data is Needed to Prove Companies Can Do Well by Doing Good, 26 August 2020.
[104] Responsible Investor, Using estimated carbon data could lead to greenwashing, say scholars, 26 November 2020.

Poor alignment of corporate disclosures coupled with investor demand for ESG data has fuelled the rapid growth of ESG scores, but there are issues with unclear methodologies, poor correlations between the scores of ESG data providers and a lack of real-time data. The number of ESG data providers, scores and rankings has boomed in recent years, with over 600 ESG rankings and rankings and over 125 ESG data providers.[105] The expansion of ESG scores has increased the ease by which investors can draw on a large quantity of data and make informed decisions. However, ESG scores are notoriously opaque. ESG analytics firms use a combination of data disclosed by companies and external sources including media, NGO and trade union reports to compile their analysis. They often rely on a combination of artificial intelligence, machine learning and in house analysis to obtain, clean and analyse data. They will then apply proprietary scoring systems data to determine index, scoring and ranking outcomes. These unclear methodologies make it difficult for corporations to work to improve their ESG score and also generate substantial disparities between raters' scores, especially with regards to the social and governance dimensions.[106] This is a particular challenge for emerging market issuers whose ESG scores are often correlated with their country's income level. Poor ESG score methodologies then feed into benchmarks and passive investment strategies through indices. As such, emerging market issuers are inadvertently disadvantaged. The other limitation with ESG scores for investors is that they are based on backwards-looking data. One study found that 50% of ESG indicators assessed had no value for the most recent study year and 13% had no values for the most recent four years or more.[107]

Standards for sustainable finance are slowly emerging, but are currently insufficient to support investor and issuer confidence in the market. ICMA's Green & Social Bond Principles do not outline what use of proceeds will be considered green. This analysis is left to the issuer, its advisers and the second opinion reviewer. The current practice is to state compliance with a rather broad category of published 'eligible green projects', confirmed by the second opinion review as green. The issuer then determines specific usage of the cash proceeds raised. This can be a dissuading factor for an investor concerned that the use of proceeds does in fact match with their own investment guidelines.[108]

Use of proceeds and post-issuance reporting may be insufficient for investors to fully understand how their investments achieve sustainable outcomes. A recent Climate Bonds Initiative study (March 2021) found that only 77% of green bonds in their study benefitted from regular post-issuance reporting, with only 59% reporting on allocation / impact metrics. While these figures are significantly higher when the issuer commits in its pre-issuance disclosure to providing ongoing reporting at a given standard, it nonetheless illustrates the extent of the problem facing this market.[109] ICMA only provides guidance documents for post-issuance impact reporting by green and social bond issuers.[110,111]

[105] SSGA, The ESG Data Challenge, March 2019.
[106] Gibson, R. and Krueger, P. and Schmidt, P.S. (2019). ESG Rating Disagreement and Stock Returns, Swiss Finance Institute Research Paper, No. 19-67, European Corporate Governance Institute – Finance Working Paper No. 651/2020, doi: 10.2139/ssrn.3433728.
[107] Castenda, Fujs, Herzog & Maeda (2018). An Analysis of Coverage Gaps in Sovereign ESG Data, World Bank White Paper.
[108] Baker McKenzie, Critical challenges facing the green bond market, October/November 2019.
[109] Baker McKenzie, Critical challenges facing the green bond market, October/November 2019.
[110] ICMA, Social Bond Principles Voluntary Process Guidelines for Issuing Social Bonds, June 2020.
[111] ICMA, Green Bond Principles Voluntary Process Guidelines for Issuing Green Bonds, June 2018.

External verification, second opinion review and post-issuance reporting are important stages in verifying the sustainability credentials of products, but increase transaction costs and should not be considered sufficient nor necessary. External reviews and second opinions from independent parties reviewing adherence to sustainability principles and standards, sustainability credentials, and management of the use of the proceeds and reporting and disclosure are becoming more standardised. This is driven not only by investor demand but also by policymakers, with recent EU proposals to regulate ESG assurance and second opinion providers. 89% of green bonds issued in 2020 had an external review, while over 93% of European green bonds include a second party opinion.[112,113] This is becoming the norm in a market that increasingly 'demands' some form of external review, but the transaction costs involved can act as an important barrier for smaller issuers. The cost of obtaining a second opinion or third-party assurance can range from US$10,000 to US$100,000.[114] The transaction and opportunity costs of complying with sustainable debt market best practice can be prohibitive for smaller issuers, especially in emerging markets.

Necessary characteristic 4: Investors are able to better invest in sustainable securities

Investor demands for liquid securities with narrow spreads are not being met by the sustainable finance market due its small size and sector skew. As sustainable markets are still relatively small and nascent in many geographies, investors may refrain from investing in sustainable securities as they can be less liquid than their mainstream finance counterparts.[115] Investors can also struggle to fit sustainable securities into their asset allocation framework due to their sector skew towards energy, buildings and transport.[116]

Growth of passive investing could undermine the early growth of sustainable finance, given the need for greater engagement with issuers and higher analytical burden and cost. Corporate engagement and divestment are crucial tools for sustainable investors, but pose challenges for passive investors to implement.[117] Many ESG indexes have relatively short track records and lack transparency in their construction, which can dissuade passive investors from using them as benchmarks.[118] In addition, screening or re-weighting companies or sectors due to ESG scores can skew portfolios, while the cost of sourcing and using ESG data can necessitate charging higher management fees, undermining one of the key drivers attracting investors to passive funds.[119]

Investors pursuing smart beta investment strategies are using ESG factors and scores as a weight in portfolio construction to reduce downside risk, create excess risk-adjusted returns, or enhance portfolios' ESG risk profile. According to an Aberdeen Standard Investments survey in 2019, less than one-quarter (24%) of investors running smart beta strategies incorporate ESG information.[120] However, FTSE Russell surveys have found that the percentage of asset owners looking to apply ESG considerations to their smart beta strategies has grown from 40% in 2017 to 60% in 2020, and that investor approaches are becoming more sophisticated, switching from negative screening to re-weighting indices based on ESG factors.[121]

Lack of investor knowledge and understanding of sustainable products. Sustainable securities are relatively new and many investors have not yet built up full knowledge and understanding of the risk and return characteristics of these securities, which might be aggravated by the lack of credit ratings and historical data, despite labeled bonds typically having the same credit risk as non-labeled bonds by the same issuer.[122]

[112] Climate Bonds Initiative, Sustainable Debt Global State of the Market 2020, April 2021.
[113] Coleton, A., Font Brucart, M., Gutierrez, P., Le Tennier, F. & Moor, C. (2020). Sustainable Finance Market Practices, EBA Staff Paper Series, No. 6. January 2020.
[114] Banga, J. (2019). The green bond market: a potential source of climate finance for developing countries, Journal of Sustainable Finance & Investment, 9:1, 17-32, Doi: 10.1080/20430795.2018.1498617.
[115] Coleton, A., Font Brucart, M., Gutierrez, P., Le Tennier, F. & Moor, C. (2020). Sustainable Finance Market Practices, EBA Staff Paper Series, No. 6. January 2020.
[116] Responsible Investor, Sustainability in fixed income is a rainbow: look too closely and the colours disappear, 19 November 2020.
[117] Principles for Responsible Investment, ESG & Passive Investment Strategies, 2020.
[118] Principles for Responsible Investment, How can a passive investor be a responsible investor?, 2019.
[119] ESG Clarity, Asset managers warned of ESG cost hike, 12 June 2018.
[120] Sustainalytics, Smith School of Enterprise and the Environment and Aberdeen Standard Investments, Smart beta and ESG, September 2019.
[121] ESG Clarity, Investors are marrying ESG with smart beta, 20 August 2020.
[122] Coleton, A., Font Brucart, M., Gutierrez, P., Le Tennier, F. & Moor, C. (2020). Sustainable Finance Market Practices, EBA Staff Paper Series, No. 6. January 2020.

Lastly, traditional macroeconomic, political and FX risks also apply to sustainable securities. Mismatches between the currency denomination of a project's financing and the denomination of its revenue present risks to investors and issuers, especially in emerging markets where current account deficits leave currencies exposed to devaluation. While instruments such as derivatives can hedge these risks, often they are not commercially viable for investors bearing emerging market risk. This may then act as a drag on sustainable finance growth in emerging markets.[123]

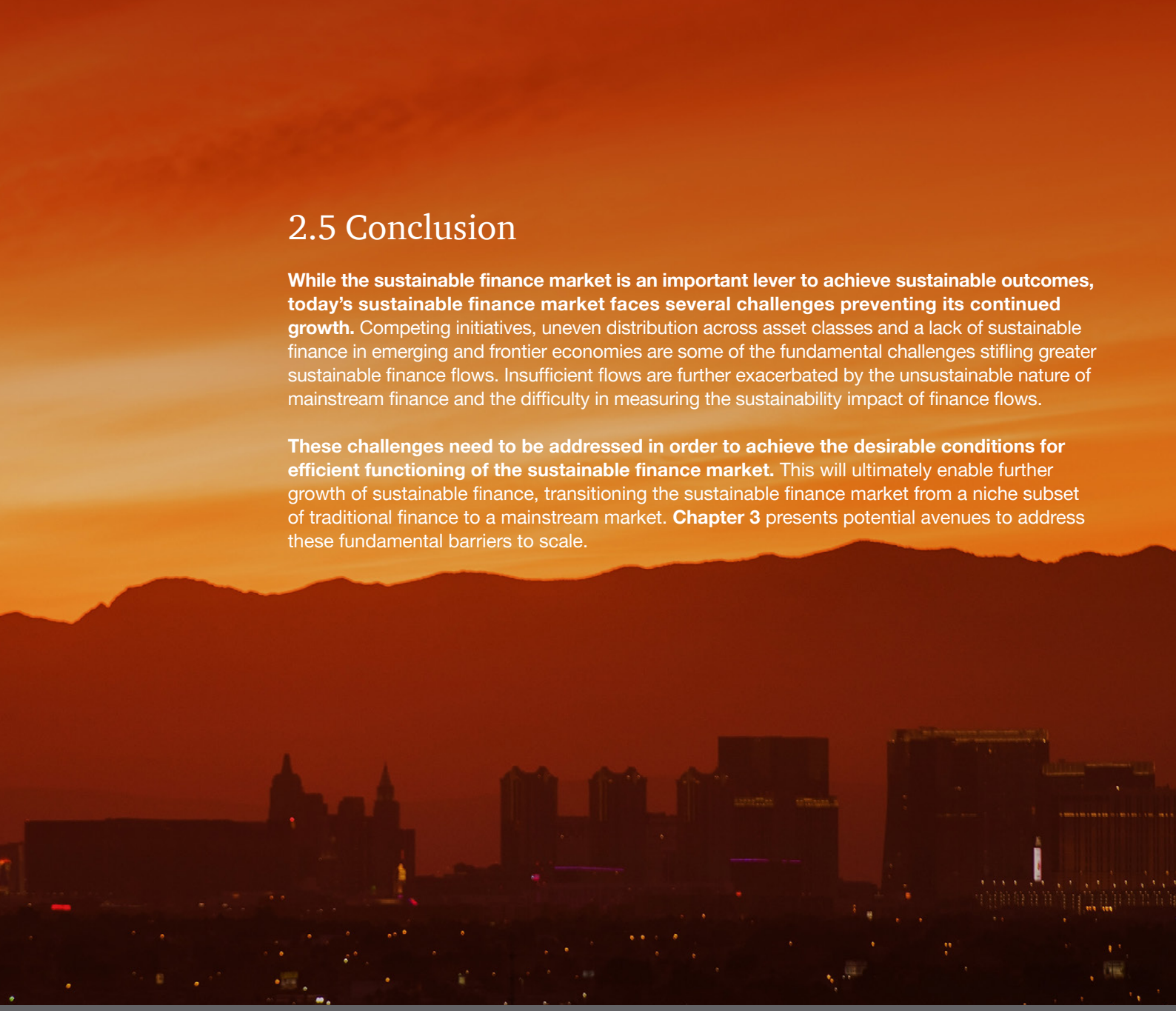
Necessary characteristic 5: Market participants trust in the sustainable finance market

The lack of global standards or recognised legal definition and market criteria based on voluntary compliance can result in reputational and legal risks for issuers and investors. The sustainable finance market is currently based on voluntary compliance with initiatives, such as the ICMA Green Bond Principles.[124] While it remains the responsibility of the investor to conduct proper due diligence on any security or issuer, standards have proved helpful guides in supporting investors to assess the sustainability credentials of securities. Therefore the lack of issuer alignment to recognised standards can result in unnecessary harm to the reputation of the issuer through suggestions of greenwashing – whether intentional or not – and lead to potentially higher transaction and refinancing costs.[125] Investors are also negatively affected by this and can themselves be vulnerable to suggestions of greenwashing.

The voluntary nature of the market leaves investors without a contractual basis to ensure that products sold as sustainable remain sustainable for their lifetime. Use of proceeds, ongoing maintenance or withdrawal of the second-party opinion and annual reporting are not often included as direct covenants in the terms and conditions of sustainable securities. This means that failures to use the proceeds for sustainable projects and inadequate annual reporting are not events of default or put events that would enable the bondholder to accelerate or redeem their bonds, nor are they step-up events triggering an increase in the coupon payable by an issuer. While the rapidly growing market for sustainability-linked loans and bonds is beginning to address this, with pricing tied to meeting defined ESG key performance indicators, a slippery slope remains for most sustainable securities: for example, bondholders can be inadvertently placed in breach of their own investment criteria, and forced to sell, without being able to sustain a claim for any loss caused by this forced sale due to the absence of express contractual provisions.[126] A lack of robust contractual provisions also hinders contract standardisation, which inhibits bundling and aggregation of projects. This restricts the sustainable project pipeline for issuers, and prevents institutional investors that may not consider project-level investments or be inclined to carry out due diligence on bespoke financing structures from participating in the market.[127]

Underdevelopment of local regulatory frameworks and insufficient use or involvement of FMI impedes functioning and growth in sustainable finance across emerging markets. Underdeveloped local regulatory frameworks and financial markets infrastructure in emerging markets are challenges for the functioning of all financial markets in these geographies, including sustainable finance. These factors slow down the project pipeline, increase transaction costs and limit the pool of investors willing to invest, creating slow-moving and illiquid markets.[128]

[123] European Development Finance Institutions, Attracting Private Climate Finance to Emerging Markets, November 2020.
[124] ICMA, Green Bond Principles.
[125] Coleton, A., Font Brucart, M., Gutierrez, P., Le Tennier, F. & Moor, C. (2020). Sustainable Finance Market Practices, EBA Staff Paper Series, No. 6. January 2020.
[126] Baker McKenzie, Critical challenges facing the green bond market, October/November 2019.
[127] European Development Finance Institutions, Attracting Private Climate Finance to Emerging Markets, November 2020.
[128] Societe Generale, Going Beyond Green Bonds, 5 July 2020.



2.5 Conclusion

While the sustainable finance market is an important lever to achieve sustainable outcomes, today's sustainable finance market faces several challenges preventing its continued growth. Competing initiatives, uneven distribution across asset classes and a lack of sustainable finance in emerging and frontier economies are some of the fundamental challenges stifling greater sustainable finance flows. Insufficient flows are further exacerbated by the unsustainable nature of mainstream finance and the difficulty in measuring the sustainability impact of finance flows.

These challenges need to be addressed in order to achieve the desirable conditions for efficient functioning of the sustainable finance market. This will ultimately enable further growth of sustainable finance, transitioning the sustainable finance market from a niche subset of traditional finance to a mainstream market. **Chapter 3** presents potential avenues to address these fundamental barriers to scale.

“Insufficient flows are further exacerbated by the unsustainable nature of mainstream finance and the difficulty in measuring the sustainability impact of finance flows.”

CHAPTER 3: THE ROLE OF MARKET INFRASTRUCTURES IN ADDRESSING THESE CHALLENGES

> “Successful scaling of sustainable finance to meet the UN’s SDGs in a timely manner requires a centrally orchestrated effort with support across all financial market participants to avoid leaving developing and frontier markets behind.”

Summary

- The tools and resources to scale the sustainable finance market exist, but have yet to be deployed in an effective way. There exists a multitude of ongoing initiatives – including frameworks, taxonomies, standards and certifications – all of which have sought to scale the sustainable finance market. Unfortunately, these efforts have been largely siloed across regions and asset classes.
- Successful scaling of sustainable finance to meet the UN's SDGs in a timely manner requires a centrally orchestrated effort with support across all financial market participants to avoid leaving developing and frontier markets behind.
- FMIs have a unique place in the financial ecosystem. FMIs hold trusted, central and neutral positions in the global financial market, and include payment systems, central securities depositories (CSDs), international central securities depositories (ICSDs), central counterparties (CCPs), security exchanges, securities settlement systems and trade repositories. They are valued for their efficient infrastructure systems and wide-reaching networks across the financial market ecosystem, with breadth across both geography and the financial services value chain. They have unique visibility of and access to data which underpins global financial transactions and can therefore support continued sustainable finance market development.
- A cross-border FMI-driven approach to scaling the sustainable finance market can be defined as bringing together market scaling efforts in a coordinated way across the financial market ecosystem to create the right conditions and incentives to support the transition of sustainable finance to a mainstream market.
- While a cross-border FMI-driven approach has not yet been tested for large scale transformation of sustainable financial markets, it has been leveraged previously to address discrete challenges in both developed and emerging markets. The market can draw upon this experience to address some of the fundamental challenges facing sustainable finance today.

There exists a multitude of ongoing initiatives – including frameworks, taxonomies, standards and certifications – all of which have sought to scale the sustainable finance market."

3.1 Introduction

As stated in Chapter 2, there is currently a challenge in transitioning the sustainable finance market from a niche subset of traditional finance to a mainstream market. Without this transition, sustainable finance is limited in its ability to channel capital to the necessary activities and projects which make society more inclusive and equal, and the planet a more sustainable place to live.

To address this problem, it is important to first understand how sustainable finance fits within global financial markets and the financial market ecosystem today. The remainder of this chapter explores the positioning of sustainable finance within today's financial markets, as well as the opportunities for existing market participants and approaches to scale sustainable finance further. Ultimately, this chapter highlights the unique role of financial market infrastructures (FMIs) in addressing these challenges to support greater sustainable finance.

3.2 Sustainable finance within today's financial markets

It is clear there is great impact potential in sustainable finance. A shareholder mandate for positive environmental, social and governance (ESG) outcomes is a powerful influence. Indeed, many investors are increasingly incorporating ESG into their mandates. Similarly, there is promise for a growing supply of sustainable investment opportunities, with "issuance of sustainable finance bonds reaching an all-time record of US$554.3 billion in 2020".[129]

However, what is missing from the global sustainable finance roadmap is a financial ecosystem that does not just accommodate sustainable finance, but rather incentivises it. Today's global financial market is underpinned by financial performance. Diversification and liquidity are important drivers, but many financial decisions are ultimately driven by yields and prospective financial returns. The introduction of non-financial performance measures has inserted a dynamic element to financial markets, which was previously left unaccounted for, and has culminated in a debate around the true risk-return profile of sustainable securities. However, the discovery process of sustainable returns has been complicated by the lack of clear definitions of sustainability which, until recent years, has been more of a societal ideal than a financial market practice.

To bring greater structure to the sustainable finance market, market participants have introduced new frameworks. These frameworks have made "a growing distinction between the use of risk filters (to do no harm) and impact financing or investing (to actively do good)".[130] They not only help to align issuers of all sizes on what makes an investment sustainable, but also lend guidance to ESG-interested investors.

Today's global financial market is underpinned by financial performance. Diversification and liquidity are important drivers, but many financial decisions are ultimately driven by yields and prospective financial returns."

[129] Refinitv, 'Sustainable finance surges in 2020', 4 February 2020.
[130] Standard Chartered, 'The evolution of sustainable finance', 5 February 2019.

The efficacy of these initiatives and frameworks, however, is limited by the setup of the traditional finance market, which has historically catered to large issuers and investors in developed markets. For example, logistical bottlenecks, such as costly roadshows and due diligence, are only exacerbated with the addition of ESG features of a security. Moreover, the reliance on technical capacity and legal and regulatory frameworks in capital markets puts emerging and frontier markets at a disadvantage.[131] In a survey done by UNEP, respondents indicated that a "relatively low level of sustainable finance capabilities across the finance sector" was a key impediment to the growth of the market.[132] Overall, existing market mechanisms in traditional finance are potentially prohibitive to the new cohort of issuers, investors and regions looking to engage in the sustainable finance market.

3.3 Opportunities for existing market participants to grow sustainable finance

A wide range of market participants have supported the growth of the sustainable finance market so far. The rapid growth of the sustainable finance market means that the stakeholders involved are not just limited to issuers and investors. Rather, a network of financial intermediaries link the two together, with regulators, standard setters, data providers, ESG indices, credit ratings agencies, investment banks, exchanges and FMIs each playing a role in sustaining this market growth, as shown in **Figure 3.1.** For example, investment banks play an important role in creating new sustainable asset classes; Standard Chartered has taken a leading role in developing an international carbon market to support companies to meet their Net zero commitments and Brookfield and TPG have raised US$12 billion via climate transition funds.[133] Similarly, ESG indices enable both passive and active sustainable investing by tracking sets of stocks or bonds that comply with certain ESG criteria, serving as an ESG benchmark for investors to support their due diligence and monitoring of sustainable investments.

However, to sustain this growth, it is important to understand where individual market participants can further support the development of the sustainable finance market globally. Despite impressive growth to date, more can be done to scale the sustainable finance market. Current support for sustainable finance does not provide sufficient incentives for continued market growth. For example, creation of additional standards and taxonomies without clear direction of convergence across all available standards and taxonomies only serves to complicate and fragment the sustainable finance market. Reflecting on what has helped the market to grow thus far, as well as what can be improved going forward, is an important exercise which can influence the long-term trajectory of the sustainable finance market.

"Despite impressive growth to date, more can be done to scale the sustainable finance market. Current support for sustainable finance does not provide sufficient incentives for continued market growth."

[131] Societe Generale, 'Going beyond green bonds', 5 May 2020.
[132] UNEP Inquiry, Nigerian Sustainable Finance Roadmap, December 2018.
[133] Institute of International Finance, Charter for Taskforce on Scaling Voluntary Carbon Markets – Phase 2 (March 1 – June 30 2021), 11 March 2021.

There are a number of opportunities for participants across the market to contribute further to the growth of the sustainable finance market.

These include but are not limited to:

- improving data quality through the use of technology and machine learning to reduce the discrepancies between ESG scores from different data providers
- integrating ESG data into credit scores in a standardised way
- expanding ESG indices and ETFs to support the secondary sustainable finance market
- building systems and frameworks which support the simplification of the numerous regulations and taxonomies in the sustainable finance market, but also accept the necessary key differences due to cultural, process or environmental nuances
- considering externality cost of environmental and social impacts through pricing, or different capital weightings, in corporate lending portfolios; and
- supporting the listing of sustainable securities from emerging or frontier economies on international exchanges.

Opportunities for each financial market participant are set out in more detail in **Figure 3.2.**

> “One opportunity is considering externality cost of environmental and social impacts through pricing, or different capital weightings, in corporate lending portfolios.”

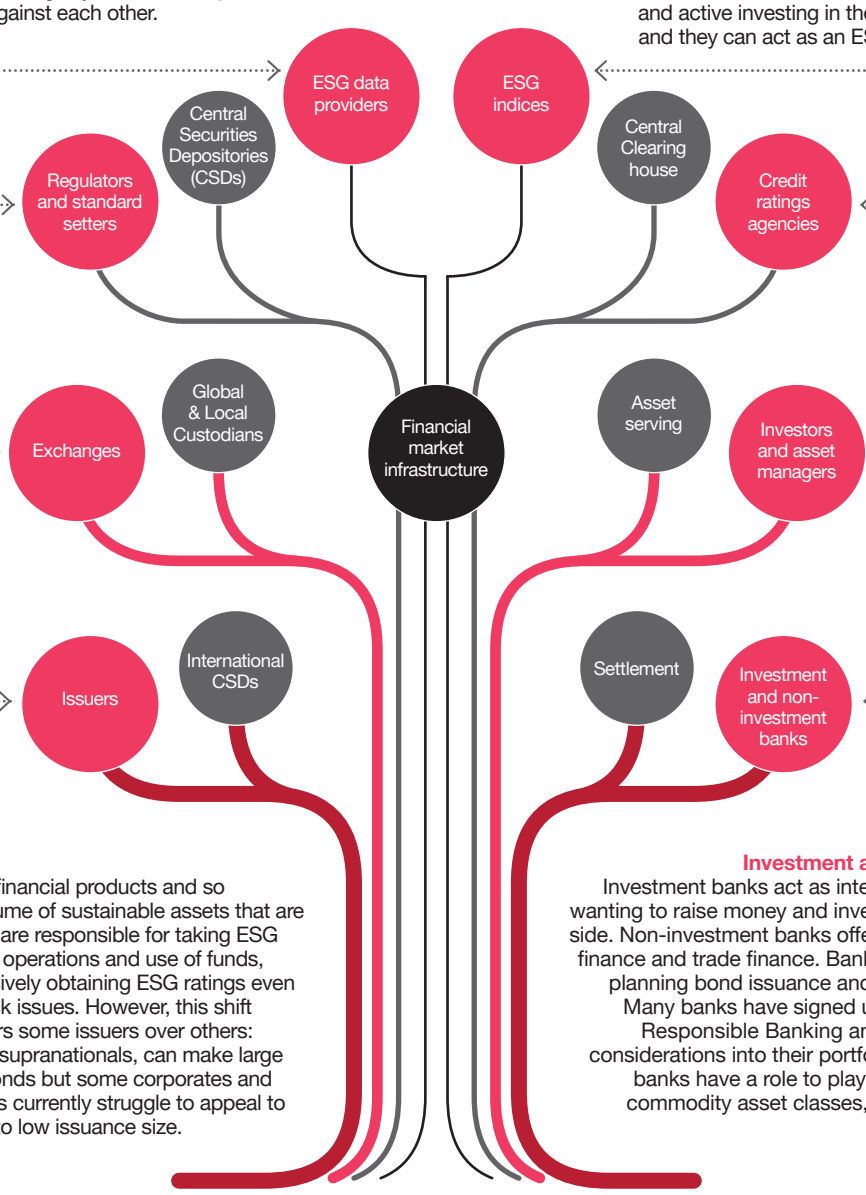
Figure 3.1: Current market participant roles within the sustainable finance ecosystem

Regulators and standard setters
In the last decade, there has been a proliferation of regulations and ESG initiatives launched by regulators, international organisations and standard setters. They have developed requirements on the disclosure of ESG risks, launched principles for the issuance of sustainable finance products, and detailed taxonomies for sustainable activities. Their role is to regulate and support the development of the sustainable finance market, build investor confidence and reduce greenwashing.

Credit ratings agencies
Credit rating agencies (CRAs) assess and rate the credit risk of corporate and sovereign bonds. Having a higher credit rating typically makes a bond more attractive to investors and so reduces its yield. CRAs reduce asymmetric information between issuer and investor and create trust in the bond market. CRAs don't explicitly rate companies on ESG factors although qualitative ESG risks are considered as part of a credit risk assessment.

ESG data providers
Increasing numbers of investors are relying on ESG data providers to assess countries' and companies' ESG performance. They collate information on issuers' ESG practices and develop ratings systems to compare countries and companies against each other.

ESG indices
ESG indices track sets of stocks or bonds that comply with certain ESG criteria. Set by the index provider, these criteria are transparent and allow for ESG funds to be created that track these indices. This allows for passive and active investing in the sustainable finance market and they can act as an ESG benchmark for investors.



Issuers
Issuers supply sustainable financial products and so determine the type and volume of sustainable assets that are offered to the market. They are responsible for taking ESG factors into account in their operations and use of funds, with the corporate progressively obtaining ESG ratings even for traditional common stock issues. However, this shift in issuance practices favours some issuers over others: trusted issuers, particularly supranationals, can make large issuances of sustainable bonds but some corporates and emerging market sovereigns currently struggle to appeal to international investors due to low issuance size.

Investment and non-investment banks
Investment banks act as intermediaries between issuers wanting to raise money and investors, representing the sell-side. Non-investment banks offer corporate lending, project finance and trade finance. Bank roles include underwriting, planning bond issuance and arranging equity financing. Many banks have signed up to the UN's Principles for Responsible Banking and have to incorporate ESG considerations into their portfolios. Additional, investment banks have a role to play in creating new sustainable commodity asset classes, as Standard Chartered has done in carbon markets.

Exchanges
While most bonds trade over-the-counter, they can also be traded publicly on exchanges. The London Stock Exchange has hosted the debut green bond issuances from Hong Kong and Chile and the first emerging market, green and sovereign bonds from Fiji. Exchanges also host ESG equities.

Investors and asset managers
Investor demands and preferences determine the amount of financing issuers receive for certain products. Sustainability and ESG factors are playing a greater role in investment decisions. This includes impact investing, negative screening of stocks with poor ESG ratings and shareholder activism.

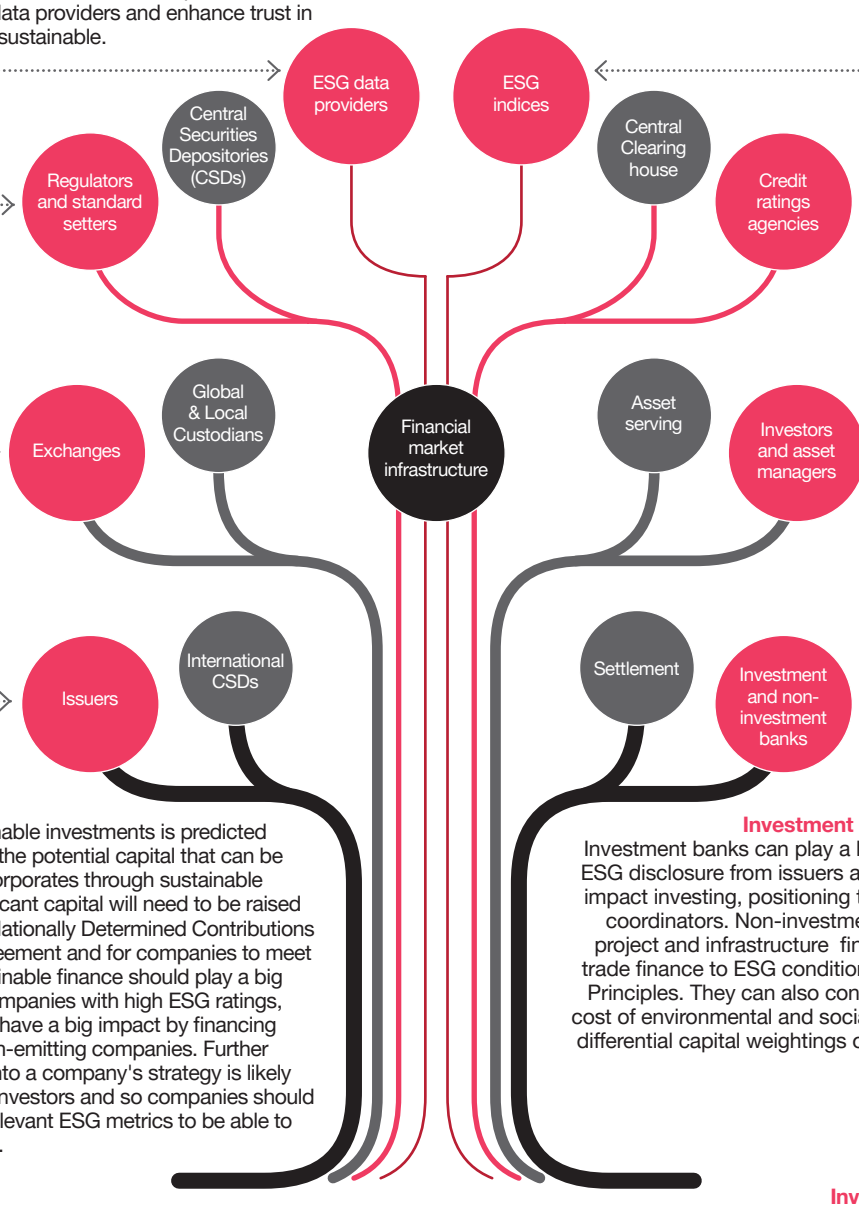
Figure 3.2: Opportunities for market participant to contribute further to the growth of the sustainable finance market

Regulators and standard setters
Convergence of the many different regulations and taxonomies would help to simplify the process for issuers and investors and help to grow the market by reducing issuance costs and improving trust in the market. However, there will always be cultural, process and environmental nuances across markets. Therefore, in addition to simplifying processes where they can, regulators and standard setters also have a responsibility to build systems and frameworks which accept these key differences.

Credit ratings agencies
While some credit ratings agencies have already begun integrating ESG factors into the credit rating process, this can be more done in a more standardised way through the use of quantitative ESG measures and the development or acquisition of in-house ESG data teams.

ESG data providers
Investor demand for ESG ratings is rising and increasing regulation on disclosure and taxonomy is only going to increase this. Convergence of taxonomies and improved data quality through the use of technology and machine learning could reduce the discrepancies between ESG scores from different data providers and enhance trust in financial products listed as sustainable.

ESG indices
Further expansion of ESG indices and ETFs, particularly for social and sustainable bonds and stocks, will enhance the secondary ESG market and appeal to a wider pool of investors.



Issuers
Investor demand for sustainable investments is predicted to continue to grow and so the potential capital that can be raised by sovereigns and corporates through sustainable finance is significant. Significant capital will need to be raised for countries to meet their Nationally Determined Contributions (NDCs) under the Paris Agreement and for companies to meet their net zero targets. Sustainable finance should play a big role in this. In addition to companies with high ESG ratings, transition bonds could also have a big impact by financing emissions reductions in high-emitting companies. Further integration of eSG factors into a company's strategy is likely to be demanded by equity investors and so companies should improve their reporting of relevant ESG metrics to be able to do this on an informal basis.

Investment and non-investment banks
Investment banks can play a large role in driving improved ESG disclosure from issuers and educating their clients on impact investing, positioning themselves as "sustainability coordinators. Non-investment banks can continue to tie project and infrastructure finance, corporate lending and trade finance to ESG conditions, as set out by the Equator Principles. They can also conduct consider the externality cost of environmental and social impacts through pricing or differential capital weightings on their on lending portfolios.

Exchanges
Exchanges can increase the liquidity in the secondary market for sustainable bonds which will attract more investors. Stock exchanges can also assist with promoting better ESG disclosures amongst their listed companies. Supporting the listing of sustainable securities from emerging and frontier markets on major exchanges will allow them to reach more international investors and help them raise greater sustainable finance.

Investors and asset managers
A continuation of the upward trnd in investor and asset manager awareness and consideration of ESG factors will provide greater ESG mandates for companies and governments to improve their sustainability profiles through sustainable finance issuance. Further pressure from investors and asset managers on ESG risk management and disclosure can also help to improve standards.

[134] Clifford Chance, Growing the Green Economy: Addressing the Sustainability Challenges and Opportunities, July 2019.

3.4 The role of financial market infrastructures

FMIs also play a critical role in facilitating sustainable finance, supporting its everyday operation. FMIs are the networks which allow financial transactions to take place. They include: central securities depositories (CSDs), international central securities depositories (ICSDs), payment systems, central counterparties (CCPs), security exchanges, securities settlement systems and trade repositories. FMIs underpin the entire financial system and promote safety, trust and efficiency in financial transactions.[135] At a broad level, FMIs support the sustainable finance market just as they support the rest of the financial market. They allow the market to function by enabling sustainable financial transactions. This includes transactions of stocks, corporate and sovereign bonds, and other financial instruments with ESG attributes, as well as the transactions of explicitly sustainable instruments, such as green bonds and sustainable loans. In this manner, FMIs build trust in the sustainable finance market and support its everyday operation.

FMIs can be segmented by cross-border FMIs and domestic FMIs. Cross-border FMIs offer capabilities which enable and facilitate the connection of issuers and investors across borders through, for example, cross-border payments or settlements. Domestic FMIs are those with capabilities which are inherently domestic – for example, a local CSD, which provides services for securities which are traded and settled in the same jurisdiction. While both types of FMI are integral to the smooth functioning of financial markets, this report focuses on the role of cross-border FMIs in particular.

One key capability of FMIs is their provision and maintenance of essential financial market infrastructure. They operate multilateral information technology systems with data and technical infrastructure, which uphold and strengthen the efficiency, liquidity and risk management of financial markets. By facilitating transactions through their systems, FMIs serve as funnel points for disparate sources of information. This means they are able to direct and disperse information to where it is needed.

Another key capability of FMIs, in particular cross-border FMIs, is their central operating position in the market, holding key relationships with all financial market participants. Cross-border FMIs – such as Euroclear, Clearstream, SWIFT and CLS – have touch points across the financial market ecosystem – from issuers to asset managers and all other participants in between, including exchanges, listing agents and data providers. Euroclear, for example, has an overwhelming majority of financial market participants, including 100 central banks as members of its systems.[136] Additionally, it has a presence across the developed, emerging and frontier markets. This neutral, relationship-holding position allows FMIs to facilitate engagement across market participants, identify opportunities for growth and bridge any communication gaps that may exist.

> “By facilitating transactions through their systems, FMIs serve as funnel points for disparate sources of information.”

[135] Bank of England, Financial market infrastructures - what happens when you pay?, 2021.
[136] Euroclear, ‘Building critical mass in the green bond market’, 14 February 2019.

3.5 Leveraging different approaches to grow the sustainable finance market

The sustainable finance ecosystem is complex and therefore requires a coordinated effort to scale. There exists a multitude of market participants, each with different capabilities and specialist knowledge, depending on their role and position in the market. While each participant within the financial market ecosystem has a role to play in growing the sustainable finance market, a coordinated effort across all market participants requires a strategic and coordinated approach.

There have been a variety of approaches considered or already tested to grow the sustainable finance market. Some approaches have been tested or suggested from other areas of financial markets, while others are unique to sustainable finance.

Four common approaches to achieving market scale include:

- institution approach
- platform approach
- product approach; and
- taxonomy approach.

The following sections provide an overview of these common approaches and their applicability to the sustainable finance market today.

Institution approach

An institution approach requires a limited few institutions to take the lead in developing and providing the whole sustainable finance value chain. In the public sector, governments have set up financial institutions where they have identified areas of market failure (e.g. specialist insurance, SME investing). This is also akin to the 'financial supermarket' approach popularised in the 1990s, which involved banks serving as one-stop-shops for all their customers' financial services needs.[137] In practice, this means taking an integrated approach to reap the benefits of economies of scale and scope – and to prevent operational redundancy and excessive transaction costs.[138] However, the supermarket approach has previously received limited traction, with consumers wanting a choice between financial service providers. Ultimately, high incentives for financial service providers to cross-sell within their businesses – rather than across the market – has led to low consumer confidence in the approach.

These imperfect incentives suggest the financial supermarket approach would not be effective in scaling sustainable finance. In the context of sustainable finance, a sustainable financial supermarket would necessarily need to have business units or partnerships which can deliver the wide array of input required for a sustainable finance security, such as ESG data solutions and sustainability assurance. It is true that the institution approach has worked for distinct elements of the sustainable finance market, such as the network of green investment banks who have worked to bring green standards to the market or the 90+ Equator Principles Financial Institutions (EPFI) who have committed to embed environmental and social standards using the IFC's framework to project finance and project-related lending. However, with regard to scaling sustainable finance flows in mass, it is unlikely that a one-stop-shop for sustainable securities would be effective in scaling sustainable finance flows. Additionally, the impressive growth of the sustainable finance market to date suggests the opportunity to create a one-stop-shop for sustainable finance at inception has passed. It is simply past the infancy period for an institution-led approach.

[137] Wall Street Journal, 'Citigroup Is Said to Deliver As Financial Supermarket', 2 March 2000.
[138] Federal Reserve Bank of Atlanta, 'The Evolving Financial Supermarket', June 2017.

Platform approach

A platform approach, with strong fintech support would involve open access to sustainable securities from within one financial service provider. Following the financial supermarket model decline with the 2008 Global Financial Crisis, some market participants have sought to optimise this business model. This culminated in the 'banking as a platform' (BaaP) approach in which a customer can also access the financial services of select partners within their core banking platform.[139] One successful example of BaaP in the sustainable finance market is the partnership between German BaaP Solarisbank and digital bank Tomorrow, offering a "mobile current account with a sustainable debit card, which enables automatic investment of customer savings into ESG screened projects".[140]

While fintech can certainly bridge gaps in traditional financial market infrastructure and should be championed going forward where it can create efficiencies, there has not been a large uptake of the BaaP model in the sustainable finance market so far. This is likely attributed to the challenges in launching a BaaP service, which go beyond data collection, storage and sharing. Like the financial supermarket model, the BaaP approach is underpinned by poor incentives to cross-sell to other market participants and share data, due to "siloed and competing business units".[141] While there are retail benefits to BaaP providers, there is not enough evidence to suggest the approach can bring together the necessary market participants to mobilise significant investment in sustainable finance needed to expand the market.

Product approach

The product approach has also been tested, particularly with green bonds, which have been characterised as catalysts for sustainable finance. The surge in interest in green bonds over the past few years has demonstrated the application of a sustainability framework to a traditional fixed-income debt product, whereby the proceeds are earmarked for specific green projects.

However, the application of a product-level approach is not as straightforward for other asset classes in which the investment proceeds cannot be as easily traced to one initiative. For example, an ESG assessment of equities is typically baked into the overall company-level assessment and can take the form of fundamental, quantitative, smart beta or passive strategies, all of which consider different elements of an issuer's operations across the business.[142] Therefore, it is more difficult to isolate the ESG elements of an equity product or alternative financial instrument, than it is for a green bond.

This key difference highlights that not all sustainable securities share the same environmental purpose and therefore cannot be marketed in the same way. The 'green' promise of a green bond is to report on a specific set of projects and does not necessarily apply to the issuer itself.[143] For example, the Bank for International Settlements explored the impact of green bonds on carbon emissions and found that while green bonds may have project-specific environmental benefits, they do "not [necessarily] lead to falling or even comparatively lower carbon emissions by the firms selling them".[144,145] This suggests that scaling up the green bond market would not be entirely helpful to issuers needing to transition their overall operations to more sustainable practices, such as mining companies.[146] In response to this shortcoming, the market introduced transition bonds and sustainability-linked bonds in 2019 to "allow for more outcome-focused sustainable finance"; however, introducing bespoke products every time one product falls short risks market fragmentation, which can lead to inefficiencies in the long term.[147]

[139] Larry D. Wall at Federal Reserve Bank of Atlanta, 'The Evolving Financial Supermarket', June 2017.
[140] Tomorrow, 'Tomorrow is cooperating with SolarisBank/Press Release', 11 April 2018.
[141] Evan Kulak at Medium, 'FinTech and the Financial Supermarket', 24 July 2017.
[142] United Nations Principles for Responsible Investment, 'A practical guide to ESG integration for equity investing', 2016.
[143] Reuters, 'Breakingviews - Green bonds could slide into irrelevance', 17 September 2020.
[144] BIS, 'Green bonds and carbon emissions: exploring the case for a rating system at the firm level', BIS Quarterly Review, 14 September 2020.
[145] Reuters, 'Breakingviews - Green bonds could slide into irrelevance', 17 September 2020.
[146] Maltais, A. & Nykvist, B. (2020), 'Understanding the role of green bonds in advancing sustainability', Journal of Sustainable Finance and Investment, 30 January 2020, https://doi.org/10.1080/20430795.2020.1724864.
[147] Marius Patsch, Head of Sustainable Bonds & Finance at DZ Bank, 'The 2020s - The decade of Sustainable Bonds', Environmental Finance, 11 February 2020.

Additionally, there is doubt around the green bond's ability to unlock new capital. A recent study on the Swedish green bond market found that "in practice [market participants] have largely shifted capital from state bonds to investment grade municipal and corporate bonds".[148] To drive the sustainable finance market forward, there is a need to mobilise investment from new sources of capital or from sources that would not have otherwise invested in sustainable finance products.

Finally, green bonds are not the only sustainable financial instrument and, in fact, make up a minority share of the market. While green bonds accounted for roughly 46% of global sustainable bond issuance in H1 2021, other sustainable products within debt and equity capital markets make up the vast majority of the sustainable finance market.[149] It is true that green bonds have helped to facilitate wider discussions around sustainability, but there are fundamental limitations of the product-level approach that would impede the long-term success of the sustainable finance market.

Taxonomy approach

Market participants have also explored a taxonomy approach to improve the clarity and integrity of the sustainable finance market. Taxonomies enable agreement on definitions and standards across the global market, which has been important in supporting the growth of sustainable finance thus far. However, despite the good intentions of taxonomy and standard setters, there becomes a dilutive effect as more and more taxonomies are created, for several reasons set out below.

Taxonomies are only as helpful as the data which underpins them. This includes data definitions, methodologies and standards, all of which are dynamic over the lifetime of a sustainable security. Taxonomies may also suffer from lack of data availability and comparability. For example, the OECD found that "in an initial user test case developed inside the [EU's Technical Expert Group on Sustainable Finance], about one third of companies in the sample portfolio could not be assessed [by the draft EU taxonomy] because the necessary data was not available".[150] Furthermore, when the data was available, the test case found that often it could not be "aggregated between the different economic activities of a given company, or between the different companies in the portfolio of an investment fund".[151]

Additionally, taxonomies are not stand-alone approaches. They are designed with a specific market environment in mind, which must have the right infrastructure, data and incentives established for the taxonomy approach to be successful. For example, the data they categorise is subject to verification by sustainability assurance providers. This creates an additional verification step which adds to the issuance cost of sustainable securities and is subject to the technical capacity available in the local market. This is a key reason that some analysts doubt the practicality of emerging markets meeting the criteria of the EU Taxonomy – the different environments and priorities of developed, emerging and frontier markets mean some issuers will inevitably be excluded from the global sustainable finance market if they cannot meet the requirements of certain taxonomies.[152]

> "Despite the good intentions of taxonomy and standard setters, there becomes a dilutive effect as more and more taxonomies are created."

[148] Maltais, A. & Nykvist, B. (2020), 'Understanding the role of green bonds in advancing sustainability', Journal of Sustainable Finance and Investment, 30 January 2020, https://doi.org/10.1080/20430795.2020.1724864.
[149] Refinitiv, 'Sustainable finance surges in popularity during H1 2021' 27 July 2021.
[150] OECD, 'Developing Sustainable Finance Definitions and Taxonomies', 2020.
[151] OECD, 'Developing Sustainable Finance Definitions and Taxonomies', 2020.
[152] Saalam Gateway, 'Learning from mistakes, Indonesia moves to next phase of sustainable finance roadmap', 20 February 2021.

As with the product-level approach, the environmental impact of the taxonomy approach is unclear. Taxonomies can restrict investment with prescriptive definitions. The OECD presents the example of climate mitigation policy, in which taxonomies with government-imposed eligibility thresholds for activities that qualify as sustainable may curtail additional private investment into these activities once they meet the minimum required investment.[153]

While there have been several approaches to scaling sustainable finance, each approach has its own shortcomings which could inhibit the long-term success of sustainable finance. The approaches set out above do not strike the necessary balance between catering for specific market nuances and facilitating a global sustainable finance market-scaling effort. The market therefore requires a new approach which better aligns the incentives of market participants to efficiently scale the sustainable finance market, without leaving developing and frontier markets behind.

3.6 Introducing a cross-border FMI-driven approach

Cross-border FMIs are uniquely placed to support the continued growth of the sustainable finance market. Due to their presence across the financial market value chain, their data infrastructure systems and their trusted relationships across the financial market ecosystem, cross-border FMIs have the ability to truly embed finance practices and processes within the market. Integrating sustainability into traditional market infrastructure will better support the growth of sustainable finance through reduced barriers to issuance and investment. It will also enable both the sustainable finance and mainstream financial markets to be agile in times of change, with a renewed ability to account for non-financial performance. This will become a particularly important feature of financial markets as the environment changes before us, and will ensure the long-term viability and economic efficiency of sustainable finance.

> “A cross-border FMI-driven approach to scaling the sustainable finance market can be defined as bringing together market scaling efforts in a coordinated way across the financial market ecosystem to create the right conditions and incentives to support the transition of sustainable finance to a mainstream market.”

A cross-border FMI-driven approach has been levered previously to address discrete challenges in both developed and emerging markets. These include connecting domestic markets with international markets, supporting multi-currency delivery vs. payment and settling and clearing secondary market trades. See **Box A** for a case study of how FMIs have supported the eurobond market with efficient primary distribution and secondary market trading. See **Box B** for a case study of how FMIs have supported markets to become ‘euroclearable’.[154]

[153] OECD, ‘Developing Sustainable Finance Definitions and Taxonomies’, 2020.
[154] Euroclearability is defined by a set of conditions designed to establish an environment where international investors are better able to access a domestic bond market.

Box A: Improving infrastructure in the eurobond market

Eurobonds are bonds denominated in a different currency to the currency of the country in which they are issued. A eurodollar bond, for example, is denominated in US dollars and can be issued in any country outside of the USA. Autostrade, an Italian company, issued the first eurobond in 1963: a US$15 million eurodollar bond with a 15 year maturity and a 5.5% annual coupon.[155]

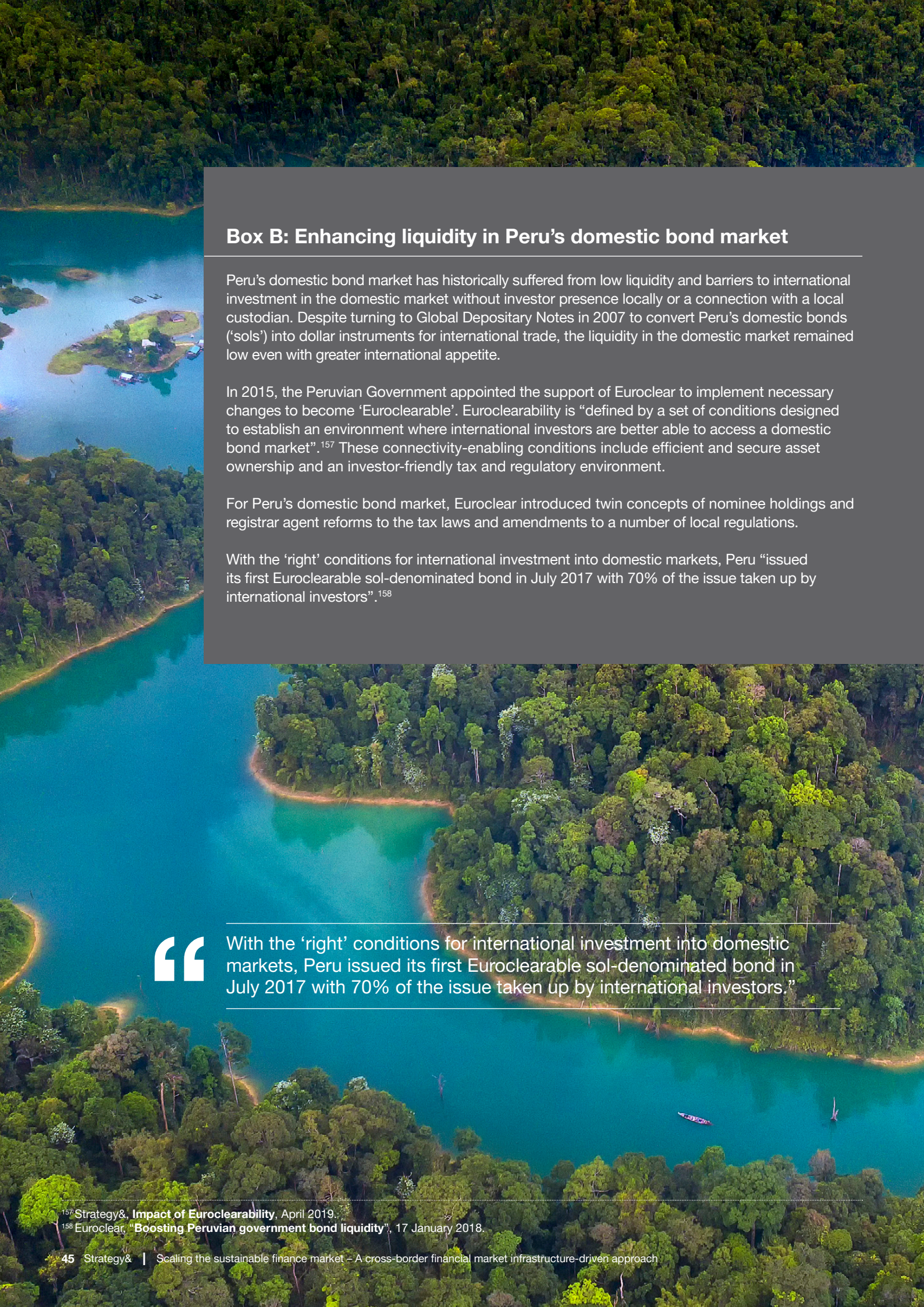
Eurobond market issuance grew quickly in the 1960s and 70s and established the market as a channel of intermediation for international capital flows. The main reason for this growth, alongside strict issuing requirements of domestic bond markets, was the establishment of an infrastructure for efficient primary distribution and secondary trading of eurobonds.[156] Eurobond issuance continued to grow significantly in the 1980s, growing from US$26 billion in 1980 to US$224 billion in 1989. This was driven by a rapid growth in secondary market trading of eurobonds as investors desired liquidity. This over-the-counter trading occurred through the international clearing systems of Euroclear and Cedel (now Clearstream).

Euroclear and Cedel led further improvements to the market infrastructure in the 1980s which made investing in eurobonds more attractive to institutional investors and central banks. In 1980, the two FMIs linked themselves electronically, enabling simultaneous book-entry transfers in one system to be made against payments with members on the other system. In 1989, the trade-matching and confirmation system, TRAX, was launched by Euroclear and Cedel. This was designed to increase the efficiency of settlements and reduce the risk of settlement errors.

The cooperation between Euroclear and Cedel to develop and improve the infrastructure for the secondary trading market for eurobonds shows the enabling effect that cross-border FMIs can have on the growth of financial markets.

“The cooperation between Euroclear and Cedel (now Clearstream) to develop and improve the infrastructure for the secondary trading market for eurobonds shows the enabling effect that cross-border FMIs can have on the growth of financial markets.”

[155] ICMA, History of the Eurobond market, 2021.
[156] Bank of England, The international bond market, The Bank of England Quarterly Bulletin: November 1991.



Box B: Enhancing liquidity in Peru's domestic bond market

Peru's domestic bond market has historically suffered from low liquidity and barriers to international investment in the domestic market without investor presence locally or a connection with a local custodian. Despite turning to Global Depositary Notes in 2007 to convert Peru's domestic bonds ('sols') into dollar instruments for international trade, the liquidity in the domestic market remained low even with greater international appetite.

In 2015, the Peruvian Government appointed the support of Euroclear to implement necessary changes to become 'Euroclearable'. Euroclearability is "defined by a set of conditions designed to establish an environment where international investors are better able to access a domestic bond market".[157] These connectivity-enabling conditions include efficient and secure asset ownership and an investor-friendly tax and regulatory environment.

For Peru's domestic bond market, Euroclear introduced twin concepts of nominee holdings and registrar agent reforms to the tax laws and amendments to a number of local regulations.

With the 'right' conditions for international investment into domestic markets, Peru "issued its first Euroclearable sol-denominated bond in July 2017 with 70% of the issue taken up by international investors".[158]

> "With the 'right' conditions for international investment into domestic markets, Peru issued its first Euroclearable sol-denominated bond in July 2017 with 70% of the issue taken up by international investors."

[157] Strategy&, **Impact of Euroclearability**, April 2019.
[158] Euroclear, "**Boosting Peruvian government bond liquidity**", 17 January 2018.

Whilst the FMI-driven approach has yet to be tested, it has potential to create positive and lasting change in the sustainable finance market. FMIs have experience creating informational and connectivity efficiencies in traditional financial markets. The market can draw upon this experience to solve some of the fundamental challenges facing sustainable finance globally today.

In particular, a cross-border FMI-driven approach can support sustainable finance in emerging and frontier economies. At its core, a cross-border FMI-driven approach offers pragmatic solutions to foster an environment which incentivises greater sustainable finance flows through an open architecture approach by both cross-border and domestic FMIs. The opportunities of a cross-border FMI-driven approach (set out in more detail in **Chapter 4**) are pragmatic because they address root problems in market infrastructure, which are common to emerging and frontier economies. Analysts expect that with FMI-enabled improvements in disclosure and standardisation of green labels, sustainable finance could have "an equivalent impact [in emerging markets] to the Brady bonds of the 1980s".[159] Therefore, a cross-border FMI-driven approach may offer a critical inflection point for these economies.

3.7 Conclusion

The current financial market ecosystem accommodates sustainable finance, but does not sufficiently incentivise it. Market participants have supported the initial growth of sustainable finance so far. However, it will take more than siloed efforts to enable a step change in growth and wholesale transformation of the sustainable finance market to a financial market which is sustainable.

Transitioning the sustainable finance market from a niche subset of traditional finance to a mainstream market will require a centrally orchestrated effort across the financial market ecosystem. Common approaches to financial market growth are not fit to enable this transition, as they do not strike the necessary balance between catering for specific market nuances and facilitating a global sustainable finance market scaling effort. With an increasingly important ESG agenda, particularly the urgency of climate change, a new approach – one that is holistic yet pragmatic in financing our sustainable future – is needed.

A cross-border FMI-driven approach can support the continued long-term growth of the sustainable finance market. Cross-border FMIs are uniquely placed to support the continued growth of the sustainable finance market. Due to their presence across the financial market value chain, their data infrastructure systems and their trusted relationships across the financial market ecosystem, cross-border FMIs have the ability to truly embed finance practices and processes within the market. Additionally, a cross-border FMI-driven approach has been used previously to address fundamental market challenges, including liquidity, efficiency and risk. It therefore has the potential to efficiently and effectively bring together financial market participants to deliver this market transformation.

[159] Pictet Asset Management, 'Why EM bond investors can no longer ignore ESG', March 2021. Note that Brady bonds were an innovative debt reduction programme in response to the Latin American debt crisis of the 1980s, involving the issuance of US dollar denominated bonds, enabled by FMIs such as Euroclear.

CHAPTER 4: A CROSS-BORDER FMI-DRIVEN APPROACH

> FMIs have an opportunity to simplify and clarify what is required to issue a successful sustainable finance security – one that will be attractive to international investors – from the start of the issuance process."

Summary

- Cross-border FMIs hold trusted, central and neutral positions within the global financial ecosystem, with efficient infrastructure systems, wide-reaching networks geographically across the financial services value chain and visibility of – and access to – data which underpins all transactions.
- Cross-border FMIs can leverage their place within the financial ecosystem to unlock three distinct opportunities to foster an environment which incentivises sustainable finance at each stage of the market's maturity.
- First, cross-border FMIs can encourage a greater supply of sustainable investment opportunities within the market by reducing key barriers to issuance. Cross-border FMIs have an opportunity to simplify and clarify what is required to issue a successful sustainable finance security – one that will be attractive to international investors – from the start of the issuance process. In doing so, they can support the supply and pipeline of sustainable securities to match the strong investor demand, which is an essential first step to creating a foundation for expanding the size of the market.
- Secondly, cross-border FMIs can improve the processing of ESG information between market participants. With a strong track record in managing data, cross-border FMIs can facilitate streamlined due diligence and ESG disclosure reporting communications between the issuer and investor. Supporting investors to discern which securities are, indeed, sustainable and to take confidence that their investments will remain in line with their sustainable investing objectives will ultimately serve to uphold the integrity of the sustainable finance market.
- Thirdly, having established clear steps for issuers in the security issuance process and simplified ESG information flows between market participants once the security has been issued, ross-border FMIs can then use their central and neutral positioning within the financial ecosystem to 'crowd-in' more participants on both the issuer and investor sides, and widen the scope of sustainable finance to new asset classes. Implemented over the longer term, this will introduce an additional layer to the sustainable finance market, providing diversification benefits to both issuers and investors, which will ultimately be necessary for scaling the sustainable finance to a mainstream market.

> FMIs can leverage their place within the financial ecosystem to unlock three distinct opportunities to foster an environment which incentivises sustainable finance at each stage of the market's maturity."

4.1 Overview of a cross-border FMI-driven approach

A cross-border FMI-driven approach involves bringing together market scaling efforts in a coordinated way across the financial market ecosystem to create the right conditions and incentives to support the transition of sustainable finance to a mainstream market. Specifically, there are three opportunities for cross-border FMIs to support the sustainable finance market across the security lifecycle, set out below and in **Figure 4.1:**

Figure 4.1: FMI opportunities

These opportunities will enable cross-border FMIs to scale sustainable finance at each stage of the market's maturity. Given that some sustainable securities and regions are more active in the sustainable finance market than others, taking a holistic cross-border FMI-driven approach which supports market participants and asset classes regardless of where they sit along the market's trajectory means that no one element should be left behind. Structured in this way, a cross-border FMI-driven approach can support the levelling up of sustainable finance market capability and activity globally, bringing everyone along on the journey, whether they are a long-standing market participant or just entering the market. In doing so, a cross-border FMI-driven approach facilitates a baseline level of global transparency around sustainable finance and ESG data, which is critical to transition from sustainable finance as a subset of the market to a global financial system which is sustainable.

First, cross-border FMIs can encourage a greater supply of sustainable investment opportunities within the market by reducing key barriers to issuance. Key barriers include infrastructure, regulatory and informational barriers, all of which prevent issuers from entering or engaging with the sustainable finance market. These barriers also have implications for investors, as investors require a steady and diversified pipeline of sustainable investments to truly integrate sustainable finance into their portfolios. Investors have to be able to make informed decisions about a security, which may fall along a spectrum of 'sustainability'; to create this space for investor choice, all potential issuers need to be able to first access and engage with the sustainable finance market.

Cross-border FMIs can then foster trust and transparency in the sustainable finance market by improving the processing of ESG information within financial markets. With increasing integration of non-financial performance indicators into financial systems, cross-border FMIs have a big role to play in facilitating use of this new language between market participants. Key improvements are needed in the processing of ESG metrics, ESG disclosure and ESG assurance, to ensure that these key pieces of information flow systematically between issuers and end-investors and are commonly understood and interpreted by all financial market participants.

Finally, with support from domestic FMIs, cross-border FMIs can mobilise greater sustainable finance flows by expanding the sustainable finance market to more asset classes and market participants. While market expansion may be reserved for areas of the market which have relatively high activity or long tenure – for example green bonds – it is nonetheless an important opportunity for FMIs to drive forward where possible. Without market expansion to more asset classes and market participants, there is a risk that sustainable finance remains a subset of overall financial markets and that the two never converge. This outcome would be detrimental to the achievement of the UN's SDGs. Society is headed towards a financial system which is sustainable, and scaling the sustainable finance market is simply a means to support this transition.

Within each of these opportunities, there are a number of distinct market-scaling enablers which cross-border FMIs can offer to support the continued growth of the sustainable finance market. These enablers are discussed in more detail throughout this chapter.

4.2 FMIs reduce barriers to issuance

As explained in Chapter 2, barriers to issuance have been identified as a major impediment to market growth. These include significant upfront administrative costs – such as the costs of obtaining ESG scores or procuring sustainability assurance – and informational asymmetries around issuance processes, which are particularly challenging for small or new issuers. For some regions, underdevelopment of capital markets is another key barrier. These barriers to issuance have contributed to the supply of sustainable finance securities falling short of the investor demand for ESG products, and will only become more of a barrier as investor demand continues to grow[160]. Therefore, supporting issuers to engage in the market is an essential first step to scaling the size of the sustainable finance market and should be prioritised over the short-to-medium term.

The central position of cross-border FMIs in financial markets means that they are able to encourage greater sustainable finance issuance, namely by reducing infrastructure and regulatory barriers, and informational barriers to issuance. Cross-border FMIs can reduce infrastructure and regulatory barriers by leveraging their market neutrality to support the development of fundamental infrastructure and regulation needed to support capital market depth. They can also reduce informational barriers by simplifying and clarifying what is required to issue a successful sustainable finance security. They can help issuers to not only enter the sustainable finance market but also meet investor expectations on an international scale. In reducing key barriers to issuance, cross-border FMIs can support a steady supply and pipeline of sustainable securities.

[160] Deschryver and de Mariz (2020). "What Future for the Green Bond Market? How Can Policymakers, Companies, and Investors Unlock the Potential of the Green Bond Market?", Journal of Risk and Financial Management, Vol. 13, Issue 61. https://www.mdpi.com/1911-8074/13/3/61/pdf.

Encouraging greater issuance by reducing infrastructure and regulatory barriers to issuance

Conducting gap analysis of market infrastructure and regulation

While financial market infrastructure has developed considerably in emerging and frontier markets in the last few decades, significant gaps remain. A strong foundation of financial market infrastructure and regulation are two important ingredients for any degree of capital market depth. Many countries have pursued greater capital market deepening, as evidenced by the considerable rise in debt issuance by low- and middle-income countries over the last decade.[161] However, gaps remain in terms of market infrastructure and regulation. Many smaller countries have basic or no domestic Central Securities Depositories (CSDs) which limits their capital market depth due to increased risk and higher transaction costs. Without this necessary market infrastructure, sustainable finance in these countries is limited. Additionally, IOSCO's Growth in Emerging Markets Committee found that, while a number of regulatory initiatives for sustainable finance have been launched in emerging and frontier markets, the regulatory environment itself could be improved.[162]

The global reach of cross-border FMIs can support the efficient use of gap analysis to identify the critical gaps in financial market infrastructure capabilities and regulation within the least-developed markets. While the financial market infrastructure, capital market ecosystem and regulatory environment will each be unique by country, cross-border FMIs are well-positioned to identify the key improvements needed for local markets, as they hold an important and global perspective on what makes financial markets function well.

Assessing where there are critical gaps in financial market infrastructure and regulation in emerging and frontier markets will enable greater sustainable finance issuance from these countries. Currently, sustainable security issuance is dominated by developed markets or supranationals.[163] However, research by the International Finance Corporation, a member of the World Bank Group, estimated that there is US$23 trillion of climate-smart investment opportunities in just 21 emerging markets.[164] With improved financial market infrastructure, the potential for greater sustainable finance flows in these economies can be realised.

Working with regulators to advise on policy changes which promote financial market depth

Cross-border FMIs can collaborate with regulators and multilateral organisations to advise on policy changes which can directly improve financial market infrastructure. Euroclear has demonstrated its ability to partner with local market authorities for over 20 years, designing liquidity and accessibility solutions and driving regulatory and legislative change for Euroclearable markets. Additionally, programmes like the World Bank and IMF's ongoing Financial Sector Assessment Program[165] and the Climate Policy Initiative's regular reviews of the global and country-specific state of climate finance[166] add invaluable policy and regulation experience in markets where there may be wider gaps.

While financial market infrastructure is not unique to sustainable finance, the future requirements of a successful sustainable finance market should be kept at the front of mind. In markets where there are large gaps in infrastructure, there is an opportunity to develop capabilities which incentivise sustainable finance from inception. For example, regulation to enable trusted verification of sustainable securities, or processes to ensure adequate proof-of-impact reporting could facilitate greater sustainable finance flows at a system level. IOSCO's review of the role of securities regulators in sustainable finance in emerging markets is a helpful starting point.

[161] World Bank Group, International Debt Statistics 2021, 2021.
[162] International Organisation of Securities Commissions, FR08/2019 Sustainable finance in emerging markets and the role of securities regulators, June 2019.
[163] Climate Bonds Initiative, Sustainable Debt Global State of the Market 2020, April 2021.
[164] IFC, Climate Investment Opportunities in Emerging Markets, 2016.
[165] The World Bank, Financial Sector Assessment Program.
[166] Climate Policy Initiative, More about Climate Finance at CPI.

Encouraging greater issuance by reducing informational barriers to issuance

Providing a sustainable finance issuance guidance tool

There exists a wealth of issuance guides offered in today's sustainable finance market but there are a number of shortcomings with these resources.

Principally, these shortcomings include

- a focus on only the issuance process for fixed-income products with less support for equity-based sustainable finance securities;
- high-level guidance with little detail in practice on specific issuance process steps; and
- guidance specific to a single standard or taxonomy, which may hinder issuers seeking a wide range of international investors.

The latter is particularly important to address, as this lack of harmonisation means that sustainable finance issues are designed from the outset to be limited to the subset of investors who value that single taxonomy or standard. For example, FSD Africa has developed a green bonds toolkit aligned explicitly to the Climate Bond Standards and the EU's Green Bond Standard is largely aligned to ICMA's Green Bond Principles.[167,168] Moreover, the EU's Green Bond Standard Usability Guide advises that for non-EU issuers and projects there is simply "no flexibility to deviate from the EU Taxonomy criteria".[169] This type of guidance restricts the evolution of the market towards one of international participation and seamless cross-border flows.

Cross-border FMIs can help to address this challenge by offering an issuance guidance tool embedded within their systems which identifies the best practice process flows at every stage relevant to sustainable finance issuance on international markets.

The tool could offer step-by-step guidance for issuers seeking international market issuance to follow, setting out the recommended:

- frameworks, stipulating not only the allocation and use of proceeds, but also how the security will remain sustainable
- marketing documentation, including context on sustainability goals for Know-Your-Client (KYC) compliance and any investor tax incentives that an international investor may not be aware of
- legal documentation, including standardised contract templates for prospectuses and security contracts, which set out any regulatory requirements and shareholder protection clauses necessary to attract international investment
- data measurement mechanisms, including globally relevant ESG metrics to be measured
- assurance support, including the type of expertise needed from the provider (e.g. audit, technical) depending on target investor type, asset class or issuer sector; and
- reporting mechanisms, which include guidance on frequency, format and content.

[167] FSDAfrica, UKAid and Climate Bonds Initiative, Africa Green Bond Toolkit - A practical guide to issuing green bonds for Africa, August 2020.
[168] EU Technical Expert Group on Sustainable Finance, Usability Guide - EU Green Bond Standard, March 2020, p. 10.
[169] EU Technical Expert Group on Sustainable Finance, Usability Guide - EU Green Bond Standard, March 2020, p. 29.

The issuance guidance tool would be particularly helpful in supporting international investment in emerging markets. For example, if a green bond issuer in Kenya lists on the Nairobi Stock Exchange (NSE), it will be required to obtain three layers of independent review at various stages in the pre- and post-issuance processes as a requirement of NSE. If this issuer wants to attract EU institutional investment, it would need to procure an approved verifier who "understand[s] the EU Taxonomy, relevant EU legislation and [possesses] the professional skills to evaluate the alignment of the GBF, Green Projects and reporting with the EU Taxonomy and the EU GBS" as per EU Green Bond Standard requirements. While the requirements for both the NSE and the EU Green Bond Standard are clear in themselves, the level of detail required for each is not captured in existing guidance due to the fragmented nature of the market. However, the signposting of different requirements within a centralised and systematically distributed issuance guidance tool can offer the harmonisation of information scattered across various standards, principles, taxonomies and issuance guides that the market currently lacks.

The issuance guidance tool should also provide guidance for existing issuers who want to transition their existing vanilla issue(s) to be sustainable. The need for transition guidance has been recognised by the World Bank[170] and ICMA's Climate Transition Finance Handbook.[171] Because transitioning issuers can fall anywhere along the green/sustainability spectrum, a filter function of this guidance tool will be particularly useful, allowing issuers to receive best practice issuance guidance tailored to attracting the type of investment that is consistent with their ESG maturity.

Informing and highlighting globally relevant ESG metrics

While there is likely a set of ESG metrics common across the majority of standards and taxonomies, this commonality is largely unknown to market participants. The absence of a highest common denominator has already emerged as an issue in corporate sustainability reporting standards with the Association of Chartered Certified Accountants, in particular, speaking out on this gap.[172] This logic naturally extends to sustainable securities. It may be necessary to have different taxonomies and standards due to regional and sectoral nuances; however, "where [these] diverse standards are needed, transparency on the differences is crucial".[173]

Cross-border FMIs can help to inform and highlight the common set of core ESG metrics that are present in the most-used standards and which are globally-relevant. This could be done through a stock-taking exercise of the most-used sustainability standards to see where there is agreement on the importance of individual ESG metrics. These core metrics can be included within the guidance tool so that issuers are clear on what data points they need to measure and report to maximise the success of their issuance on international markets. This will set the sustainable finance market on a path towards standard measurement of sustainability performance in the same way as alpha is used as a standard measure of financial returns, helping investors to compare sustainability performance across securities. This set of ESG metrics can be regularly reviewed and built upon to include additional metrics as the market and standards evolve, by an industry sub-body to bring together the relevant parties.

Cross-border FMIs can support similar initiatives to move at pace and ensure that the set of metrics that is produced work for financial markets. This year, the International Financial Reporting Standards (IFRS) Foundation has taken steps to establish the International Sustainability Standards Board, with a mandate to develop a common ESG standard for reporting, based on the Task Force for Climate-related Financial Disclosures (TCFD) framework. This is an important milestone for sustainable finance and wider financial markets. However, there is also a necessary urgency around aligning market participants on ESG standards. Cross-border FMIs can support and accelerate the efforts of this and similar initiatives by providing input on what is feasible to integrate into existing financial systems, with a global perspective.

[170] World Bank, Issuing International Bonds - A Guidance Note, April 2019.
[171] ICMA, Climate Transition Finance Handbook - Guidance for Issuers, December 2020.
[172] ACCA, Mapping the sustainability reporting landscape - Lost in the right direction, May 2016.
[173] Deutsches Institut für Entwicklungspolitik, Upscaling Green Bond Markets: The Need for Harmonised Green Bond Standards, December 2017.

Creating standardised contract templates for sustainable securities

Cross-border FMIs can also provide standardised, best practice contract templates for specific sustainable securities. These templates should include investor protection clauses for put or step-up events should an issuer fail to deliver on its commitments to a sustainable use-of-proceeds, ongoing reporting or regular review of the issue by a sustainability assurance provider. This would ensure that issuers are held accountable, risks of greenwashing are significantly reduced and trust is built in the sustainable finance market. Standardised contract templates should also account for customisation beyond the common and essential terms, as well as language translation in order to be globally accessible, and can be easily integrated into existing FMI contracting services.

Matching eligible issuers with support providers

Grants and subsidies are commonly used to address market distortion and have been recognised as a classic approach for building the pipeline of inclusive business in challenging markets.[174] For example, in the development of the microfinance sector, it is estimated that grants, loans and guarantees totalled around US$20 billion in the first two decades, which eventually helped to make microfinance commercially attractive to both borrowers and investors.[175] Within sustainable finance, they are currently being used to overcome the prohibitive (initial) costs of issuance for small issuers: these costs include the financial resources required to attain sustainable finance assurance and impact reporting, to list securities on exchanges, and to obtain other third-party services required for successful issuances, which often provide a commercial disincentive for smaller issuers. The grants for sustainability assurance provided by the SRI Sukuk and Bond Grant Scheme[176] and discounts provided by Costa Rica's National Stock Exchange1[77] are two examples.

Support mechanisms for sustainable capital raising, however, could be more efficiently allocated. As it stands, there is no central location where issuers can go to identify the support they are eligible for globally. Beyond just sustainable capital raising, sustainable impacts are a public good, which means that they benefit everyone without costing everyone the same amount. The literature has recognised that it is "unlikely that environmental innovations will be able to replace existing systems [particularly of businesses who need to transition] without changes in economic frame conditions (e.g., taxes, subsidies, regulatory frameworks)".[178] Therefore, the market requires efficient allocation of these support mechanisms which incentivise sustainable finance issuance.

Cross-border FMIs can offer a user interface to match eligible issuers with international support schemes. There are different forms which the platform could take, but what is important is that it is user-friendly and easy for the issuer to find the mechanisms they are eligible for, based on their unique characteristics and requirements. There is also scope for this centralised platform to become integrated into cross-border FMI services and their digital infrastructure. For example, within an FMI platform, there could be messages that are automatically triggered on the interface to outline the support schemes for which a given party is eligible.

Advising support providers on where to concentrate their support

Both cross-border and domestic FMIs can also advise support providers, such as multilateral development banks. It is important for support mechanisms to be set up and targeted to provide the greatest net benefit. Therefore FMIs can advise support providers where they should target their support mechanisms (e.g. overcoming initial issuance barriers, supporting consistent ESG data creation which will benefit the whole value chain). This will help to ensure that these mechanisms (e.g. grants and subsidies) are set up in a way to provide the right incentives and to allocate resources where they are most needed.

[174] Stanford Social Innovation Review, Do No Harm: Subsidies and Impact Investing, 28 September 2012.
[175] As referenced in Mapping of Funding Flows, (2005), CGAP, from the working paper by Hudon, M., On the Efficiency Effects of Subsidies in Microfinance: An Empirical Enquiry, in MONITOR, From Blueprint to Scale: The Case for Philanthropy in Impact Investing, April 2012.
[176] Suruhanjaya Sekuriti Securities Commission Malaysia, Sustainable and Responsible Investment Sukuk Framework - An Overview, November 2019.
[177] EU-LAC Foundation, The potential of the Green Bond markets in Latin America and the Caribbean, September 2020.
[178] Geels, F. (2011). 'The multi-level perspective on sustainability transitions: Responses to seven criticisms', Environmental Innovation and Societal Transitions, Vol. 1, Issue 1, June 2011, pp. 24-40.

4.3 FMIs improve the processing of ESG information between market participants

Non-financial ESG information is a distinguishing element of the sustainable finance market which has complicated traditional investor due diligence. With greater volumes of information comes the risk of information bottlenecks. With the introduction of non-financial performance data, information bottlenecks and miscommunications have emerged in the sustainable finance market, complicating investor due diligence processes. Investors are facing difficulty discerning which securities are indeed sustainable and lacking confidence that their investments will remain sustainable. With an increasing number of new entrants in the market, trust needs to be built.

With strong track records in processing information flows, cross-border FMIs can improve the processing of ESG information across the financial ecosystem.

FMIs have an opportunity to systemise and optimise the flows of ESG data between issuers and end-investors over the security lifecycle, through their distribution and corporate actions processing functions across the following critical information categories:

- ESG metrics
- ESG disclosure; and
- ESG assurance.

In doing so, cross-border FMIs can foster trust in the sustainable finance market by improving the processing of ESG information within financial markets. Cross-border FMIs can support investors to discern which securities are, indeed, sustainable according to the investor's own due diligence criteria and take confidence that their investments will remain in line with their sustainable investing objectives. Improved information flows will also support a common understanding between issuers and end-investors on ESG expectations. Implemented over the medium-to-long term, this will serve to uphold the integrity of the sustainable finance market.

Processing ESG metrics

Creating a sustainable finance security tag

The static information held in the security identifiers used in capital markets today lacks detail on sustainability characteristics of securities. The current financial ecosystem makes use of identifiers such as ISIN, CFI or LEI codes, which (at present) do not capture sustainability characteristics over the security lifecycle. As the market evolves towards a blend of traditional and sustainable finance, the absence of sustainability characteristics in security identifiers will become an increasingly critical gap.

Existing processes to source information on the sustainability quality of securities are cumbersome and unstructured, due to the fragmented nature of the sustainable finance market. While investors have a choice of taxonomies and standards, these options both complement and complicate their due diligence processes. In just the green bond market alone, there exists a mix of international and national standards, including national standards in China, India, Brazil and France.[179] The market is also lacking a central place to compare the universe of sustainable finance securities against specific ESG performance indicators. Market participants, including the Climate Bonds Initiative, have signaled the need for consistency and comparability.[180]

[179] Deutsches Institut für Entwicklungspolitik, Upscaling Green Bond Markets: The Need for Harmonised Green Bond Standards, December 2017.
[180] Environmental Finance, 'Green bond standards are converging, says CBI', 27 February 2019.

Cross-border FMIs can offer an initial screening solution to bring structure to ESG information flows and investor due diligence.

Leveraging their neutral position within the financial ecosystem and their data processing capabilities, cross-border FMIs are well-placed to introduce a sustainable finance security tag, which holds reference data on the sustainability elements of the security. This reference information may ultimately be contained within a publicly accessible database, and include key information on:

- the sustainability standards or principles to which the security is aligned[181]
- the recognition labels awarded to the security by an ESG authority, regulator or jurisdiction;[182] and
- the security's performance against a set of globally-relevant ESG metrics common to most sustainable finance standards or taxonomies.

In order to uphold the integrity of the sustainable finance market, this tag should aim to maintain a baseline level of ESG quality within the database. This can be achieved by tagging only the securities which fulfil each of the three criteria above. For example, a security that is aligned to at least one set of standards, recognised by at least one ESG authority (unless otherwise exempt as is the case for the World Bank and US securities law), and reports regularly on the complete set of globally-relevant ESG metrics may be tagged. Nasdaq's Sustainable Bond Network has found success with its platform by offering bond issuers an application framework to ensure they meet all entry criteria.[183] Expanding this service outside of a subscription model through the open architecture of cross-border FMIs could overcome prohibitive costs to both issuers and investors. It would also enable investors to do a preliminary comparison of sustainable securities along the green/sustainability spectrum on a like-for-like basis, before conducting more thorough research on the quality of these securities in their formal due diligence processes.

Existing back-tagging methodologies can be used to ensure that existing issues are also tagged in the database. Tagging methodologies already used in energy efficiency (such as the EU Energy Label[184]) and securitisation (such as ESMA's STS Register[185]) can be used to "systematically tag and back-tag all new and outstanding issuance of securities and loans 'green' or 'sustainable'," in the database.[186] In this way, this tag can cover the full universe of sustainable finance securities.

Processing ESG disclosure

The sustainable finance market lacks a functionality by which standardised disclosure reports are systematically shared from issuer to investor, which would fall under the asset servicing remit. Asset servicers have a wide breadth of visibility across the global financial markets, yet greater information efficiencies can be made across security trading activities. While asset servicing is generally contextualised by pre-[187] and post-trade[188] activities, not all asset servicers cater for both sides of the trade. Therefore, despite the wide breadth of visibility that this concentrated group has across the global financial markets, information may be lost between pre- and post-trade activities. Instead, greater collaboration across the asset servicing value chain could lead to information efficiencies.

[181] Such as the Climate Bond Initiative's Climate Bonds Standard, ICMA's Green Bond Principles, Carbon Disclosure Project reporting standards or Global Reporting Initiative reporting standards.
[182] Such as the EC's Ecolabel, France's Socially Responsible Investment, Finansol, or Greenfin labels, Luxembourg's LuxFLAG label or Belgium's Toward Sustainability label.
[183] Environmental Finance, Sustainable Bonds Insight 2020, p. 50.
[184] BEUC, The New Energy Label Back to the A-G Scale!, January 2021.
[185] ESMA, Simple, Transparent, and Standardised (STS) Securitisation Notifications.
[186] Responsible Investor, "Ben Caldecott: Back-tag to the future! We need to tag all issuance - both new and old - for sustainability", 26 July 2017.
[187] Including electronic registration and transfer of securities; order processing by front office; risk management by middle office; order routing to the exchange; creating a matching trade.
[188] Including clearing; settlement by the back office; safekeeping services for physical securities; data information for DTC-eligible securities; dividend and interest payments / distribution, proxy voting and reorganization services; restricted securities services; corporate actions - e.g. event and tax reporting and processing; custodian services; fund administration.

Embedding an ESG disclosure reporting function in asset servicing

Cross-border FMIs, in partnership with domestic FMIs and listing agents, can improve the processing of ESG information through an embedded disclosure reporting function in asset servicing.

To simplify the flow of disclosure information across the security lifecycle, this function should have the following key features:

- standardised disclosure reporting templates
- performance monitoring mechanisms for disclosure communications; and
- centralised ESG data files to be transmitted alongside asset transactions.

These features can support improved event reporting. Event reporting is a key offering of asset servicing that should systematically capture any associated ESG communications. Societe Generale finds that "a controversy event will halt the rise in a stock price, and for a sustained period".[189] With increasing concern around ESG issues and transparency in the sustainable finance market, it is important that investors quickly receive clear communications from issuers should a high-controversy event take place. A standardised ESG disclosure function can equip asset servicers to transmit the issuer's ESG disclosure updates alongside revisions to credit ratings or ESG scores by third parties to provide full context to investors in the case of high-controversy ESG events.

Embedded ESG disclosure could also support corporate actions processing, such as cash collection or disbursement and pooled asset administration.[190] By distributing ESG disclosures with coupon or dividend payments, cross-border FMIs could facilitate greater investor engagement with issuers to increase transparency and trust within the market. Given these checkpoints are frequent (e.g. quarterly), it also provides issuers an opportunity to check with investors how their disclosure coverage is being received and make any necessary changes to better meet investor expectations. Similarly, whenever there is a fund substitution, interest rate adjustment or loan modification, it is important to share ESG disclosure with concerned parties to ensure that not only the credit enhancement is properly maintained but also the ESG quality of the fund is properly maintained.

Standardising ESG disclosure reporting templates

To facilitate greater comparability and consistent interpretation of ESG disclosure reports, FMIs can offer standardised disclosure reporting templates. These templates should have formatting or content options depending on an issuer's chosen taxonomy or standard, an investor group's preferences for specific key performance indicators (KPIs) or thematic data, or an issuer's reporting frequency. They may wish to work together with other market participants – including standard setters, sustainability assurance providers, asset managers and regulators – who have already begun this collaborative effort. For example, five sustainability and integrated reporting organisations[191] released a joint statement last year committing to greater collaboration to improve the interoperability between different standards and reporting frameworks, through a 'nested ecosystem'.[192] Distribution of these templates through a common disclosure reporting interface would enable data comparison across securities, which can be further enabled by the promotion of a set of globally-relevant ESG metrics within these templates.

[189] CNBC, 'Stock performance study shows companies should take environmental and social factors seriously', 7 February 2020.
[190] PwC, Simplification of securitisation.
[191] Global Reporting Initiative (GRI), CDP (formerly the Carbon Disclosure Project), Climate Disclosure Standards Board (CDSB), International Integrated Reporting Council (IIRC) and Sustainability Accounting Standards Board (SASB).
[192] CDP, CDSB, GRI, IIRC and SASB - Facilitated by the Impact Management Project, World Economic Forum and Deloitte, Statement of Intent to Work Together Towards Comprehensive Corporate Reporting, September 2020.

Creating performance monitoring mechanisms for ESG disclosure communications

FMIs could also offer performance monitoring mechanisms for disclosure communications within their distribution and corporate actions processing functions. These mechanisms should measure the frequency and quality of an issuer's disclosure reporting and the overall engagement between issuers and end-investors. This could be provided through a dashboard which issuers, asset servicers, asset or fund managers and end-investors can each access.

For example, within this disclosure performance dashboard FMIs can:

- leverage behavioural nudges to encourage more frequent and punctual ESG disclosure reporting and to remind issuers of reporting deadlines
- present surveys at each interaction to support issuers to gauge end-investor ESG metric preferences; and
- monitor the extent of issuer-investor engagement relative to comparable securities in the market.

This disclosure performance dashboard will allow cross-border FMIs to optimise issuer-investor engagement at all touch points along the security lifecycle. In doing so, FMIs can facilitate greater understanding amongst issuers of investor needs so that they can meet investor demand for specific ESG metrics or sustainable securities. They also can facilitate greater investor understanding of the ESG credentials and performance of the sustainable securities and issuers in which they invest.

Creating centralised ESG data files

FMIs can also create centralised ESG data files, which are transmitted with each security transaction. For example, every time a dividend payment is made, investors should be able to automatically access the latest ESG data, including second-party opinions and impact reports, to assess how their asset is performing on sustainability objectives. For accessibility, the data may be presented with visual aids and dashboards. Building on this ESG disclosure file at a transactional level will ensure the continuity and visibility of the data across all parties. Trade associations have recognised the need for translation of disclosure reports into a common language, so that "unstructured reporting and disclosures [can be transformed] to structured decision-relevant data".[193] The medium for translation might be a depositary receipt, cloud technology or a DLT token (see **Box C** below). Every time a security's ESG disclosure file is updated, the information can then be systematically transferred to a central, private-sector run platform and translated to a common format to aid comparison. This platform could ultimately be accessible to the public to enable ESG performance tracking alongside the tracking of financial returns.

> "Every time a security's ESG disclosure file is updated, the information can then be systematically transferred to a central, private-sector run platform and translated to a common format to aid comparison."

[193] GFMA, Climate Finance Markets and the Real Economy, December 2020.

Box C: Tokenise proof of impact data

Once there is sufficient data harmonisation, proof-of-impact data tokens can be explored. Tokenisation involves using blockchain technology to create a digital representation of an asset or utility.[194] For proof of impact reporting, the impact data of a sustainable security, such as school places created, tonnes of CO_2 removed or trees planted, can be represented as an impact token. This impact token is registered on a blockchain and is able to provide investors with rapid access to impact data. Creating impact tokens could be one way to integrate proof of impact reporting into asset servicing. FMIs could create a blockchain system where issuers of sustainable securities and their investors are invited to be nodes. The FMI role will be to fulfill the notary function and be responsible for the creation and registering of the tokens.

Tokenising proof of impact could lead to many benefits:

- **Easier and faster access to data:** Investors can access post-issuance reporting on impact as soon as the data is available on the ledger. The UNDP's CedarCoin initiative aims to reforest Lebanon's cedar tree forests. It uses impact tokens to immediately send investors a GPS-located photo as soon as a tree is planted.[195] This could simplify the "cumbersome" process for finding post-issuance reports.[196]
- **Automated data collection and real-time impact data:** In some cases, connecting measurement sensors to the data tokens allows for data collection to be automated and the updating of proof of impact data to occur in real time.[197] Automated reporting is particularly viable for clean energy projects, where Megawatt-Hours of clean energy produced can be measured directly. This provides investors with more frequent and accurate impact data, showing them how their security performs over time.
- **More accurate attribution of impact:** Through the use of impact tokens, the impact of an investment can be tracked through supply chains, providing a more accurate view of the total impact of investments.[198] FishCoin uses blockchain technology and a peer-to-peer network to allow all parties on seafood supply chains, including consumers and governments, to track their fish all the way back to the sea.[199]
- **Immutability improves trust:** Registering impact data on a blockchain ledger creates a transparent, secure record of the impact performance of a sustainable asset. This helps to prevent greenwashing and promotes accountability in issuers of sustainable securities, thus increasing investors' trust in these assets.

The ability to transfer rules-based information within FMI systems already exists in the market, which suggests that incorporation of ESG disclosure data files might be a relatively seamless addition to the market. For example, Euroclear's EMX Message System[200] for automatic fund management and Clearstream's OneClearstream[201] asset servicing portal could both be built upon to include this simplified reporting function.

[194] IISD, Impact Tokens: A blockchain-based solution for impact investing, April 2019.
[195] UNDP, Adopting a cedar tree brings diaspora money home, 7 February 2019.
[196] CBI, Post-issuance reporting in the green bond market, 2019.
[197] HSBC, Blockchain. Gateway for Sustainability Linked Bonds, 24 September 2019.
[198] World Economic Forum, 5 ways blockchain can transform the world of impact investing, 20 September 2018.
[199] IISD, Impact Tokens: A blockchain-based solution for impact investing, April 2019.
[200] Euroclear, Automate your order routing in the EMX Message System, 2015.
[201] Clearstream, OneClearstream, August 2017.

Processing ESG assurance

Sustainability assurance is a defining feature of the sustainable finance market. A key step in the issuance process for most fixed-income, project-based sustainable finance securities is some form of independent assurance to verify the associated frameworks and impact of that security. In contrast to traditional finance, this step was introduced in the sustainable finance market to provide greater credibility to the impact element of these securities and defuse accusations of greenwashing in the market. This important benefit of sustainability assurance is a key reason why external reviews have seen such high uptake in the market: Researchers have found that second-party opinions "were obtained in greater than 85% of green, social or sustainability bonds by number of issuances in 2019" and that "in Europe, over 98% of green bonds receive some external review".[202,203]

However, there is currently fragmentation in the market with regards to who provides sustainability assurance. For example, there are second-party opinion (SPO) providers, certifiers, third-party assurance providers, independent verifiers, credit ratings agencies and ESG score rating providers. To an issuer, these may all sound roughly the same. However, in practice, each provider delivers a distinct service, as shown in **Table 4.1** below.

Table 4.1: Summary of sustainability assurance providers

Assurance type	Scope	Expertise	Example providers[204]
Second-party opinion / consultant review	**Pre-issuance** Evaluates the credibility of sustainable issuance frameworks specific to the security (e.g. project allocation, use of proceeds) Provides a sustainability rating for the issuer	Scientific expert ESG specialist	Sustainalytics, Vigeo Eiris, Oekom, Cicero
Certification	**Pre-issuance** Attests to security alignment of issuance frameworks or use of proceeds against recognised sustainability standard or label	Certified approver, often sector experts, technical inspectors or certification bodies	Bureau Veritas, Carbon Trust, SCOPE
Third-party assurance / independent verification	**Pre-issuance** Assures alignment of security to a recognised sustainability standard or label **Post-issuance** Confirms allocation of funds, tracking method, use of proceeds or statement of impact for specific security	Accounting Auditor	PwC, Build America Mutual GreenStar, Deloitte, KPMG, EY
Credit rating	**Pre-issuance** Evaluates credit of issuer of security and may incorporate ESG considerations in methodology **Post-issuance** Reviews issuer credit, typically quarterly	Credit rating agency	S&P Global, Fitch Ratings, Moody's
ESG score	**Pre-issuance** Evaluates extent of security alignment to recognised sustainability standard or label **Post-issuance** Reviews issuer performance on specific ESG metric, sustainability process or other benchmark (e.g. 2-degree climate change scenario)	ESG data provider / research firm	Bloomberg, Refinitiv

Sources: Climate Bonds Initiative,[2005] ASEAN Green Bond Standards 2018,[2006] EU Technical Expert Group on Sustainable Finance,[2007] German Development Institute[2008]

[202] Bloomberg Law, Green Bond Second Party Opinions: Legal and Practice Considerations, April 2020.
[203] Loomis Sayles, Beyond the Label: An Assessment of the Green Bond Market, March 2020.
[204] Non-exhaustive
[205] Climate Bonds Initiative, External Review.
[206] ACMF, ASEAN Green Bond Standards, October 2018.
[207] EU Technical Expert Group on Sustainable Finance, Report on EU Green Bond Standard, June 2019.
[208] German Development Institute, Upscaling Green Bond Markets: The Need for Harmonised Green Bond Standards, December 2017.

The different degrees of assurance scope and variety of assurance providers causes information overload in the sustainable finance market, particularly for new or small issuers. Additionally, as the market grows, more and more steps in the pre- and post-issuance processes have become subject to sustainability assurance. The market also suffers from a poor comparability of assurance reports.

However, many of these challenges can be addressed through a cross-border FMI platform for the procurement of credible sustainability assurance, which:

1. recommends a clear criteria for robust sustainability assurance processes; and
2. provides open access records to assurer credentials and assurance reports.

Recommending clear criteria for robust sustainability assurance processes

The challenge around poor comparability of assurance reports stems from the different scopes and methodologies available to assurance providers.

In traditional finance, there exists different degrees of assurance – such as negative, positive and quality assurance. In sustainable finance, these remits become even more muddied because of the additional considerations around:

- the security attributes and source documentation requiring assurance
- the level of aggregation of assurance reports for complex products, such as funds and securitised loan portfolios, to enable findings to be passed onto investors
- the factual accuracy of scenario planning, e.g. for perpetual sustainable finance securities or changing fund mixes; and
- ongoing assurance requirements over the security lifecycle, including impact reporting.

Cross-border FMIs can recommend clear criteria for robust sustainability assurance, helping to drive market alignment on this issue. This set of recommendations might include, for example, clear definitions of scope for assurance support at each step in the issuance process across the range of sustainable finance securities, or a breakdown of how any materiality assessment maps to different ESG scores. It might also include regional or sectoral benchmarks against which providers can audit a sustainable finance security. This will enable comparability of assurance reports against a set baseline and will help to ensure that no two securities following the same standard could receive different qualities of assurance. To ensure that this criteria is adhered to, FMIs can make it an entry requirement for an assurance provider to engage on the platform.

Providing open access records to assurer credentials

Cross-border FMIs can also facilitate equal and accessible visibility of the credentials of sustainability assurance providers through their open architecture platforms. Having this data in one place will enable issuers to sort by specific asset class, ESG thematic or regional expertise when procuring assurance support. To be inclusive to smaller assurance providers, the platform could ensure that all assurance providers – regardless of size – are included so long as they have appropriate accreditation, as is required by the Climate Bonds Initiative and EU for assurance providers. Together, the best practice reference material, open access record of assurance provider credentials and assurance provider accreditation create an environment to maintain a high standard of sustainability assurance.

Improved visibility of assurance provider credentials facilitates greater transparency in competitive tendering processes for issuer procurement of credible sustainability assurance. Issuers can use this platform to understand which assurance providers follow best practice, have strong credentials and are highly rated by investors. Leveraging transparency will support good assurance practices and competitive price points for sustainability assurance reviews.

The open access feature of this enabler is a critical step to improving transparency. This can only be successfully delivered by a neutral market participant. The wide-reaching data infrastructure capability of cross-border FMIs will ensure equal issuer access to sustainability assurance and investor visibility of assurance reports, so that benefits are shared across regions.[209]

4.4 FMIs expand the reach of the sustainable finance market

While market participants are becoming increasingly interested in sustainable finance, the demonstrated supply and demand of the sustainable finance market is simply not enough. Sustainable finance strategies are becoming more popular amongst investors but still comprise only a fraction of the overall market. As set out in **Chapter 2,** strong primary market demand is undermined by a weaker secondary market demand for green securities. Additionally, demand for green securities is concentrated towards established issuers, major currencies, dedicated platforms and developed markets. Similarly, the supply of sustainable assets is growing but makes up only a small proportion of market share. This has knock-on effects on demand: an unclear sustainable investment pipeline can make it difficult for investors to incorporate sustainability into their investment strategy.

With the support of domestic FMIs, cross-border FMIs can support the market to channel greater sustainable finance flows by expanding the sustainable finance market to new asset classes and market participants. Having reduced key barriers to sustainable finance issuance and improved the processing of ESG metrics, disclosure and assurance, FMIs can then use their central and neutral positioning within the financial ecosystem to 'crowd-in' more participants on both the issuer and investor sides, and widen the scope of sustainable finance to new asset classes. Implemented over the longer term once the market is more mature, this can ultimately support a connected sustainable financial system, rather than a subset of the market that is sustainable.

Expanding the sustainable finance market to new participants

Increasing sustainable issue distribution infrastructure

Both cross-border and domestic FMIs can support new sustainable finance issue distribution infrastructure where countries lack these capabilities. FMIs can use their experience and technical capabilities to help make the necessary improvements directly, or provide an advisory role, guiding the country's market authority through the expansion of its capital market infrastructure. While not an exhaustive list,[210] some common critical gaps in infrastructure that limit all financial market activity include: the absence of a domestic CSD; limited ability to trade securities in the secondary market; or the inability to issue bonds internationally in domestic or foreign currencies.

Cross-border FMIs, together with domestic FMIs, can support emerging and frontier markets to access international capital markets by establishing CSD capabilities and creating links between domestic CSDs and ICSDs. Access to international capital markets is pivotal to raising capital, particularly for markets with small pools of domestic investors. In the absence of a domestic CSD, FMIs can support countries to create, acquire or build one. In smaller markets, where establishing a domestic CSD is too costly, cross-border FMIs can support these markets to establish regional CSDs or interoperability between CSDs. Regardless of the form, CSD capability allows for reduced transaction costs, reduced risk for security holders and easier access to additional services. Without CSD capability, the local market is largely excluded from international capital markets. It is therefore an essential step to scaling sustainable finance to new markets, thereby engaging new issuers and investors.

[209] Environmental Finance, Sustainable Bonds Insights 2020, 2020.
[210] Other potential infrastructure gaps include efficient messaging systems for data transfer and communication between issuers and investors, the ability to conduct settlement on a delivery-versus-payment basis, and digitised trading processes on stock exchanges.

Cross-border FMIs can create a platform for domestic secondary market trading to improve liquidity. Limited ability to trade securities in the secondary markets generally leads to poor liquidity. Improving domestic, secondary market liquidity for securities can help establish a yield curve for issuers. This can make it easier for them to issue further securities into the domestic market based on an established pricing benchmark. This is particularly important for scaling sustainable finance – with greater liquidity, the risk-return profile of sustainable securities will become clearer. The expansion of secondary markets for specific securities can be supported through the use of market infrastructure technology and local platforms. Bloomberg and Euroclear implemented such a solution in the UAE to launch a new type of asset denominated in UAE Dirham, M-Bills. This is expected to increase trading volumes as well as helping to reduce the volatility of borrowing costs and stabilising yields in money and capital markets.[211]

Cross-border FMIs can also support issuance in domestic or foreign currencies. To foster a truly global sustainable finance market, participating countries first need the ability to issue internationally in domestic or foreign currencies. In 2019, 84% of the green bond market was denominated in euros, US dollars or yuan.[212] Investor preference is for issuance in 'strong' currencies to avoid currency risk. If a country has a particularly volatile or illiquid currency, having the ability to issue in currencies like the euro will attract international investment. Alternatively, enabling issuance internationally in local currencies can improve the issue's liquidity and reduce the currency risk for the issuer, where there are investors who seek currency exposure within their investment portfolios. By establishing links between domestic CSDs and ICSDs, cross-border FMIs enable international issuance in domestic or foreign currencies. This flexibility in issuance options will serve to support greater new sustainable finance distribution in emerging and frontier markets, as cross-border demand for sustainable finance increases.

Creating a cross-border FMI database of ESG-screened public sector financial support to crowd-in transitioning issuers

The COVID-19 crisis has amplified sustainability-focused public sector flows. It has highlighted the need for resilient and sustainable growth strategies and the public sector has responded by integrating ESG criteria into their screening processes. For example, World Bank Group member, the Multilateral Investment Guarantee Agency's (MIGA) US$235 million guarantee for COVID-19 liquidity support to FirstRand is conditional on MIGA's stringent ESG standards.[213] Similarly, 37% of the EU's €750 billion Recovery and Resilience Fund is earmarked for investment which meets certain green conditions, including a 'do no harm' principle.[214] However, state financial support is designed to be repaid as soon as possible to avoid moral hazard concerns of government involvement in the private sector. Expectations of repayment of state aid in the short term can be at odds with recovery strategies which require long-term financing. This is an acute concern for sectors which face long transitions in making their operations more sustainable. While blended public and private finance arrangements have offered some relief to this challenge, the market lacks a transition mechanism for ESG-oriented recovery finance to be maintained over the long term without unnecessarily prolonging government involvement in the private sector.

[211] Euroclear, "The Central Bank of the UAE to launch Monetary Bills in collaboration with Euroclear and Bloomberg", 21 December 2020.
[212] Environmental Finance, Sustainable Bonds Insight 2020, 2020.
[213] MIGA, "Responding to COVID-19 Impact in Seven African Economies, FirstRand Receives US$235m Guarantee from MIGA to Unlock Liquidity", 10 August 2020.
[214] Vivid Economics, Greenness of Stimulus Index, February 2021.

Cross-border FMIs can support a mechanism to transition ESG-screened investments by public financial support bodies into international capital markets. Cross-border FMIs can leverage their relationships with policymakers and development banks to create a database of ESG-screened state financial support, which contains key information such as the borrower, the form of support, the extent of ESG screening (e.g. due diligence against different taxonomies or standards) and the expected wind down date of the public financial support. Cross-border FMIs, such as ICSDs and security exchanges, can extend this database to interfaces on exchange platforms to publicise these sustainable investment opportunities to private sector investors. In this way, FMIs can help to preserve the ESG due diligence done by the public sector and provide greater visibility to the market over the supply of sustainable investment opportunities. Collating a growing menu of investable opportunities for ESG-minded investors in the private sector can then be used to create new asset classes. In turn, this can generate "positive snowball effects", including greater recognition, market depth and liquidity.[215]

Cross-border FMIs can leverage their links in both the public and private sectors to collect information on potential blended finance arrangements. Where ESG screening by the public sector may be limited, and therefore the risk of greenwashing may be greater, cross-border FMIs can collect additional information to share with multilateral development banks, real estate investment trusts, private equity funds and other interested participants so that the investment opportunities may be considered as candidates for blended financing between the public and private sectors. While "the market for blended finance – approximately $150 billion of capital committed in developing countries in 2018 – is still small compared with overall capital flows," these arrangements are known for their catalytic nature because of their potential to overcome risk pricing challenges and mobilise private sector investment.[216] Indeed, there is plenty of capital to be invested in sustainable finance by the private sector, with "private sector financial assets [estimated to be] roughly 900 times the size of private impact investing and the investments of the [multilateral development banks] and [development financing institutions] in investable assets."[217] Partnering with development institutions with expertise in blended finance, such as the UK's Foreign & Commonwealth Development Office's MOBILIST[218] programme, could provide smoother transitions of state financial support to secondary markets.

In supporting the continuous provision of sustainable capital to issuers, cross-border FMIs can cater to transitioning issuers who require patient capital. Because most state support is designed to be temporary, support given during times of crisis may not be sufficient for businesses to truly transform their practices to be more sustainable. The COVID-19 crisis is a current example of the conflicting dynamic between the provision of short-term state financial support and the need to fund long-term structural changes. This enabler would provide a safeguard for businesses to maximise the public sector financial support they receive to fund some of the sustainable transitions necessary for the long-term resilience of their business, knowing that there is a mechanism in place to shift this support to secondary markets within the private sector, as public sector support winds down. Even for development finance support, which may be designed to be buy-and-hold, this enabler still provides the potential for transition to private investors (and potential recycling of public financial support).

[215] E Liaw, K.T. (2020). 'Survey of Green Bond Pricing and Investment Performance', Journal of Risk and Financial Management, Vol. 13, Issue 193.
[216] Global Financial Markets Association and Boston Consulting Group, Climate Finance Markets and the Real Economy, December 2020.
[217] World Bank Group, 'The Landscape for Institutional Investing in 2018: Perspectives of Institutional Investors, An Input Into the Investor Forum', October 2018, p. 13.
[218] MOBILIST stands for Mobilising Institutional Capital Through Listed Product Structures.

Expanding the sustainable finance market to new asset classes and participants

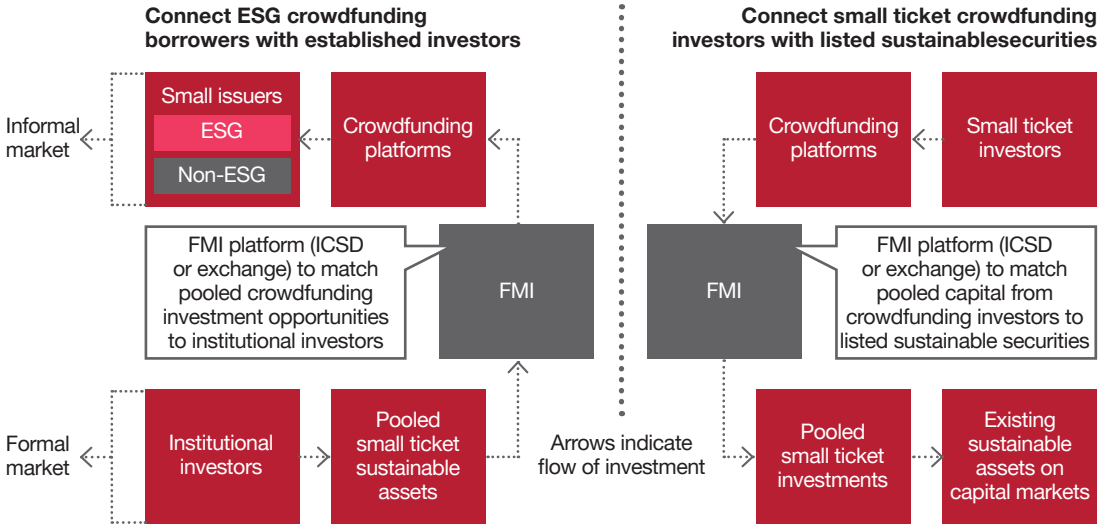
There is an opportunity to connect the informal and formal sustainable finance markets to expand the sustainable finance market to new asset classes and participants. There have been increasing sustainable financial flows within the crowdfunding space and investors are looking for new ways to diversify investments across asset classes, with 57% of private equity firms considering diversification through impact investing.[219] Despite the mutual interest in sustainable finance, sustainability-focused crowdfunding platforms and capital markets have thus far been disconnected from each other. Sustainable crowdfunding borrowers and investors typically do not have access to capital markets and are therefore limited in their ability to borrow or invest in large ticket sizes. Similarly, without a link to sustainability-focused crowdfunding platforms, capital markets forgo a diversified pool of sustainable investment opportunities and investors with a strong ESG mandate.

FMIs, such as security exchanges, can provide the missing link between crowdfunding platforms and capital markets. In bringing together new sustainable investment opportunities and sources of capital, FMIs can facilitate the creation of new sustainable asset classes.

This FMI link could run in two directions, set out below and illustrated in Figure 4.2:

1. **Connect ESG crowdfunding borrowers with established investors:** FMIs can facilitate the trading and settlement of pooled, sustainable crowdfunding investments on exchanges, providing crowdfunding platforms with access to significant capital by established investors (such as institutional investors) and established investors with access to the supply of sustainable investment opportunities within the crowdfunding market.
2. **Connect small ticket crowdfunding investors with listed sustainable securities:** FMIs can facilitate greater investment in sustainable securities, providing small-ticket crowdfunding investors the opportunity to invest in more established asset classes, and issuers listed on the capital markets access to new sources of capital.

Figure 4.2: Implementation options for FMI link between crowdfunding platforms and capital markets



[219] Mergermarket, 2021 Global Private Equity Network | Acuris, 2020.

Linking (informal) crowdfunding platforms to (formal) capital markets

FMIs can facilitate the trading and settlement of pooled, sustainable crowdfunding investments on exchanges. While institutional investors, for example, typically require ticket sizes much larger than those held on crowdfunding platforms, security exchanges could work together with crowdfunding platforms and investment banks to produce a new asset class composed of pooled, sustainable crowdfunding investment opportunities which can be traded and settled on exchanges and CSDs. Input from regulators could also be helpful to ensure a certain level of accounting standards and financial protection. Similarly, ESG scoring or sustainability assurance should be conducted on the underlying projects (or at least the aggregate pool). Pooling sustainable crowdfunding investments by region, sector or impact thematic could maximise investor demand and allow them to tailor their investments more precisely to the impact areas they are interested in.

These funds could then be bought on the primary market or traded on the secondary market, as either pooled crowdfunding loans or pooled crowdfunding equity:

- **Pooled crowdfunded loans:** Investors may receive either a steady flow of repayments and interest through amortisation, or the principal plus interest after an agreed period. Investors would be funding many small borrowers at the same time,[220] rather than buying an asset-backed security of many smaller, existing loans. FMIs can provide the infrastructure to list this initial pooled asset to investors and allow for the trading of that asset on the secondary market.
- **Pooled crowdfunding equity:** Investors would purchase shares in many small companies at once, typically SMEs or businesses at an early stage of development.[221] This might be initially offered to private equity or venture capital firms directly but could be traded on the secondary market through FMIs.

By pooling many small-ticket sustainable investment opportunities, FMIs can enable large, established issuers to diversify their portfolios. Specifically, established issuers will have the opportunity to invest in SMEs, start-ups or micro-enterprises from both developed, emerging and frontier markets. Pooling the smaller investments should also reduce the risk compared to investing in one specific project or business. This provides established investors access to a new sustainable asset class through which they can have a large aggregate environmental and social impact.

This also benefits crowdfunded borrowers (individuals and small businesses) with access to much greater sources of capital. As SMEs and micro-enterprises have traditionally been excluded from more traditional sources of capital market finance, this could have significant impact on their ability to raise capital and grow their businesses sustainably. Additionally, it can serve to 'crowd in' participants from emerging and frontier markets where crowdfunding is a primary source of financing. The Asian Development Bank estimates that "global pools of institutional funds, including pension and insurance funds [may be] worth between $45 trillion and $60 trillion".[222] Therefore, access to capital markets could be pivotal for crowdfunded borrowers.

[220] For example, borrowers through the crowdfunding platform Kiva.
[221] For example, borrowers through the crowdfunding platform SeedInvest.
[222] Asian Development Bank, 'Green, Sustainability, and Social Bonds for COVID-19 Recovery: A Thematic Bonds Primer', February 2021.

Linking (formal) capital markets to (informal) crowdfunding platforms

To broaden and diversify the investor pool for sustainable securities, FMIs can link capital markets to crowdfunding platforms, where investment by small-ticket investors can be pooled. For example, security exchanges and ICSDs can work together with domestic and international CSDs (depending on the size and structure of the issue) to publicise listed securities on crowdfunding platforms, with the 'total capital raised' and 'total capital needed' in order for small-ticket investors to purchase the asset. Once the 'total capital needed' is successfully pooled amongst crowdfunding investors, the crowdfunding platform could use the funds raised from the different investors to purchase the asset (perhaps with the help of an investment bank or a broker) through the FMI's system.

Each crowdfunding investor would then have fractional ownership of the asset proportional to the amount they invested. This link would allow retail investors with smaller disposable income to engage in capital markets. It would also allow sustainable finance issuers access to a growing share of investors with a strong ESG mandate. See the right of **Figure 4.2** for an illustration.

By pooling small-ticket capital from crowdfunding investors, FMIs can provide capital market access to investors who are currently excluded from this space. For example, people with a lower disposable income seeking to invest in smaller amounts will be able to access capital markets through this FMI link and build wealth through fractional ownership.

This would also benefit sustainable finance issuers who already have access to capital markets by unlocking new sources of capital. Given crowdfunding platforms are not currently linked to capital markets, it is likely that the majority of crowdfunding investors also lack access to capital markets. Therefore, this link would facilitate injections of new capital, rather than shift capital from one sustainable investment to another. With the "biggest-ever generational transfer of wealth – likely to be around US$30 trillion – from baby boomers to millennials [taking] place in the next few years," there is a real opportunity to increase sustainable finance flows through crowdfunding investors with strong ESG mandates.[223]

"By pooling small-ticket capital from crowdfunding investors, FMIs can provide capital market access to investors who are currently excluded from this space."

[223] Scott, M. at Reuters, 'From 'E' to 'S' and 'G' as responsible investors take stock post-pandemic', 2 May 2020.

4.6 Benefits of a cross-border FMI-driven approach

There are a number of benefits to each of the proposed cross-border FMI market-scaling opportunities described in this chapter.

While not an exhaustive list, the key benefits include:

- Reduced costs of issuance
- Efficiency in investor due diligence
- Greater trust through enhanced transparency
- Equal access to the sustainable finance market and insights; and
- Convergence of sustainable finance market with mainstream finance.

While there is an ongoing debate on whether sustainable finance can lead to financing cost efficiencies, several of the cross-border FMI enablers described above have definite potential to lead to reduced costs for issuers. These reduced costs may be realised through reduced administrative burden or liquidity benefits. For example, harmonised issuance guidance could potentially bring down costs incurred by issuers if fulfilment of certain steps – such as comprehensive documentation – can substitute site visits by ESG score providers which can be both cost- and time-intensive. Likewise, a platform which facilitates credible and robust sustainability assurance standards could allow issuers to save on other costs of issuance, such as credit analysis. Zu, Wu & Zhang (2020) found in their study on the Chinese green bond market, that for issuers of high credit quality, third-party assurance "can assume the job of credit underwriting of corporate green bonds, fundamentally diminishing the issuance cost of corporate green bonds".[224] Where FMIs can support greater liquidity of sustainable finance – such as through increasing critical market infrastructure in underdeveloped markets – secondary market trading of sustainable securities will increase, supporting price discovery and reinforcing a lower cost of borrowing in primary issues.

Efficiency in investor due diligence is another key benefit of a cross-border FMI-driven approach. Harmonised issuance guidance, tagging the universe of sustainable finance securities, an embedded ESG disclosure function of asset servicing and a transition mechanism for ESG-screened state financial support to international capital markets all lead to due diligence efficiencies for investors. In addition to supporting established investors to better process non-financial performance data, cross-border FMIs are also able to support smaller investors (i.e. retail investors) who otherwise have low technical capacity to conduct thorough due diligence. With greater efficiency in ESG due diligence, cross-border FMIs can spur greater active investing and reduce some of the negative impacts of passive investing, such as mismatches between issuer and investor ESG expectations.

Cross-border FMIs can help to build greater trust in the sustainable finance market through enhanced transparency. Their advanced data processing capabilities and central position in the financial ecosystem means that cross-border FMIs are well placed to ensure that information flows to the appropriate market participants and that there is a high level of transparency upheld throughout the security lifecycle. For example, by publishing standardised contract templates for common sustainable securities, cross-border FMIs support issuers and investors to establish fair contract terms and conditions for a transparent finance agreement from the start. Similarly, by publishing standardised ESG disclosure templates and hosting a central database for digitised ESG disclosure data on each security, cross-border FMIs support the continuous and consistent record trail of the ESG data on a sustainable security or issuer.

[224] Xu, Wu and Zhang (2020), 'Is Voluntary Third-party Certification Worth It for Corporate Green Bond Issue? –An Investigation of Chinese Green Bond Market', World Academics Journal of Management, Vol. 8, Issue 3, pp. 24-29, September 2020. Doi: 10.6084/m9.figshare.12866018.v1.

Cross-border FMIs can also support equal access to the sustainable finance market by leveraging their global reach and open architecture capabilities. Cross-border FMIs, such as ICSDs, have an important presence in countries which are currently underrepresented in the sustainable finance market. Cross-border FMIs also have open architecture capabilities, which allow for full coverage across asset classes and inclusion of issuers and investors from different regions. This is a novel benefit to emerging and frontier markets which have been historically disadvantaged by investor preference for established issuers, major currencies, dedicated platforms and developed markets. Together, the cross-border reach of FMIs with open architecture capabilities can lead to value creating data within the sustainable finance market, over and above what many of the membership models used in the sustainable finance market provide today.

Finally, a cross-border FMI-driven approach to scaling sustainable finance can support the convergence of sustainable finance with mainstream finance. The FMI enablers described in this chapter offer a number of knock-on benefits for traditional finance, in addition to sustainable finance. For example, addressing market infrastructure gaps in emerging and frontier economies will support greater capital market activity overall, by facilitating access to a wider investor pool and improving liquidity. Similarly, an embedded ESG disclosure function of asset servicing will benefit investors with or without ESG mandates, as other non-financial performance metrics become better integrated into financial systems. Ultimately, a cross-border FMI-driven approach to scaling sustainable finance can support a financial system which is sustainable going forward.

4.7 Implementation considerations

The impact potential is greatest if a cross-border FMI-driven approach is implemented holistically. This paper does not prescribe a cross-border FMI-driven approach, but rather suggests a number of practical ways in which cross-border FMIs, supported by domestic FMIs, can make a positive difference to the sustainable finance market. However, while many of the enablers proposed can be implemented on their own, there is greater impact potential when implemented as a package. For example, providing information on a globally-relevant set of ESG metrics in an issuance guidance tool can lay the groundwork for issuer disclosure on that set of metrics to be effectively embedded within asset servicing.

The regulatory sandbox or 'test and learn' approaches can be used to refine FMI interventions before rolling out globally. A cross-border FMI-driven approach will not only require collaboration between market participants but also governments and regulators. The regulatory sandbox approach has been used frequently in fintech across the US, Singapore, India, Kenya, Mexico and Sierra Leone and would allow for exemptive relief on some requirements of securities laws for a trial period.[225] The test and learn approach has been credited with the success of Safaricom's introduction of M-Pesa mobile money services to the Kenyan market from 2007, and involves regulators issuing preliminary standards for the market and then clarifying and tailoring those standards with market participants over time and as the market develops.[226] Both the regulatory sandbox and test and learn approaches have been recognised as central to open dialogue between regulators and market participants and important contributors to more inclusive financial markets.[227]

> "Together, the cross-border reach of FMIs with open architecture capabilities can lead to value creating data within the sustainable finance market, over and above what many of the membership models used in the sustainable finance market provide today."

[225] BFA, Going beyond regulatory sandboxes to enable FinTech innovation in emerging markets, 2017.
[226] Njuguna Ndung'u, PRACTITIONER'S INSIGHT M-Pesa – a success story of digital financial inclusion, 2017.
[227] BFA, Going beyond regulatory sandboxes to enable FinTech innovation in emerging markets, 2017.

Collaboration across the financial ecosystem is critical. The central and far-reaching position of cross-border FMIs can facilitate high adoption of these market enablers. However, to avoid duplicating efforts, collaboration across the financial market ecosystem is necessary to create interlinkages to facilitate a truly global sustainable finance market.

4.8 Conclusion

A cross-border FMI-driven approach takes a broad yet pragmatic view of the sustainable finance market to address the fundamental challenges which hinder the market's continued growth on its own. Given their presence across the financial market value chain and their data infrastructure and relationship holding capabilities, FMIs have three distinct opportunities to scale sustainable finance at each stage of the market's maturity. These include reducing barriers to issuance, improving the processing of information flows between market participants and expanding the reach of sustainable finance to more asset classes and participants. The impact potential of a cross-border FMI-driven approach is discussed further in **Chapter 5.**

To avoid duplicating efforts, collaboration across the financial market ecosystem is necessary to create interlinkages to facilitate a truly global sustainable finance market."

CHAPTER 5: POTENTIAL IMPACTS OF A CROSS-BORDER FMI-DRIVEN APPROACH

> A cross-border FMI-driven approach can help to balance progress on sustainability globally. This is of particular importance to emerging and frontier markets where there is great opportunity but little coverage of the sustainable finance market."

Summary

- A cross-border FMI-driven approach can deliver positive economic and societal outcomes, distinct from previously tried approaches. The package of market scaling opportunities proposed in this study can lead to an increased supply and demand for sustainable securities. This results in greater flows within the global sustainable finance market.
- While the sustainable finance market has experienced impressive growth in recent years without a cross-border FMI-driven approach, underpinning these additional flows are two arguably more important outcomes: improved efficiency of issuance processes and ESG disclosure, and enhanced comparability of sustainable securities to aid investor due diligence. These less tangible outcomes have not yet been realised through other market scaling approaches but are essential to creating a bedrock of trust in the sustainable finance market.
- Greater sustainable finance flows mobilised by a cross-border FMI-driven approach leads to significant economic impact. A cross-border FMI-driven approach has the potential to uplift the growth to the sustainable finance market by up to 2.5% annually, which is additional to the projected 13% cumulative average growth rate of the market. This results in the mobilisation of roughly US$25 trillion additional capital by 2030, with the majority of this additional capital channeled to emerging and frontier markets.
- A cross-border FMI-driven approach can help to balance progress on sustainability globally. This is of particular importance to emerging and frontier markets where there is great opportunity but little coverage of the sustainable finance market. The US$25 trillion additional capital mobilised by a cross-border FMI-driven approach could translate to savings of up to 0.6 to 1.1 years (or 7 to 13 months) in direct financing of the achievement of the United Nations' Sustainable Development Goals by 2030.

> A cross-border FMI-driven approach has the potential to uplift the growth to the sustainable finance market by up to 2.5% annually, which is additional to the projected 13% cumulative average growth rate of the market."

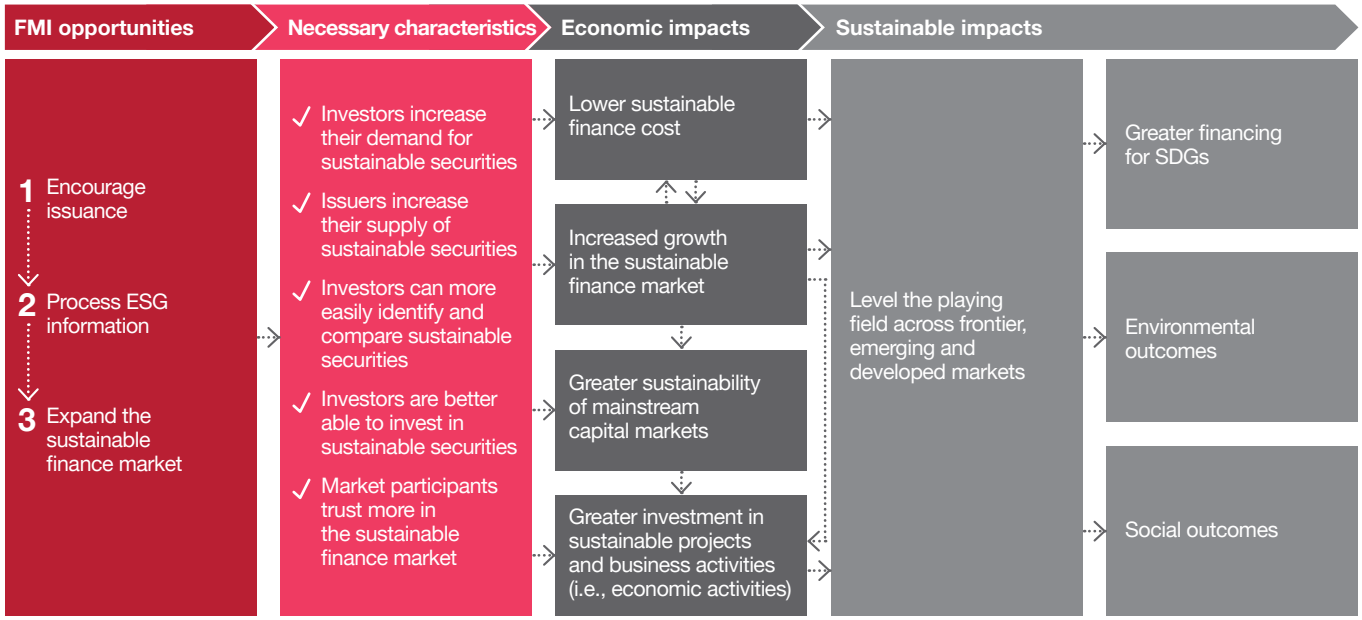
5.1 Introduction

A cross-border FMI-driven approach can deliver positive economic and societal outcomes, distinct from previously tried approaches. The package of market scaling enablers proposed in **Chapter 4** can lead to an increased supply and demand for sustainable assets. This results in greater flows within the global sustainable finance market. While the sustainable finance market has experienced impressive growth in recent years without a cross-border FMI-driven approach, underpinning these additional flows are two arguably more important outcomes: improved efficiency of issuance processes and ESG disclosure, and enhanced comparability of sustainable securities to aid investor due diligence. These less tangible outcomes have not yet been realised through other market scaling approaches but are essential to creating trust in the sustainable finance market.

To further demonstrate the value of a cross-border FMI-driven approach, this chapter provides a quantitative assessment of the potential economic and sustainability impacts in scaling the sustainable finance market. This chapter sets out the potential impact of a cross-border FMI-driven approach through a number of economic indicators, including issuers' cost of financing and market growth. It also contextualises the impact through a number of sustainability indicators, including time saved in reaching the UN's Sustainable Development Goals (SDGs), CO_2 emissions equivalent savings and the number of children afforded primary school education in emerging and frontier economies. These indicators were selected to illustrate the scale of potential impact that a cross-border FMI-driven approach can have on financing progress against common sustainability themes, although we note that the actual impact will depend on where the financing is ultimately directed. The analysis presented in this chapter is based on best efforts to quantify and illustrate the potential scale and scope, and therefore should be interpreted as indicative.

The framework used to assess the impacts of a cross-border FMI-driven approach is illustrated in Figure 5.1 below. Evidence from the literature of the benefits of FMI capabilities in other markets and the latest forecasts for the sustainable finance market growth are used to estimate these impacts. Where judgement is applied, the assumptions made are clearly set out.

Figure 5.1: Framework for assessing the impacts of a cross-border FMI-driven approach



5.2 Economic impacts

Increased market growth and size

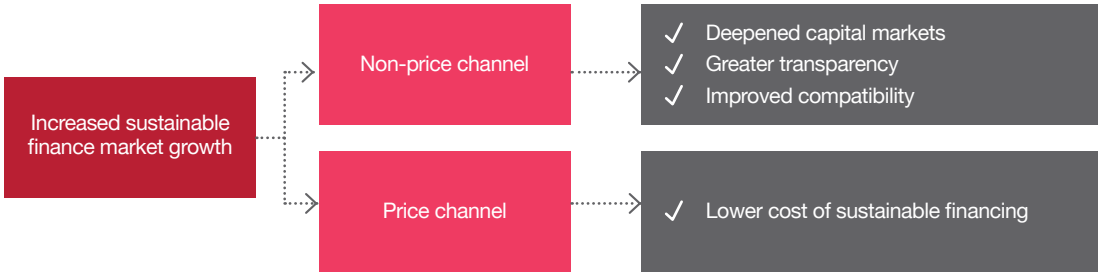
A key benefit of a cross-border FMI-driven approach is to uplift the current growth trajectory of the sustainable finance market. The efficiency and liquidity benefits of FMIs have been found to increase growth in other capital markets, such as the eurobond and global bond markets. Analysis by Bertocchi & D'ecclesia (2014) suggests that the 7% cumulative annual growth rate (CAGR) in the eurobond market from 2000 to 2012 was enabled by FMIs.[228]

There are two channels through which a cross-border FMI-driven approach can increase the growth of the sustainable finance market.

These are summarised in Figure 5.2 and set out in more detail below:

- **Non-price channel:** Cross-border FMIs can deepen capital markets in less developed economies leading to greater efficiency. They can also facilitate greater transparency through streamlined ESG disclosure and improved comparability of sustainable securities. These benefits have the effect of increasing both investor demand for sustainable finance and issuer supply of sustainable securities.
- **Price channel:** Cross-border FMIs can enable the realisation of a lower cost of capital for sustainable finance issuers through a reduced yield. This reinforces market growth as lower financing costs increase issuer demand for financing.

Figure 5.2: Channels for FMI uplift to the sustainable finance market growth



Market growth uplift from non-price channel

A cross-border FMI-driven approach can enable increased market growth through the non-price channel by deepening capital markets. The Bank for International Settlements finds that "developed and deep capital markets can play a key role in financing economic growth" and that financial market depth is facilitated by information aggregation, a capability that cross-border FMIs are recognised and valued for.[229] Research has also found that "deeper capital markets in emerging Asia could free approximately US$500 billion in the private sector and US$300 billion in the government sector every year," through access to wider issuer and investor bases and diversified financial instruments.[230]

[228] Bertocchi, M. and D'ecclesia, R.L. (2014). 'The Bond Market in Europe', Chapter 1 in Euro Bonds: Markets, Infrastructure And Trends, p. 4.
[229] Bank for International Settlements (2019). 'Establishing viable capital markets', Committee on Global Financial System (CGFS) Papers, No. 62, January 2019.
[230] McKinsey & Company, 'Deepening capital markets in emerging economies', April 2017, p. 5.

Cross-border FMIs can also enable increased market growth through improved transparency and comparability of securities within the sustainable finance market. Leveraging their unique visibility of – and access to – data which underpins global financial transactions, Cross-border FMIs can facilitate greater transparency of data flows through streamlined ESG disclosure, as well as improved comparability of sustainable securities. Studart and Gallagher (2015) proposes that a new "green financing architecture," which enables comparability against a sustainable growth path and improves capacity building for developing nations can 'crowd in' private capital to help fill the investment gaps.[231] These non-price benefits have the effect of increasing both investor demand for sustainable finance and issuer supply of sustainable assets.

A cross-border FMI-driven approach can uplift the annual sustainable finance market growth by up to 2.5% through the non-price channel. A 7% annual growth rate observed in the eurobond market has been attributed to FMI capabilities – namely the efficiency benefits of issuer access to international investors. Emerging and frontier economies are likely to experience a growth rate of this magnitude, given these economies tend to have the largest gaps in FMI capabilities and therefore may benefit more from growth investment than developed markets.[232] As the suggested FMI enablers in **Chapter 4** are focussed on facilitating sustainable finance in emerging and frontier markets, a significantly smaller market growth impact is assumed for developed markets, which already have better established market infrastructure and deep capital markets. However, given the FMI enablers will also inevitably benefit developed markets (e.g. robust sustainability assurance and streamlined ESG disclosure), developed economies are assumed to experience one seventh the impact relative to emerging and frontier economies. This proportion was calculated using financial depth and efficiency indicators from the World Bank's Global Financial Development Index.[233] Allocating these growth rates to the expected regional market shares of the sustainable finance market each year, up to a 2.5% global annual market growth uplift from the non-price benefits of a cross-border FMI-driven approach could be achieved.

Market growth uplift from price channel

Sustainable finance issuers have benefitted from a lower cost of capital.

While academics have debated the causal relationship between greater sustainability and financing costs, there exists a wide evidence base to suggest that borrowers who commit to sustainable practices can benefit from lower financing costs:[234]

- **In the case of equities, high ESG-scored companies have experienced lower costs of capital through lower betas in the capital asset pricing model.** A study by MSCI found that from December 2015 to November 2019, the MSCI World Index returned a 39 basis point (bp) reduction in the cost of capital for the highest ESG-scored quintile compared to the lowest ESG-scored quintile, with an even higher differential for the MSCI Emerging Markets Index.[235] Moreover, a comprehensive literature review done by Deutsche Bank in 2012 found unanimous agreement across each study that "companies with high ratings for CSR and ESG factors have a lower cost of capital in terms of debt (loans and bonds) and equity."[236]

[231] Studart, R. and Gallagher, K. (2015). 'Guaranteeing Finance for Sustainable Infrastructure: A Proposal', Moving the trillions – a debate on positive pricing of mitigation actions, Brasil no Clima, 2015, pp. 92-110.

[232] [1] Bertocchi, M. and D'ecclesia, R.L. (2014). 'The Bond Market in Europe', Chapter 1 in Euro Bonds: Markets, Infrastructure And Trends, p. 4. [2] Love, I. (2003). 'Financial Development and Financing Constraints: International Evidence from the Structural Investment Model', Review of Financial Studies, Vol. 16, Issue 3, pp. 765-791.

[233] The latest financial depth and efficiency indicators from the World Bank's Global Financial Development Index (2017) suggests that low income countries experience around 14% (or one seventh) of the financial depth and efficiency of high income countries. Given that a key characteristic of a cross-border FMI-driven approach is improved financial depth and efficiency, the inverse of this proportion is used to proxy the magnitude of impact which developed economies may experience relative to emerging and developing economies.

[234] [1] Gianfrate, G., Schoenmaker, D. and Wasama, S. 'Working paper series 03: Cost of capital and sustainability: a literature review', Rotterdam School of Management, Erasmus Platform for Sustainable Value Creation. [2] Tang, D.Y. and Zhang, Y. (2018). 'Do Shareholders Benefit from Green Bonds?', Journal of Corporate Finance, Elsevier, Vol. 61(C). Doi: 10.1016/j.jcorpfin.2018.12.001. [3] ASEAN Catalytic Green Finance Facility and Asian Development Bank (2021). 'Green, Sustainability, and Social Bonds for COVID-19 Recovery - A Thematic Bonds Primer - Mobilizing Financial Markets for Achieving Net Zero Economies'. February 2021.

[235] Lodh, A. (2020). 'ESG and the Cost of Capital'. MSCI, 25 February 2020.

[236] Fulton, M. et al. (2012). 'Sustainable Investing: Establishing LongTerm Value and Performance', DB Climate Change Advisors, Deutsche Bank Group, 2012.

- **In the case of fixed-income, while there has been debate over the reality of the 'greenium', research is increasingly showing evidence of this pricing advantage for green securities.** The greenium is defined as the green bond premium that a borrower receives over vanilla bonds due to a lower cost of capital.[237] The literature has cited a historical greenium range of 0 to 69 bp across developed, emerging and frontier economies.[238] While the upper end of this range was experienced in 2016, the so-called "hype year" for green bonds following the Paris Agreement,[239] this range also captures the greeniums experienced more recently: Löffler et al. (2021) examines a "universe of about 2,000 green and 180,000 non-green bonds from 650 international issuers" and finds "that the yield for green bonds is, on average, 15 to 20 bp lower than that of conventional bonds, both on primary and secondary markets".[240] Similarly, Baker et al. (2018) finds a greenium range of 6 to 26 bp, with CBI-certified green bonds experiencing the upper end of that range.[241]

Indeed, economic theory suggests there can be a premium for sustainable securities. This sentiment is evident in recent "investor surveys carried out by the Climate Bonds Initiative, [in which] investors seem to overweight green bonds in bond holdings regardless of a pricing difference".[242] This is because sustainable securities take a wide range of non-price factors into account, leading to less information asymmetries and more benefits to the investor, such as stability and issuer accountability. This added advantage to sustainable securities is likely to drive up investor demand, causing yields to fall.

The pricing advantage of sustainable finance offers an opportunity to level the playing field across developed, emerging and frontier economies. Issuers in emerging and frontier economies generally face higher and more volatile costs of capital in traditional financial markets relative to issuers in developed economies. However, FMIs have helped to reduce traditional financing costs in these economies by, for example, facilitating domestic finance market access to international investors, through 'euroclearability'. Euroclearability has been found to reduce sovereign borrowing costs by 28 bp and corporate borrowing costs by 14 bp.[243] While the sustainable finance market is still too nascent to definitively quantify the impact that FMIs can have on further reducing the cost of sustainable financing, it is likely that the efficiency and openness benefits that have been experienced in euroclearable countries in traditional financial markets may also be experienced in sustainable financial markets, in the form of a consistently positive greenium. This prospect is illustrated in **Figure 5.3,** which shows the movement from the traditional finance baseline that euroclearability has enabled, as well as the difference in the baseline cost of capital of traditional and sustainable financial markets.

[237] Harrison, C., Partridge, C., and Tripathy, A. (2020). 'What's in a Greenium: An Analysis of Pricing Methodologies and Discourse in the Green Bond Market', The Journal of Environmental Investing, Vol. 10(1). Available at: http://www.thejei.com/journal/.

[238] [1] Karpf, A. and Mendel, A. (2018). 'The changing value of the 'green' label on the US municipal bond market', Nature Climate. [2] Partridge, C. and Medda, F.R. (2020). 'Green Bond Pricing: The Search for Greenium', The Journal of Alternative Investments, Summer 2020. Doi: 10.3905/jai.2020.1.096. [3] Wang et al. (2020). 'The market reaction to green bond issuance: Evidence from China', Pacific-Basin Finance Journal. Vol. 60, April 2020. Doi: 10.1016/j.pacfin.2020.101294. [4] Febi et al. (2018). 'The impact of liquidity risk on the yield spread of green bonds', Finance Research Letters, Vol. 27, December 2018, pp. 53-59. Doi: 10.1016/j.frl.2018.02.025.

[239] Febi, W., Schäfer, D., Stephan, A. and Sun, C. (2018). 'The impact of liquidity risk on the yield spread of green bonds', Finance Research Letters, Vol. 27, December 2018, pp. 53-59. Doi: 10.1016/j.frl.2018.02.025.

[240] Löffler et al. (2021). 'Drivers of green bond issuance and new evidence on the 'greenium', Eurasian Economic Review, Vol. 11, pp. 1-24.

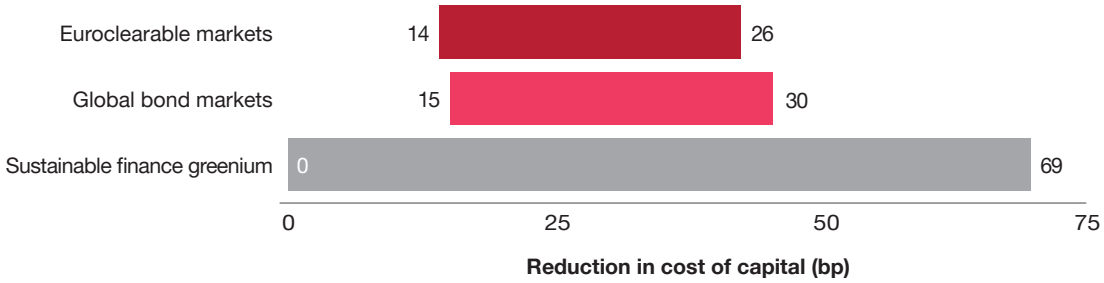
[241] Baker, M. et al. (2018). 'Financing the Response to Climate Change: The Pricing and Ownership of U.S. Green Bonds', National Bureau of Economic Research, Working Paper 25194. October 2018.

[242] Harrison, C., Partridge, C., and Tripathy, A. (2020). 'What's in a Greenium: An Analysis of Pricing Methodologies and Discourse in the Green Bond Market', The Journal of Environmental Investing, Vol. 10(1). Available at: http://www.thejei.com/journal/.

[243] PwC Strategy&, 'Impact of Euroclearability', April 2019.

If these benefits materialise in the sustainable finance market, a cross-border FMI-driven approach could lead to the consistent realisation of an average greenium of 14 to 21 bp across a wider set of sustainable securities. If FMIs can deliver improved transparency, efficiency and openness in the sustainable finance market, as they have in other markets, they can support the consistent reduction in costs of sustainable financing by an estimated average of 14 to 21 bp. This range is consistent with the range of yield differentials observed in the global bond market from increased openness, liquidity and efficiency across regions due to FMIs (15-30 bp),[244] as well as the range of reduced cost of capital observed in euroclearable markets (14-28 bp).[245] Additionally, it is consistent with the idea that greater transparency and liquidity in the sustainable finance market can lead to an increased greenium.[246] It also captures the lower yields experienced in both the equities and fixed-income markets to date. Given that the debate around the existence of a greenium is still ongoing, current sustainable finance market growth forecasts are not expected to account for the impact of a consistently positive greenium on investment.

Figure 5.3: Movement in cost of capital



Source: PwC analysis

A cross-border FMI-driven approach can uplift the annual sustainable finance market growth through the price channel. A lower cost of sustainable finance should help to bolster the supply of sustainable securities. Given that there has been a trend of recently oversubscribed green bond issues,[247] and there is evidence to suggest that a reduction to investor yield has not been a significant deterrent to green bond investment,[248] a greater supply of sustainable securities at a lower financing cost should lead to increased investments at the margin. In traditional financial markets, a 1 percentage point (or 100 bp) decrease in the cost of capital has been found to lead to a 15 to 75 basis point increase in investment.[249] This investment to interest rate sensitivity could be larger in emerging and frontier markets where investment is typically more discretionary. Love (2003) finds "evidence that an improvement in the functioning of financial markets will reduce firms' financing constraints... [allowing] for easier access to external funds for firms with good investment opportunities [which] will in turn enhance growth".[250] Therefore, over time, greater investments at the margin may become more pronounced, leading to an uplift in sustainable finance market growth via the price channel.

[244] Petrasek, L. (2012). 'Multimarket trading and the cost of debt evidence from global bonds', European Central Bank, Working Paper Series No 1212 / June 2010.
[245] PwC Strategy&, 'Impact of Euroclearability', April 2019.
[246] [1] Liaw, K.T. (2020). 'Survey of Green Bond Pricing and Investment Performance', Journal of Risk and Financial Management, Vol. 13, Issue 193. Doi: 10.3390/jrfm13090193. [2] Affirmative Investment Management, 'Greenium - fact or fiction?', 4 March 2021.
[247] Climate Finance Leadership Initiative, European Development Finance Institutions, Global Infrastructure Facility and Bloomberg (2020). 'Attracting Private Climate Finance to Emerging Markets - Consultation Paper on Private Sector Considerations for Policymakers', November 2020, p. 4.
[248] [1] Søgaard, V. (2020). 'The Price of Green', Copenhagen Business School, May 2020. [2] Zerbib (2019). 'The effect of pro-environmental preferences on bond prices: Evidence from green bonds', Journal of Banking and Finance, Vol. 98, pp. 39-60. Doi: 10.1016/j.jbankfin.2018.10.012.
[249] [1] Melolinna, M., Miller, H. and Tatomir, S. (2018). 'Business investment, cost of capital and uncertainty in the United Kingdom - evidence from firm-level analysis', Bank of England Staff Working Paper No. 717. March 2018. [2] Gilchrist, S. and Zakrajsek, E. (2007). 'Investment and the cost of capital: New evidence from the corporate bond market', NBER Working Paper Series, No. 13174. Available at: https://www.nber.org/papers/w13174.
[250] Love, I. (2003). 'Financial Development and Financing Constraints: International Evidence from the Structural Investment Model', Review of Financial Studies, Vol. 16, Issue 3, pp. 765-791.

The price and non-price channels are mutually reinforcing. Deep capital markets, greater transparency and improved comparability all serve to reduce transaction costs and foster a lower cost of sustainable finance. Likewise, a lower cost of sustainable finance can bolster the supply of sustainable finance from issuers, enabling greater sustainable finance flows. Greater flows will, in turn, improve the functioning of the sustainable finance market through greater liquidity which will help to further deepen capital markets. Therefore, the price and non-price channels of sustainable finance market growth are mutually reinforcing. The benchmark used to estimate cross-border FMI-enabled growth was also accompanied by a period of price reductions, which were of similar magnitude to the impact of the lower cost of sustainable financing from other studies. Therefore, the 2.5% per annum market growth uplift estimate is not adjusted any further – the price reductions in this price channel are consistent with, and likely captured by, the additional market growth rates in the non-price channel.

With a shared, global and political will, the trajectory of the sustainable finance market could be even higher. Important commitments from global leaders have already been made. President Biden's Leaders Summit on Climate in April 2021 – which brought together leaders of the economies responsible for 80% of global greenhouse gas emissions – saw the US announce its target to reduce emissions by 50-52% by 2030, relative to 2005 levels.[251] This year's UN's Climate Change Conference of the Parties (COP26) is expected to further energise the push for a sustainable future. The recent announcement of the EU's 'Fit for 55' commitment demonstrates this increase in ambition and encouragement for other countries to do the same. However, for these commitments to turn into action, greater sustainable finance flows are needed. It is indeed possible that with greater political championship, rather than just sponsorship, the market could see a step change in sustainable finance over the coming years. This would subsequently result in even greater impact potential of a cross-border FMI-driven approach to scaling the sustainable finance market, as there would be more resources and investment to successfully deliver the market scaling enablers set out in **Chapter 4.**

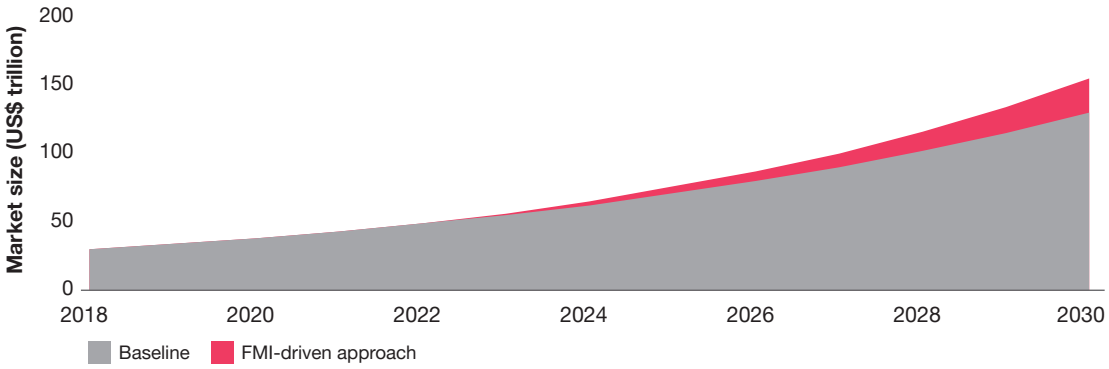
Increased market size from a cross-border FMI-driven approach

The 2.5% average annual market growth uplift from a cross-border FMI-driven approach translates into up to US$25 trillion additional capital mobilised in the sustainable finance market by 2030. Across the price and non-price channels, a cross-border FMI-driven approach is estimated to uplift the annual sustainable finance market growth by up to 2.5%. Using estimates from UNCTAD (2020)[252] and GSIR (2018),[253] which value the sustainable finance market at roughly US$30 trillion in 2018, and a sustainable finance market growth forecast from Deutsche Bank which assumes a 13% CAGR,[254] this market growth uplift is applied from 2023.[255] This results in an estimated US$155 trillion market value by 2030, up from Deutsche Bank's US$130 trillion baseline. In other words, a cross-border FMI-driven approach can lead to an additional US$25 trillion mobilised in the sustainable finance market by 2030.

[251] The White House, 'FACT SHEET: President Biden's Leaders Summit on Climate', 23 April 2021.
[252] United Nations Conference on Trade and Development (2020). 'World Investment Report 2020: International Production Beyond the Pandemic', p. 187.
[253] Global Sustainable Investment Alliance (2019), '2018 Global Sustainable Investment Review', March 2019, p. 8, Figure 1: Snapshot of Global Sustainable Investing Assets, 2016-2018.
[254] Deutsche Bank (2018). 'Big data shakes up ESG investing', Deutsche Bank Research, October 2018.
[255] Note that at the time of publication, this is the earliest a cross-border FMI-driven approach to scaling sustainable finance may be activated.

This trajectory is illustrated in Figure 5.4.

Figure 5.4: Additional capital mobilised in the sustainable finance market by 2030 with a cross-border FMI-driven approach



Source: Strategy& analysis, with Deutsche Bank forecast as baseline[256]

The majority of this additional capital could be channeled to emerging and developing economies. While there is currently little coverage of the sustainable finance market in these economies, there is great opportunity to grow the sustainable finance market in these economies if the right tools are deployed in an effective way. Considering improved efficiency and financial market depth are chief features of a cross-border FMI-driven approach which is centred on developing a financial system which offers equal access to the sustainable finance market through globally-reaching infrastructure, emerging and frontier markets stand to gain the most from this approach, where the need for sustainable financing is greatest and the investment of sustainable capital is the least. Therefore, the majority of this additional US$25 trillion capital could be channeled to emerging and frontier economies. The regional breakdown of the green bond market is assumed to be a reasonable proxy for the sustainable finance market. Further, if activated promptly, the FMI interventions set out in **Chapter 4** could deliver an increase in the emerging and frontier economy share of the sustainable finance market relative to the developed economy share each year.[257] If a cross-border FMI-driven approach could deliver even a modest 1 percentage point increase in the relative emerging and developing economy market share each year, this could result in up to an additional US$17.7 trillion to emerging and frontier economies and US$7.4 trillion to developed economies by 2030.[258]

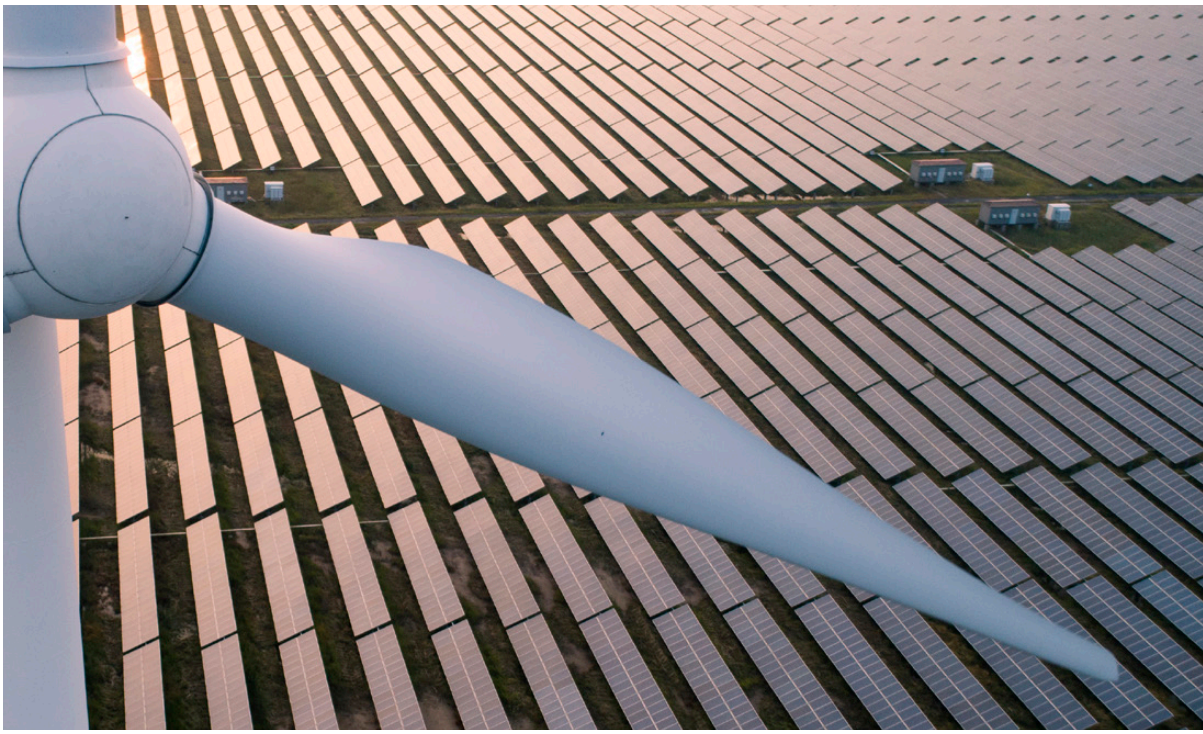
This additional capital can lead to incremental sustainable outcomes. It is difficult to ascertain how much of this incremental financing will meet sustainable goals. While some sustainable projects and investment opportunities may be funded by traditional finance means without a cross-border FMI-driven approach, the benefit of FMI-enabled sustainable finance is that it facilitates a deeper focus on sustainable outcomes with greater transparency, richer ESG data and improved communication between issuers and investors. Overall, this can lead to truly incremental sustainable outcomes.

[256] Deutsche Bank (2018). 'Big data shakes up ESG investing', Deutsche Bank Research, October 2018.
[257] The developed market and emerging and frontier market shares are assumed to be consistent with pre-pandemic shares through 2023. From 2024, the emerging and frontier market share is assumed to increase by 1 percentage point relative to the developed market share due to the emphasis that a cross-border FMI-driven approach places on support for underdeveloped market infrastructure.
[258] Note that the emerging and frontier economy share of the sustainable finance market includes sustainable finance by supranationals as these economies are most likely to benefit directly from supranational finance. Figures may not add up to US$25 trillion due to rounding.

Greater sustainability of mainstream capital markets

Over time, sustainable finance will not be a distinct market and instead sustainability will be a key feature across all financial decision making, globally. Mainstream financial markets have already made improvements to become more sustainable. This includes sustainability-related regulations, investment strategies and bank balance sheet management. For example, several European regulators "including France's [Autorité de Contrôle Prudentiel et de Résolution], the Bank of England and the Dutch National Bank have already started to conduct climate risk stress tests for their domestic institutions" and the European Banking Authority has already introduced climate risk sensitivity analyses in 2020.[259]

A cross-border FMI-driven approach can therefore support greater sustainability of mainstream financial markets. In addition to supporting the scaling of the sustainable finance market, the interventions proposed in this study can support the transition of mainstream financial instruments to become more sustainable. For example, embedding ESG disclosure within asset servicing is applicable to both 'transitioning' and 'clean' finance and offers an avenue for issuers of financial instruments to demonstrate their sustainability improvements. Indeed sustainability improvements can have the greatest short-term impact in converting polluting industries, rather than financing new, cleaner technologies with slow uptake.



[259] Oliver Wyman, 'Climate Change: Three imperatives for financial services', February 2020, p. 10.

5.3 Sustainable impacts

FMIs can facilitate sustainable finance which seeks real and measurable impact, beyond socially responsible investment. The OECD estimates that merely 10% of sustainable finance investments definitively seek sustainable development impact.[260] This is consistent with a report by the Asian Development Bank which finds that "the roles of [multilateral development banks (MDBs)] and UN agencies on SDG implementation appear to be compartmentalized between financing (led by MDBs) and technical advice (led by the UN)".[261] As the UN's SDG 2030 deadline approaches, greater resources will be channelled to progressing the SDGs and, as such, this share is likely to increase. The cross-border FMI market-scaling enablers proposed in **Chapter 4** can support the development of greater impact investing. For example, by providing an initial screening tool for sustainable securities and encouraging greater clarity on use of proceeds through streamlined ESG disclosure within asset servicing, FMIs support robust investor due diligence. Investors will therefore be better able to distinguish investment opportunities which deliver real and measurable impact from those which are conducted in a socially responsible manner but do not directly target ESG- and SDG-related areas.[262]

The additional capital mobilised by a cross-border FMI-driven approach translates to global time savings of up to 0.6 to 1.1 years in financing the UN's SDGs. It is estimated that to achieve the SDGs, there is a global investment need ranging from US$5 to 7 trillion per year.[263] Accounting for private and public financial flows which already target the SDGs, the financing shortfall is between US$2 and 4 trillion per year between now and 2030.[264] If the share of the sustainable finance market which is deployed to sustainable development impact increases by just 1 percentage point over the next eight years, the additional capital mobilised by a cross-border FMI-driven approach could translate into savings of up to 0.6 to 1.1 years in financing the SDGs (or roughly 7 to 13 months).[265]

There is uneven progress on sustainability across developed, emerging and frontier markets and COVID-19 is set to exacerbate this further. Relative to developed economies, many emerging and frontier markets have "weak public health systems, poor and financially vulnerable populations, inadequate social safety nets [and also] suffer from a precarious access to international capital markets".[266] COVID-19 is set to magnify the sustainability gap between developed, emerging and frontier economies even further. The OECD reports increases in inequality and food insecurity in the short term and poorer health outcomes over the medium-to-long term in emerging markets due reduced access to vaccinations and maternal care, as well as school closures during the pandemic.[267]

[260] OECD, Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet', 2020. Doi: 10.1787/e3c30a9a-en
[261] Asian Development Bank - Independent Evaluation, '2021 Annual Evaluation Review: Supporting the Sustainable Development Goals', March 2021, p. 13.
[262] United Nations Conference on Trade and Development, 'World Investment Report 2020: International Production Beyond the Pandemic', 2020, p. 187.
[263] [1] United Nations Association UK (2019). 'Filling the financing gap', 19 June 2019. [2] UNEP Finance Initiative, 'Rethinking Impact to Finance the SDGs: A Position Paper and Call to Action prepared by the Positive Impact Initiative', November 2018, p. 3.
[264] United Nations Association UK (2019). 'Filling the financing gap', 19 June 2019.
[265] Assuming linear growth of the sustainable finance market and progress against the SDGs
[266] Ahmed, S., Hoek, J., Kamin, S., Smith, B. and Yoldas, E. (2020). 'The Impact of COVID-19 on Emerging Market Economies' Financial Conditions', FEDS Notes by the Board of Governors of the Federal Reserve System, 7 October 2020.
[267] OECD, Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet', 2020. Doi: 10.1787/e3c30a9a-en.

However, a cross-border FMI-driven approach can help to balance progress on sustainability globally. Emerging and frontier economies currently face the largest SDG financing shortfall – the UN's Sustainable Development Solutions Network estimates a funding gap between US$1.4 trillion and US$3 trillion per year for low-income countries.[268] COVID-19 has only exacerbated this problem, putting emerging and frontier economies on "the brink of a balance-of-payments crisis that has been exacerbated by capital outflows and the collapse of commodity prices," which has reduced sustainable finance issuance greatly in these countries.[269] However, these economies stand to gain the most from a cross-border FMI-driven approach, which caters for the pooling of expertise and resources across market participants such as development banks. With greater emphasis on increasing financial market depth, improving transparency across sustainable finance globally and 'crowding-in' market participants on both the issuer and investor sides, a cross-border FMI-driven approach offers time savings of up to 0.5 to 1.1 years (or 6 to 13 months) for emerging and frontier markets in financing the SDGs by 2030. This compares to the potential 0.7 to 1.1 years (or 8 to 13 months) saved in developed markets, which face a relatively smaller SDG financing shortfall.

Environmental impacts

Environmental finance is likely to retain the majority share of the sustainable finance market in the period to 2030. Financing positive environmental outcomes has historically been a priority for the sustainable finance community, relative to the social and governance categories of ESG. This is evidenced by the breakdown of the 2019 sustainable bond market by SDG, which suggests that 77% of sustainable bonds have use-of-proceeds which target progress on environmental sustainability.[270] Despite environmental finance ceding some market share to social finance in 2020 due to the COVID-19 pandemic,[271] it is likely that environmental finance will retain a majority share over the next decade given the pressure to respond to climate change that both policymakers and industry alike are facing. While the sustainable bond market currently accounts for a modest share of the total sustainable finance market, a similar thematic breakdown is likely to materialise over time. A cross-border FMI-driven approach to scaling sustainable finance will support this thematic realisation, particularly as robust sustainability assurance and clearer and streamlined ESG disclosure create an environment in which use-of-proceeds are carefully considered and issuers are held accountable for their impact.

A cross-border FMI-driven approach to scaling sustainable finance could lead to an average annual global CO_2 equivalent (eq) emissions savings of up to 0.1-1.3% of current emissions. Within environmental finance, most investment is earmarked for climate change mitigation and adaptation, with CO_2 eq savings being the clearest impact metric. Gibon et al. (2020) estimates the aggregated life-cycle assessment based impacts of green bonds issued by the European Investment Bank between 2015 and 2018 and finds a savings range of 29-359 tonnes CO_2 eq per million euro.[272] Applying this range to the potential environmental share of the additional capital mobilised by a cross-border FMI-driven approach by 2030 leads to an average annual global CO_2 eq emissions savings of up to 0.1-1.3% of current emissions.[273] To put this into context, to achieve the Paris Climate Agreement's 1.5°C goal, global emissions need to fall by 11.7% annually.[274] To achieve the 2°C goal, they need to fall by 7.7% annually.[275] While the 0.1-1.3% average annual emissions savings estimate uses European baselines – which are notably more advanced than a global baseline would be – even the midpoint of an additional 0.7% in CO_2 eq savings would contribute substantially to progressing global climate goals.

[268] United Nations Association UK (2019). 'Filling the financing gap', 19 June 2019.
[269] Kuchtyak, M., Ghosh, R., Conner, S., Davison, A. and Cahill, B.(2020). 'Coronavirus Fallout Dampens Q1 2020 Green Bond Volumes While Spurring Social Bonds'. Moody's, 2020.
[270] Environmental Finance, 'Sustainable Bonds Insight 2020', 2020, p. 24.
[271] Environmental Finance, 'Sustainable Bonds Insight 2021', 2021, p. 38.
[272] Gibon, T. et al (2020). 'Shades of green: life cycle assessment of renewable energy projects financed through green bonds', Environmental Research Letters, Vol. 15, 2020.
[273] Assuming all expected environment finance by 2030 targets reducing CO2 eq emissions
[274] PwC, Net Zero Economy Index 2020, p. 6, Figure 1.
[275] PwC, Net Zero Economy Index 2020, p. 6, Figure 1.

Social impacts

Social finance is expected to account for roughly one fifth of the sustainable finance market by 2030. A similar approach is used to estimate the social share of the sustainable finance market in the period to 2030, proxied by the 2019 sustainable bond market SDG breakdown. This suggests that around 20% of sustainable finance will target positive social outcomes.[276] While the social finance share increased in 2020 due to the social detriment of COVID-19, many of these securities were short-term instruments in response to the pandemic, rather than long-term instruments to address persistent societal challenges. Therefore, the social share of the sustainable finance market in 2030 is assumed to be similar to the pre-pandemic value.

Up to 430 million children could be afforded primary school education through the additional capital mobilised by a cross-border FMI-driven approach. Within social finance, equal access to education remains a global priority. However, with the exception of charitable donations, many corporates are unlikely to help finance this goal and therefore most of the financing comes from public sector organisations. Sovereign, supranational, agency and municipal issuers accounted for about 58% of social bond issues in 2018 and 2019.[277] This breakdown is used to estimate the potential financing that might target equal access to education by 2030. Of the additional capital mobilised to emerging and developing economies from a cross-border FMI-driven approach, an annual average US$232 billion could be channelled to financing education. This compares to the US$193 billion annual financing gap for SDG 4 – "to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"[278] – in lower and lower-middle-income countries. Importantly, this figure includes the US$30-45 billion increase in the SDG 4 financing gap in 2020 alone due to COVID-19 related school closures.[279] In other words, if the entire expected social share of the additional capital mobilised by a cross-border FMI-driven approach by 2030 was to target positive educational outcomes, up to 430 million children could be afforded primary school education. This is 1.2 times the amount of children currently out of school in emerging and frontier economies.[280]

[276] Environmental Finance, 'Sustainable Bonds Insight 2020', 2020, p. 24.
[277] Environmental Finance, 'Sustainable Bonds Insight 2020', 2020, p. 22.
[278] United Nations Department of Economic and Social Affairs - Sustainable Development, Goal 4.
[279] [1] Save the Children (2021). 'Save Our Education Now - An Emergency COVID-19 Education Plan to get the poorest and most marginalised children safely back to school and learning', January 2021, p. 3. [2] OECD (2020). 'Act now: reduce the impact of COVID-19 on the cost of achieving SDG 4', Global Education Monitoring Report Team, Policy Paper 42, September 2020.
[280] [1] Save the Children (2021). 'Save Our Education Now - An Emergency COVID-19 Education Plan to get the poorest and most marginalised children safely back to school and learning', January 2021, p. 3. [2] OECD (2020). 'Act now: reduce the impact of COVID-19 on the cost of achieving SDG 4', Global Education Monitoring Report Team, Policy Paper 42, September 2020.

5.4 Conclusion

A cross-border FMI-driven approach to scaling the sustainable finance market offers significant economic and sustainable impacts over the long term. A cross-border FMI-driven approach can deliver an uplift to sustainable finance market growth, leading to greater flows within the global sustainable finance market. It can also improve the sustainability of mainstream capital markets by inherently supporting and facilitating the sustainable transition right across financial markets. These economic impacts have knock-on effects for sustainability, particularly for emerging and frontier economies where there is great opportunity but little coverage of the sustainable finance market. A cross-border FMI-driven approach can support the balancing of sustainability progress globally. This study has quantified these impacts in terms of time savings in financing the UN's SDGs by 2030, CO_2 eq emissions savings, and children in emerging and frontier economies afforded primary school education.

These estimates are indicative of the potential of a cross-border FMI-driven approach. While credible sources are used to inform the estimates presented in this study, estimating progress against SDGs, climate change and education is an inherently uncertain exercise due to the lack of data available on many SDG indicators. Therefore, these estimates should be taken as indicative of the potential impact that a cross-border FMI-driven approach could have in scaling the sustainable finance market over the long term.

FMIs cannot deliver this impact alone. The intention of a cross-border FMI-driven approach is to bring together market-scaling efforts in a coordinated way across the financial market ecosystem to create the right conditions and incentives to support the transition of sustainable finance to a mainstream market. Cross-border FMIs can provide the driving force, but committed collaboration across financial market participants is needed to make the necessary characteristics for a successful sustainable finance market – and consequently the impacts quantified in this chapter – a reality.

Time is of the essence. At the time of publication, there are just over nine years left to progress and achieve the UN's SDGs by the end of 2030. There is still a long way to go in a short amount of time. However, with swift endorsement and coordination, several of the market-scaling enablers proposed in this study can be activated over the next year. Additionally, adapting existing initiatives supporting sustainable finance can help to minimise activation time and cost.

There is an action for all market participants willing to get involved. To ensure a coordinated approach, it is imperative that FMIs, multilateral organisations, development banks and global banks co-design the way forward. Euroclear and its partners have already begun the development of a number of prototypes to set a cross-border FMI-driven approach into action. For ease and speed, activation of a cross-border FMI-driven approach might begin with cross-border FMIs, drawing upon their important relationships with sovereign and corporate issuers across developed, emerging and frontier markets. Collaboration across the financial ecosystem is needed to ultimately create a global financial market which is truly sustainable.

APPENDIX

A1. Key sustainable finance initiatives

Table A1: Summary table of key sustainable finance initiatives

Initiative	Launch year	Market participants involved	Initiative type	Description	Affected geographies	Affected stakeholders
Equator Principles[281]	2003	Over 100 financial institutions	Impact investing, responsible and sustainable investment	Risk management framework for environmental and social risk in project finance, intended to support risk management as a minimum standard for due diligence	37 countries	Adopting financial institutions, mostly banks; clients applying for project finance
Principles for Responsible Investment (PRI)[282]	2006	UN, institutional investors	Impact investing, responsible and sustainable investment	6 principles to incorporate ESG factors into investment and ownership decisions	Global	Signatory investors, companies
Sustainable Stock Exchanges[283]	2009	UNCTAD, UN Global Compact, UNEP FI, PRI	Corporate governance, accounting and disclosure	Global platform exploring how exchanges can improve ESG performance and promote sustainable investment and financing of the UN's Sustainable Development Goals through policy analysis, technical assistance and advisory services	Global	Stock exchanges and investors, companies, regulators and policymakers who interact with them
Global Sustainable Investment Alliance (GSIA)[284]	2012	7 largest sustainable investment membership organisations	Impact investing, responsible and sustainable investment	Collaboration of membership-based sustainable investment organisations around the world to deepen the impact and visibility of sustainable investment organisations at the global level	Global	Sustainable investment forums
Sustainable Banking Network[285]	2012	Emerging markets regulatory agencies and banking associations	Corporate governance, accounting and disclosure	Network committed to promoting sustainable finance in emerging markets in line with international best practice, intended to improve ESG risk management and increase capital flows to activities with a positive impact on the climate	Emerging markets globally	Member banks and agencies
Climate Bonds Taxonomy[286]	2013	CBI	Corporate governance, accounting and disclosure	Guide to climate aligned assets and projects intended to encourage and be an important resource for common green definitions across global markets, in a way that supports the growth of a cohesive thematic bond market that delivers a low carbon economy	Global	Green bond issuers and investors

[281] Equator Principles, 'The Equator Principles - About'.
[282] United Nations Principles for Responsible Investment, 'What are the Principles for Responsible Investment?'.
[283] Sustainable Stock Exchanges Initiative, 'About the SSE Initiative'.
[284] Global Sustainable Investment Alliance, 'About us'.
[285] IFC, 'Sustainable Banking Network'.
[286] CBI, 'Climate Bonds Taxonomy'.

A1. Key sustainable finance initiatives (continued)

Table A1: Summary table of key sustainable finance initiatives

Initiative	Launch year	Market participants involved	Initiative type	Description	Affected geographies	Affected stakeholders
Green Bond Principles (GBP)[287]	2014	ICMA	Corporate governance, accounting and disclosure	Voluntary guidelines that outline the approach to launching a green bond and recommend transparency and disclosure, intended to provide guidance to issuers; ensure availability of information to evaluate the environmental impact of green bonds; and assist underwriters through standard disclosures	Global	Green bond issuers and investors
Social Bond Principles (SBP)[288]	2014	ICMA	Corporate governance, accounting and disclosure	Voluntary guidelines that recommend transparency, disclosure and reporting, intended to drive the provision of information needed to increase capital allocation to social projects	Global	Social bond issuers and investors
Sustainability-Linked Bond Principles (SLBP)[289]	2014	ICMA	Corporate governance, accounting and disclosure	Voluntary guidelines that recommend structuring features, disclosure and reporting, applicable to all types of issuers and any type of financial capital market instruments, designed to drive the provision of information needed to increase capital allocation to such financial products	Global	Sustainability-linked bond issuers and investors
Preparation Instructions on Green Bond Endorsed Project Catalogue[290]	2015	PBOC	Corporate governance, accounting and disclosure	Taxonomy of activities and projects that can be considered for a green bond to support the issuance of green bonds, as well as third-party assurance, green bond rating and environmental disclosure	China	Chinese green bond issuers

[287] International Capital Market Association, 'Green Bond Principles (GBP)'.
[288] International Capital Market Association, 'Social Bond Principles (SBP)'.
[289] International Capital Market Association, 'Sustainability-Linked Bond Principles (SLBP)'.
[290] Green Finance Committee of China Society of Finance and Banking, 'Preparation Instructions on Green Bond Endorsed Project Catalogue 2015 Edition', October 2015.

A1. Key sustainable finance initiatives (continued)

Table A1: Summary table of key sustainable finance initiatives

Initiative	Launch year	Market participants involved	Initiative type	Description	Affected geographies	Affected stakeholders
Task Force on Climate-Related Financial Disclosures[291]	2015	FSB	Corporate governance, accounting and disclosure	Task force to develop recommendations for more effective climate-related disclosures that could promote more informed investment, credit and insurance underwriting decisions and, in turn, enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks	G20	Companies and investors
Guidelines for Issuing Green Bonds in Brazil[292]	2016	FEBRABAN and CEBDS	Corporate governance, accounting and disclosure	Issuance guidance for green bonds in Brazil, intended to develop the green bond market in Brazil	Brazil	Brazilian green bond issuers
ASEAN Green Bond Standards[293]	2017	ACMF	Corporate governance, accounting and disclosure	Initiative that facilitates ASEAN capital markets in tapping green finance to support sustainable regional growth and meet investor interest for green investments, part of the ACMF's broader efforts in developing green finance for the region	ASEAN	Green bond issuers and investors
Global Sustainable Finance Council[294]	2017	GFMA, ICMA, EBF, EFAMA, EMF/ECBC, IIF, ISDA, LMA, WFE and others	Impact investing, responsible and sustainable investment	Group of financial associations which coordinate efforts to promote green finance and cross-fertilisation between markets and asset classes, intended to be the counterparty to the official sector on green finance policy issues	Global	Policymakers, regional market participants
Green Bond Guidelines[295]	2017	Ministry of Environment, Japan	Corporate governance, accounting and disclosure	Provides specific approaches to issuing green bonds tailored to Japanese bond market but still consistent with GBP, intended to increase issuance and maintain credibility of green bonds in Japan	Japan	Japanese green bond issuers and investors

[291] Task Force on Climate-Related Financial Disclosures, 'About'.
[292] FEBRABAN and CEBDS, 'GUIDELINES FOR ISSUING GREEN BONDS IN BRAZIL 2016', October 2016.
[293] ACMF, 'ASEAN Green Bond Standards',
[294] International Capital Market Association, 'Global Sustainable Finance Council'.
[295] Ministry of the Environment, 'Japan's Green Bond Guidelines'.

A1. Key sustainable finance initiatives (continued)

Table A1: Summary table of key sustainable finance initiatives

Initiative	Launch year	Market participants involved	Initiative type	Description	Affected geographies	Affected stakeholders
Network of Central Banks and Supervisors for Greening the Financial System (NGFS)[296]	2017	90 members and 14 observers[297]	Corporate governance, accounting and disclosure	Network of central banks to manage environment and climate risk in the financial sector and mobilise capital to support sustainable development	Membership across 5 continents	Central banks and regulated institutions
One Planet Sovereign Wealth Fund (SWF) Working Group[298]	2017	14 SWFs, 14 global asset managers and 5 private equity firms and investment banks	Impact investing, responsible and sustainable investment	Working group to accelerate efforts to integrate financial risks and opportunities related to climate change in the management of large, long-term asset pools	Global	Sovereigns
ASEAN Social Bond Standards[299]	2018	ACMF	Corporate governance, accounting and disclosure	Voluntary process guidelines intended to enhance transparency, consistency and uniformity of ASEAN Social Bonds which will also contribute to the development of a new asset class, reduce due diligence cost and help investors to make informed investment decisions	ASEAN	Social bond issuers and investors
ASEAN Sustainability Bond Standards[300]	2018	ACMF	Corporate governance, accounting and disclosure	Voluntary guidance on the issuance of ASEAN sustainability bonds aligned with four core components (use of proceeds, process for project evaluation and selection, management of proceeds, and reporting)	ASEAN	Sustainable bond issuers and investors
Green Bond Pledge[301]	2018	International climate finance and environmental groups	Impact investing, responsible and sustainable investment	Pledge that all infrastructure and capital projects will address environmental impact and climate risk, intended to grow the green bond market	Global	Signatory agencies, governments and companies

[296] Network for Greening the Financial System, 'Origin and Purpose'.
[297] As of 30 April 2021
[298] One Planet Sovereign Wealth Funds, 'Integrating Climate Change Risks and Investing in the Smooth Transition to a Low Emissions Economy'.
[299] ACMF, 'ASEAN Social Bond Standards', October 2018.
[300] ACMF, 'ASEAN Sustainability Bond Standards', October 2018.
[301] Green Bond Pledge, 'About the Green Bond Pledge'.

A1. Key sustainable finance initiatives (continued)

Table A1: Summary table of key sustainable finance initiatives

Initiative	Launch year	Market participants involved	Initiative type	Description	Affected geographies	Affected stakeholders
Green Loan Principles[302]	2018	LMA, APLMA	Corporate governance, accounting and disclosure	Voluntary guidelines that outline the approach to issuing a green loan, recommending transparency and disclosure, intended to create a high-level framework of market standards to provide a consistent methodology in the green loan market	Global	Green loan lenders and borrowers
Technical Expert Group on Sustainable Finance (TEG)[303]	2018	European Commission	Corporate governance, accounting and disclosure	35 members from civil society, academia, business and finance, established to develop EU taxonomy, EU Green Bond Standard and methodologies for climate benchmarks and improve disclosures	EU	EU green bond issuers and investors
Corporate Forum on Sustainable Finance	2019	22 European companies representing over two-thirds of European green and sustainable bonds[304]	Impact investing, responsible and sustainable investment	Network of green bond issuers to discuss ideas and develop a broader set of sustainable financial market instruments	Europe	European sustainable bond issuers and investors
International Platform on Sustainable Finance[305]	2019	EU and 16 other member countries[306]	Corporate governance, accounting and disclosure	Promotes sustainable finance best practice through multilateral dialogue and helps investors identify sustainable investment opportunities, intended to mobilise private capital for green investments	Countries, representing 55% GHG emissions, 55% GDP, 50% population	Policymakers
Global Investors for Sustainable Development (GGISD) Alliance[307]	2019	30 CEOs of major financial institutions	Corporate governance, accounting and disclosure	Develops solutions to mobilise finance and investment in sustainable development	Global	Financial institutions and regulators

[302] LMA, APLMA and LSTA, 'Green Loan Principles: Supporting environmentally sustainable economic activity', December 2018.
[303] European Commission, 'Technical expert group on sustainable finance (TEG)', 13 June 2018.
[304] EDP, 'The Corporate Forum on Sustainable Finance gets involved', 5 November 2020.
[305] European Commission, 'International platform on sustainable finance'.
[306] As of 22 May 2021
[307] Global Investors for Sustainable Development Alliance, 'The Alliance'.

A1. Key sustainable finance initiatives (continued)

Table A1: Summary table of key sustainable finance initiatives

Initiative	Launch year	Market participants involved	Initiative type	Description	Affected geographies	Affected stakeholders
Green Bond Program – Kenya[308]	2019	Kenya Bankers' Association, Nairobi Securities Exchange, CBI, Financial Sector Deepening (FSD) Africa and FMO – Dutch Development Bank	Corporate governance, accounting and disclosure	Regulatory green bond framework to promote financial sector innovation by developing a domestic green bond market in Kenya	Kenya	Kenyan green bond issuers and investors
Net Zero Asset Owner Alliance[309]	2019	UN, 37 institutional investors[310]	Green and climate change investment associations	Alliance committing to transitioning investment portfolios to Net Zero by 2050 through a holistic ESG approach	European and American members	Institutional investors
Sustainability Linked Loan Principles[311]	2019	LMA, ALPMA, LSTA	Corporate governance, accounting and disclosure	Guidelines on issuing a sustainable loan, intended to provide guidelines for sustainability-linked loans and so promote their development and integrity	Global	Sustainable loan lenders and borrowers
EU Green Bond Standard[312]	2020	EU Technical Expert Group on Sustainable Finance	Corporate governance, accounting and disclosure	Voluntary standard to enhance the effectiveness, transparency, comparability and credibility of the green bond market and to encourage the market participants to issue and invest in EU green bonds	EU	Green bond issuers and investors
EU Taxonomy[313]	2020	European Commission	Corporate governance, accounting and disclosure	EU classification system for sustainable activities, intended to provide clarity on which activities are sustainable so businesses and investors can take more informed decisions	EU	EU ESG investors, FMPs offering sustainable financial products
ESG Disclosure Standards for Investment Products[314]	2021	CFA, investors	Corporate governance, accounting and disclosure	Voluntary, global industry standards to establish disclosure requirements for investment products with ESG-related features	Global	ESG investors
Transition Finance Taxonomy[315]	TBC	Canadian	Corporate governance, accounting and disclosure	National Standard of Canada for Transition Finance	Canada	Canadian companies needing to transition, investors, financial institutions

[308] Green Bonds Programme - Kenya, 'The Green Bonds Programme - Kenya'.
[309] UNEP, UNFI and UNPRI, 'UNITED NATIONS-CONVENED NET-ZERO ASSET OWNER ALLIANCE'.
[310] As of 22 May 2021
[311] LMA, APLMA and LSTA, 'Sustainability Linked Loan Principles', March 2019.
[312] European Commission, 'EU Green Bond Standard'.
[313] European Commission, 'EU taxonomy for sustainable activities: What the EU is doing to create an EU-wide classification system for sustainable activities'.
[314] CFA Institute, 'ESG Disclosure Standards for Investment Products'.
[315] CSA Group, 'Defining Transition Finance in Canada', 21 February 2020.

A2. Glossary

Table A2: Definitions of key terms[316]

Term	Definition
Central counterparty (CCP)	A central counterparty (CCP) is an entity that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the performance of open contracts.
Central securities depository (CSD)	A central securities depository (CSD) provides post-trade settlement services within a domestic market, ensuring that after a trade is agreed, the buyer's account is credited with the domestically traded securities and the seller's account is credited with payment. CSDs facilitate electronic settlement of security transactions on behalf of its members which are typically local financial institutions such as brokers and custodian banks.
Clearing house	An agency or corporation on an exchange that settles transactions for a fee. Most exchanges have one or more clearing corporations that are charged with matching orders together, ensuring that delivery is made to the correct party and collecting margin money.
Cross-border FMI	Cross-border FMIs have multilateral capabilities which enable and facilitate the connection of issuers and investors across borders.
Custodian	A custodian is the financial services company that maintains electronic records of financial assets or has physical possession of specific securities, and offers a full range of settlement, banking and custodian services. The custodian bank will normally be a local bank and a member of the CSD.
Domestic FMI	Domestic FMIs are FMIs with capabilities which enable and facilitate the connection of issuers and investors within the same domestic market.
Financial market infrastructure (FMI)	FMI refers to institutions and frameworks that are critical to the clearing, settlement and recording of monetary and other financial transactions. This includes payments systems, CSDs, securities settlement systems, central counterparties, security exchanges, trade repositories and global custodians.
Global custodian	A global custodian provides a single access point to national CSDs in various countries through its network of local custodian banks, offering settlement and a wide range of other services.
International central securities depository (ICSD)	An international central securities depository (ICSD) provides post-trade settlement services across borders, ensuring that after an international trade is agreed, the buyer's account is credited with the internationally traded securities and the seller's account is credited with payment.
Issuing agent	An issuing agent is an institution that acts on behalf of the issuer of securities in distributing the securities and in realising the proceeds thereof for the benefit of the issuer.
Payment system	A payment system is any system enabling the transfer of funds between parties.
Security exchange	A place, whether physical or electronic, where stocks, bonds, derivatives or other securities in listed companies are bought and sold.
Securities settlement system	An entity that enables securities to be transferred and settled by book entry according to a set of predetermined multilateral rules. Such systems allow transfers of securities either free of payment or against payment.
Trade repository	Trade repositories collect and maintain records of derivatives trades, with the aim of helping regulators monitor the build-up of systemic risk.

[316] Dictionary of Financial Terms. Copyright © 2008 Lightbulb Press, Inc. All Rights Reserved.

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