WILLIAM FRY

Sustainably green Creating a sustainable future for finance

Written by:



About this report

The concept of sustainable investment is not new. Its origins lie in the 1980s with the advent of socially responsible investment. However, particularly since 1995, investors have taken measures to include environmental, social and governance (ESG) factors in their decision-making processes. "Green" investment has come to be very much tied to developments in the most established of "sustainable" finance markets, the green bond market.

Since the first green bond was issued by the European Investment Bank in 2007, the green finance sector has grown exponentially. Green bond issuance almost guadrupled from US\$45bn in 2015 to US\$167.6bn in 2018, investment in green energy grew to US\$335.5bn in 2017 and assets under management incorporating an ESG mandate were US\$1500trn in 2016.^{1,2}

Last year also saw inaugural sovereign green issues from five countries-Ireland, Indonesia, Belgium, Lithuania and the Seychelles. However, as concerns around "greenwashing" (falsely representing a project as being green grow), companies, investors and society at large are looking at the much broader concept of sustainability and how truly "green" finance may fit in.

Green finance now goes beyond green bonds to climate bonds, green indexlinked bonds, carbon credits, green project finance, green venture capital and private equity, green revolving credit facilities, eco-securitisation, concessional loans, green bilateral loans, green syndicated loans, green asset finance, green deposits, government credit guarantees, and green technology leasing.

Much like the concept of sustainability, what is and is not "green" has been an issue primarily for regulators and other standard-setters. But how aware of green finance initiatives are investors and businesses across a range of sectors? How do they think about environmental change in their risk management practices? Who do they turn to for advice on green financial products? And what are the barriers to green finance for them?

In a survey conducted by The Economist Intelligence Unit in the first quarter of 2019, we asked senior executives from a range of industries in some of the leading global financial markets about these questions and how they saw the future of green finance. This report examines the survey results and what they may mean for the continued development of green and sustainable finance.

Key findings

- Green is the way forward for finance: eight out of ten respondents believe that green finance will grow in size and strategic importance over the next five to ten years; a guarter foresee that it will grow significantly.
- A range of green finance products are used on a widespread basis by a significant proportion of survey respondents. Green project finance (35%) is the most issued or used product, followed by green asset finance (32%) and green technology leasing (31%).
- The green policy best known by our respondents is Principles for Sustainable Insurance (recognised by 39%). It is also the most participated-in initiative (20%). The Sustainable Banking Network comes second, at 36% (with a participation level of nearly 20%), followed by GreenInvest, at 34% (with participation of 19%).
- There is generally a moderate level of awareness of green reporting guidelines among respondents, and actual following and participation levels are low. In terms of following guidelines, those of the Companies Act (23%), the Sustainable Accounting Standards Board (19%) and Climate Disclosure Standard Board (19%) are the most followed overall.
- Almost nine out of ten (87%) respondents state that their organisation understands how climate change could financially affect the business. Half of those surveyed have developed a range of strategies to deal with the effects of climate change on the value of their holdings.
- Artificial intelligence (AI; cited by 49% of respondents) and data analytics (47%) are seen as the leading technology drivers in the development of green finance in the next five years across all regions.

¹ Climate Bonds Initiative "The State of the Market 2018 report" March 2019 ² Green Finance Initiative

The Internet of Things is also cited as promising by 44% of those surveyed.

- Investor education initiatives are viewed by the largest share of respondents (39%) as the most efficient policy measures to boost green finance. Incorporating green standards into the fiduciary responsibility of asset owners (33%), the development of a dedicated label for green funds and products (28%), tax exemptions (nearly 28%), and the mandatory appointment of a board member with environmental expertise (27%) also rank highly.
- Unsurprisingly, at 59%, the EU is cited as the geographical region where the majority of respondents expect green finance to grow the most. More surprisingly, the US comes second, at 42%. The third region is Canada, cited by 38%.
- Synthetic green securities are expected by 43% of respondents to be the main area of interest within green finance over the next five years, followed by alternatives (private equity, managed futures; 40%) and results-based instruments such as results-based warrants (33% overall).
- In the light of heightened investor demand, a shortage of green bonds is likely to boost the green loan market. Sustainability-linked loans also have a promising future, owing to clearer benefits and easier implementation for companies.
- Nearly half of respondents view energy as the sector where green finance would experience the strongest growth, followed by technology and ICT, cited by one-third. Nearly one in three also foresee manufacturing, biotechnology and agriculture as priority growth industries for green finance.

Chapter I: From fringe to mainstream?

"I've worked for 15 years in this space and it is finally becoming more mainstream. I've had more conversations with investors about green finance in the past two years than in the previous 13," says Adeline Diab, co-head of sustainable and thematic investing at Barclays Investment Bank. "Everyone is beginning to understand that green finance is not something extra, something niche, it is about mitigating risks that are realthey are financially relevant factors. Now investors really want to understand the issues."

The UN climate change summit held in Paris in 2015, known as COP21, has widely been seen as a turning point in raising awareness of the impact of climate change, not just the physical effects but the financial effects as well.

Immediately following COP21, the Financial Stability Board (FSB), the international body that monitors and makes recommendations about the global financial system, established the Task Force on Climate-Related Financial Disclosures (TCFD) to ensure that investors had the right information to price climate risk and reward climate innovation.

The Task Force is now supported by three-quarters of the world's globally systemic banks, eight of the top ten global asset managers, the world's leading pension funds and insurersfirms managing almost US\$34trn in assets—as well as major credit rating agencies, the Big Four accounting firms, law firms and companies from a range of industries. As a consequence, the incentives for companies to follow TCFD recommendations to disclose

and manage climate-related risks have increased dramatically. Over 873 organisations have endorsed the TCFD recommendations, as at September 2019; as that number grows further, lenders, insurers and investors will increasingly expect this level of disclosure, and favour companies that do so.

The extra disclosure required by green finance products has proven to be a draw for investors interested in sustainability. Issuers must lay out their environmental strategy and how they will use the proceeds, usually assessed by an independent third party, which may also audit the issuer to prove whether promises have been kept and demonstrate what the money has been spent on. This process creates more dialogue-about both environmental strategy and the wider businessbetween borrowers and lenders than the traditional process of issuing debt.

As a result, demand for green bonds is now outstripping supply, according to Sean Kidney, CEO of Climate Bonds Initiative (CBI) and a member of the EU Technical Expert Group on Sustainable Finance (TEG). "Demand for these products is growing faster than the demand for the underlying investments," he says. "There are few barriers for investors beyond lack of supply."

In order to make it easier for investors, at least in Europe, to understand a product's green credentials, the European Commission's Sustainable Finance Action Plan is developing a taxonomy for sustainable economic activities, a harmonised green bond standard and methodologies for low carbon indices. The three major credit

rating agencies have all integrated environmental risk and green certification into credit ratings. And international organisations such as the CBI and the International Capital Markets Association (ICMA) have developed definitional frameworks, certification and validation methods for green financing.

The TEG's interim report, released in February 2019, proposed the content of an EU Green Bond Standard (EU GBS) and explained how its creation will address the barriers to the green bond market's further development, including possible incentives to support the growth of green bond issuance, as well as the links with other sustainable financing instruments. This work will also complete the parallel work by the European Commission on a potential EU Ecolabel for green financial products.

"Setting boundaries is useful to grow the market-more clarity will lead to faster growth," says Mr Kidney. "But we have to do it without becoming niche."

Helena Viñes Fiestas, deputy global head of sustainability and head of sustainability research and policy at BNP Paribas Asset Management, is also a member of the TEG. She says that the group's work on the taxonomy of sustainable activities is important. "The taxonomy is a dictionary of activities; we are defining how they contribute to climate activity, which is important, as everyone can interpret this differently," she says, explaining how the taxonomy will level the playing field. "No financial institution has this level or breadth of knowledge, so this provides scientific, evidence-based backing on environmental impact."



Chapter II: What has held back growth?

A lack of knowledge about how green finance works-both within financial services and within the companies wanting to utilise green finance products-has been a major barrier to further growth of the market.

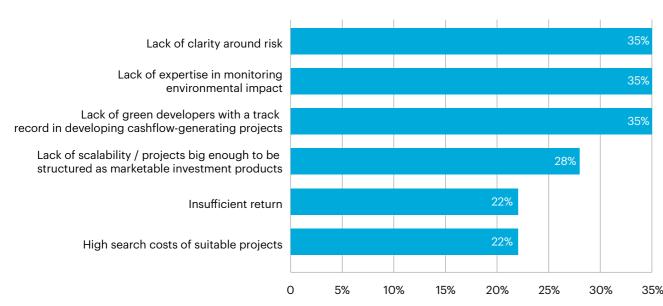
The financial services respondents to our survey pointed to a lack of green developers with a relevant track record (35%) and a lack of expertise in monitoring environmental impact (35%), while the other industries (energy, manufacturing and technology) cited, among other things, a lack of market knowledge on the actual benefits of green bonds (31%) and a lack of internal expertise on issuing procedure (29%).

Lack of expertise in monitoring environmental impact may also be a factor in the lack of clarity around risk that over a third (35%) of financial services respondents see as a barrier. For other industries, the lack of internal expertise on issuing procedure may also be a product of the lack of standardised "green" taxonomy, which over a fifth (22%) said creates reputational risk.

One way of overcoming the lack of expertise is to work with recognised experts. Leonie Schreve, managing director and global head of sustainable finance at ING Bank, says: "I see growing awareness levels amongst clients, but they still need a specialist team to guide

Chart 1

Main barriers to lending and/or funding in green financing - views of financial services respondents



Source: The Economist Intelligence Unit

them through the set-up of the green finance network."

Cost has also been a barrier. When it comes to green bonds, respondents overall said that they are held back by the additional costs associated with registering such bonds (31%) and the additional costs associated with verifying and reporting requirements (31%), while financial services respondents said that there are high search costs for suitable projects (22%).

Mr Kidney says that the cost of verification can be high but the TEG's standard taxonomy should help to reduce it, making the benefits of being green outweigh the (lowered) additional costs.

Jan-Willem van de Ven, head of climate finance and carbon markets at the European Bank for Reconstruction and Development (EBRD), agrees. "Monitoring and verification are very important, and there needs to be a standard practice to lower costs," he says. "We can help lower costs by providing technical assistance, but as requirements become more market standard and this kind of reporting is also expected by the market, costs will go down."

Mr van de Ven also believes that these requirements will become more accepted as a necessary part of doing business as monitoring actually starts providing opportunities to boost revenues. "If you track CO2, that helps your understanding of efficiency, which can help management understand

%2520opportunities.pdf

how to make productivity gains," he says. According to the TCFD, efforts to mitigate and adapt to climate change can create cost-saving opportunities for organisations through resource efficiency, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain.³

Policy and regulation

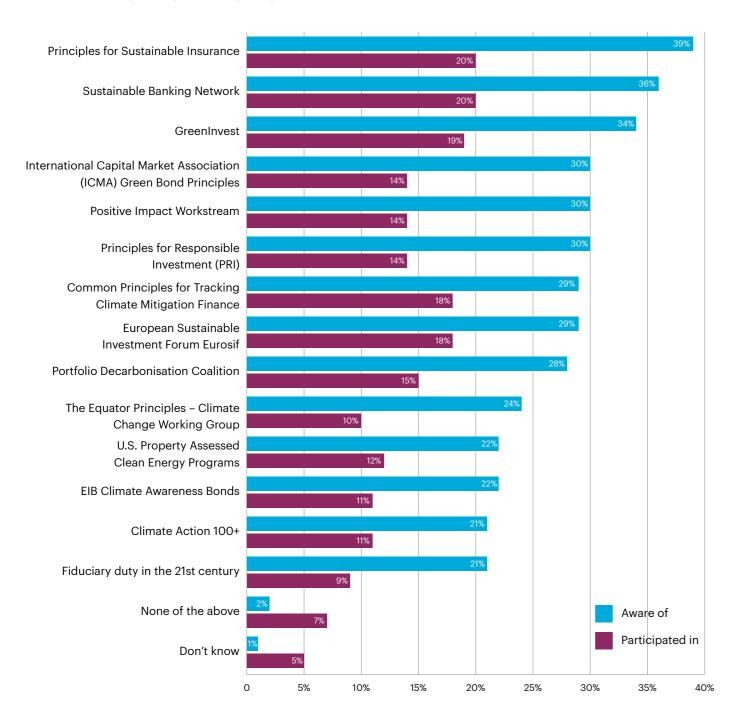
The survey found limited awareness of the major policy initiatives, with only the Principles for Sustainable Insurance (39%), the Sustainable Banking Network (36%), GreenInvest (34%) and the US Property Assessed Clean Energy Programs (33%) recognised by at least a third of survey respondents.

There is, at this stage, even lower involvement in these initiatives-only the Sustainable Banking Network and the Principles for Sustainable Insurance have at least a fifth of respondents involved.

This means that, although adequate regulation is being introduced to boost green finance, actual adoption is still slow. Market players may be finding the pace of change too swift, as Tobias Lindbergh, head of sustainable finance, debt capital markets at Sweden's Handelsbanken, points out: "We're talking to potential clients about the green bond standards and not all know about them. It can be hard to keep up when things are progressing quickly."

Chart 2

Awareness of / participation in policy initiatives



Nonetheless, standardisation and benchmarks are seen as key to overcoming many of the barriers to greater adoption of green finance products. Benefits would include reducing the costs of monitoring and reporting by creating standard disclosures and processes; helping to develop expertise by giving clear guidance on how to meet requirements; and increasing awareness amongst companies and investors by focusing attention on consolidated initiatives and standard guidance.

But there are some areas that are beyond the control of those trying to promote green finance-for example, regulation and tax codes are holding back the growth of the sector. For instance, bond issuers in US capital markets must comply with the

Source: The Economist Intelligence Unit



Securities and Exchange Commission's Rule 144a, which requires that the green bond documents are included in the filings, meaning that the legal implications are much more serious than in Europe. If an investor were to dispute the contents of the offering document, they could sue the issuer. On top of the more rigorous requirements, as the US has a more litigious culture, companies can be reluctant to expose themselves.⁴

This may be one of the reasons why green corporate bond issuance in the US, as a proportion of the country's overall debt market, lags behind that of other regions. Half of the green, social or sustainability-labelled bonds sold in 2017 came from Europe, the Middle East and Asia, and less than one-fifth (US\$314bn) came from North America.

Chapter III: How is the corporate mindset changing?

There are signs that business leaders are increasingly thinking about sustainability and climate change. Almost nine out of ten (87%) survey respondents said that their organisation understands how climate change could financially affect the business.

Over half of respondents have significantly or moderately considered environmental risk in terms of credit risk (for example, materiality in ESG risk score), operational risk (such as assessing operations in environmentally sensitive sectors) or market risk (through fundamental analysis and evaluation of ESG management and performance trends by sector, for example) in the management of their business. This indicates that corporate strategies-that is, how firms operate, obtain finance and expand their business—are clearly evolving to incorporate environmental strategy.

Technology respondents were the most confident (96%) that their organisation understands how climate change could financially affect the business, while financial services respondents were the least confident (80%). As many tech companies lack the emission-producing assets of their manufacturing or energy counterparts, they may find it easier to assess their more limited impact. For financial services companies, the assessment is complicated, as it is not just their own impact that they must consider, but that of the companies they invest in and lend to.

From assessment to action

Understanding the impact of climate change on their organisations and assessing risk is only part of the process for firms-actually doing something to mitigate the effects of climate change is also vital.

Half of survey respondents said that they have developed a range of strategies to deal with the effects of climate change on the value of their holdings. Financial services respondents were the most likely (65%) to have a range of strategies, perhaps because of the more complicated task that they face in assessing impact not just in their own organisations, but also within their investments and lending books. Well over half (61%) of technology companies are actively assessing their resilience with a range of climate risk scenarios, while half of manufacturing respondents are incorporating the risk from shifting supply and demand.

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Almost nine out of ten (87%) survey respondents said that their organisation understands how climate change could financially affect the business.

Chart 3

Has developed a range of strategies to deal with the effects of climate change on the value of our holdings

Actively assessing its resilience with a range of climate risk scenarios

Incorporating the risk from shifting supply and demand as economies react to climate change into medium and longer term strategies

Communicated the potential climate related risks and opportunities over the short. medium, and long term to clients and/or shareholders

> My organisation has not developed an approach to addressing the potential financial impact of climate change

> > Don't know

Approach to potential financial impact of climate change

			50%
			49%
			46%
			45%
10% 20)% 30)% 4 [,]	0% 50%

However, a worrying 8% of energy and tech companies say that their organisation has not developed an approach to addressing the potential financial impact of climate change.

Energy companies overall are behind their counterparts in other industries; less than half of respondents said that they are utilising each strategy for dealing with the effects of climate change. Firms from the energy sector will therefore be



recording higher contingent liability risk in relation to climate change. They are also likely to see their cost of capital, as well as their insurance costs, increase.

Mr van de Ven sees many firms struggling to develop an approach to address the potential financial impact of climate change. With this in mind, the EBRD has projects to improve climate governance at companies and is actively working with boards to improve sustainability considerations and make sure that a low-carbon or climateresilient investment is not a one-off.

Reporting

Reporting is a key area where many companies are struggling to understand what they should disclose, and how. Our survey found that business leaders have relatively moderate awareness of recommendations and guidelines, and there is little reporting on their nonfinancial performance. Of 14 different recommendations or guidelines, only the UK's Companies Act was recognised by more than a third (35%) of respondents. The highest level of guideline compliance was with the Companies Act (23%), followed by the Sustainability Accounting Standards Board and the World Economic Forum-backed Climate Disclosure Standard Board (both 20%). However, failing to report on nonfinancial performance is likely to create reputational risks for companies in the medium to long term. As these concerns become increasingly mainstream among investors and the larger public, especially those based in Europe, stakeholders will expect more granular data.

Chart 4 Awareness / following of guidelines

The Companies Act

Asset Owners Disclosure Project

Climate Disclosure Standard Board -World Economic Forum

IFC Performance Standards

Global Reporting Initiative (GRI)

Sustainability Accounting Standards Board (SASB)

International Integrated Reporting Council (IIRC)

Carbon Disclosure Project

Task Force on Climate-Related Financial Disclosures from the Financial Stability Board (FSB)

World Federation of Exchanges Sustainability Working Group (with the UN Sustainable Stock Exchanges)

> Institutional Investors Group for Climate Change (IIGCC)

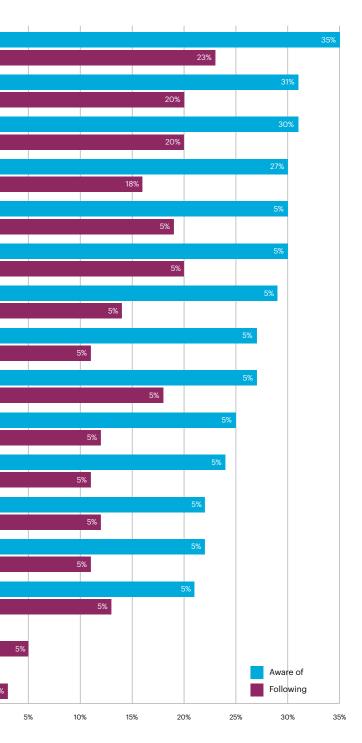
Green Loan Principles published by the Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications & Trading Association

The non-financial reporting directive

Article 173 of the law on energy transition and green growth

None of the abov

Don't know



Just over a quarter (27%) of survey respondents were aware of the TCFD's recommended guidelines, and of those who were aware of any recommendations or guidelines, just 18% said that they are complying with those of the TCFD.

"We are in the infancy of developing the right indicators for sustainability," says BNP Paribas' Ms Viñes Fiestas. "There isn't much research on environmental and social impact, so how do you translate that into quantitative indicators?"

The variety of different reporting guidelines is also problematic. If investors are to understand and be able to compare the non-financial performance of different companies, there must be common benchmarks.

At the National Treasury Management Agency of Ireland (NTMA), which managed the issuance of Ireland's first green sovereign bond in 2018, Frank O'Connor, director of funding and debt management, says that people are still finding their way. "We looked at other sovereigns that have already reported, like France, and worked with Sustainalytics [an independent provider of ESG and corporate governance research and ratings to investors] to ensure our reporting is clear and specific," he says. "We think the EU's green bond principles are a great overarching framework, and we're watching how the taxonomy develops

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We think the EU's green bond principles are a great overarching framework, and we're watching at how the taxonomy develops to address areas of debate, like how green are electric or hybrid vehicles."

Frank O'Connor, National Treasury Management Agency of Ireland

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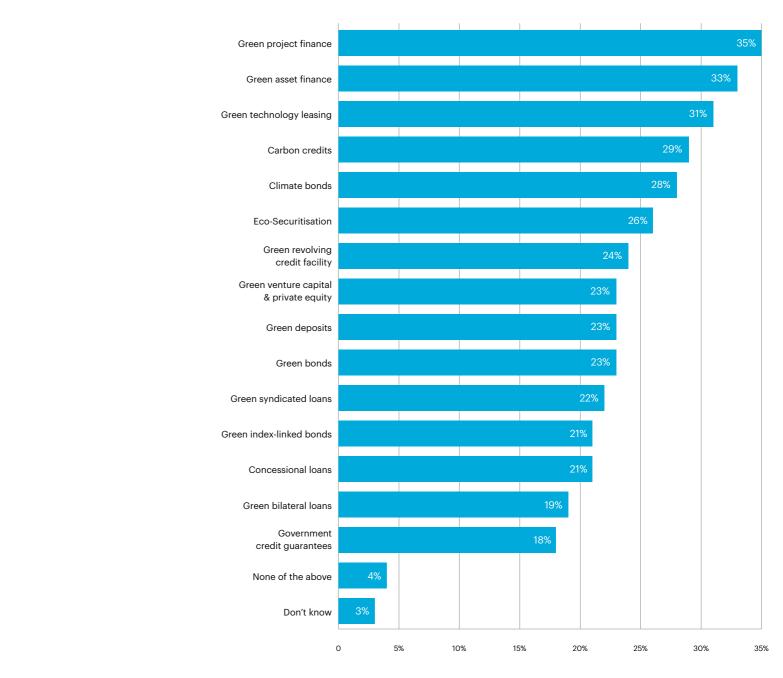
"We are also tapping into the expertise of government departments that have been looking at climate change for a while, and developing a cross-government system for reporting," he adds. "But we also believe more consistency will evolve with more issuance, even without standards. Investor expectations will drive reporting, and we will tweak ours as necessary to meet that."

Going green

The survey reveals a widespread use of a range of green finance products by a significant proportion of respondents. Around a third of respondents have utilised green project finance (35%), green asset finance (33%), green technology leasing (31%), and over a quarter have used carbon credits (29%), climate bonds (28%) and eco-securitisation (26%).

Chart 5

Investment in / trading of / issuance of green finance products



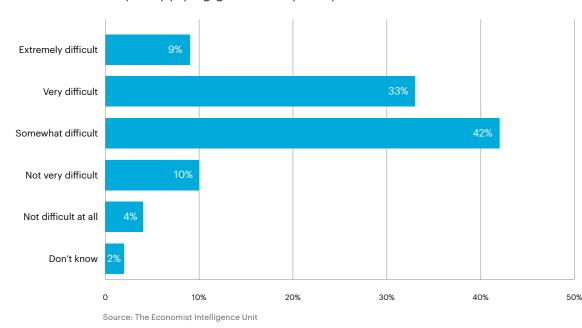
"We've seen much more corporate awareness, as some companies are realising that sustainability is a business opportunity," says Ms Schreve, highlighting that the number of mandates has been doubling year-on-year. "The green finance market is growing fast, but it is still very small compared to the rest of the market."

Financial services respondents are more frequent issuers of project finance (47%), green bonds (37%) and carbon credits (35%). Manufacturing respondents utilise asset finance (39%) and technology leasing (35%), while those in energy use project finance, syndicated loans and tech leasing (all at 33%). Tech respondents favour revolving credit (33%).

"A few years ago, green bonds were considered niche, but now there is a high awareness among our clients and the majority have used or are considering them," says Mr Lindbergh.

As corporates' use of green finance grows, products must evolve to continue to provide incentives. "Issuing green bonds has been about telling clients a company's green story to secure refinancing-the incentive was PR, it establishes a clear message about the company's sustainability," says Mr Lindbergh. "But there need to be other incentives. With green investments, for example, what compensates for the extra expense of, say, putting solar panels on the roof

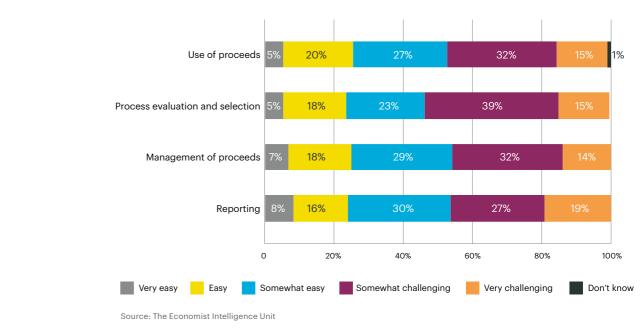
Chart 6



of a new building? If we want to make these deals, we need to look beyond the PR benefit."

Other benefits need to be made clear to encourage greater use. Companies are currently put off by the difficulty in applying the principles of green loan products—42% find their application extremely or very difficult, and a further 42% say that this is somewhat difficult. Project evaluation and selection is the process that survey respondents find most difficult (54% reported this to be very or somewhat challenging), but the use of proceeds (cited by 47%), management of proceeds (46%) and reporting (46%) are also seen as challenging.





Level of difficulty in applying green loan principles

The benefits of sustainability-linked loans are clearer. Ms Schreve gives the example of a syndicated loan that ING put together for Philips, a Dutch electronics major, which linked the rate paid on the loan to the company's ESG score. If, after a year, the score had gone up, the company would pay a lower rate. If it had gone down, it would pay a penalty.

Moreover, ESG-linked loans don't have a designated use of proceeds, making the whole process less heavy. And where green loans are mostly term loans to be used for a specific project or transaction, sustainability loans can be contracted for more general business use.

Difficulty in applying different aspects of green loan principles

Chapter IV: Where will we see future growth and what will drive it?

As corporates assess how all the elements of sustainability will affect their organisation, their uptake of sustainable and green finance products should grow. This is reflected in our survey, which found that a strong majority (79%) believe that green finance will grow in size and strategic importance over the next five to ten years. Almost a quarter (24%) believe that it will grow significantly. Financial services respondents are the most optimistic, with 92% believing that it will grow (39% significantly).

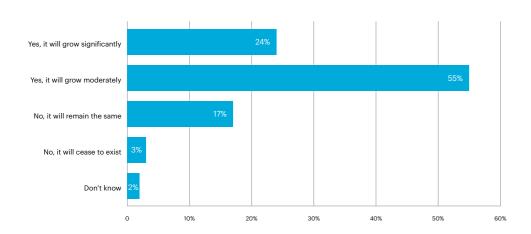
In terms of sector, respondents believe that energy (42%), technology and ICT (33%), and manufacturing (30%) will experience the greatest growth in green investment over the next five years. In terms of geography, the EU (59%) is, perhaps unsurprisingly, predicted to see the biggest expansion, with the US coming in second at 42%.

"Europe is leading, but it's not alone," says Ms Viñes Fiestas. "Some countries, like Canada and New Zealand, are following the EU example. Japan is taking its own approach. China is interestingit's competing with the EU to be green, but it is just the 'E' of ESG it is focusing on, so it is creating its own taxonomy on green lending, looking at insurance and subsidies, and bringing in disclosure requirements by 2020. We will see how much they want to co-operate with the EU on creating global standards. And with the US, as there is no longer leadership at the top, the movement is at the state level, and with the Democrats and their green new deal."

Mr van de Ven stresses that refinancing might help to bring green to the US corporate market. "While committing to green finance may be risky, refinancing is easier-it's less risky to replace project finance or bank lending. And then that

Chart 8

Growth of green finance



frees up capital for banks to lend more. We see it a lot in the EU, but it's not happening yet in the US," he says.

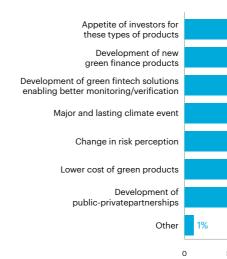
Drivers

Growth in both supply and demand—in terms of development of new green finance products (30%) and the appetite of investors for these types of products (37%)—are seen by survey respondents as the main drivers of the expansion of green finance over the next five to ten years. In addition, survey respondents believe that the development of green fintech solutions enabling better monitoring and verification (28%) will give a boost by reducing the cost and difficulty of utilising green products. Survey respondents also believe that a major climate event (28%) would push more investors and companies to adopt greener finance.

For Mr O'Connor, the demand from investors was a major factor in Ireland's decision to issue its first green sovereign

Chart 9

Main drivers of green finance over next 5-10 years



bond. "We were being asked more and more on our roadshows about a green bond," he says. "There is an underlying appetite as well-not just [from] the pension funds, but their consumers too. We also saw the issuance as a way of diversifying our investor base by appealing to new investors."

As investor awareness and appetite grows, Mr Lindbergh believes that a maturing of investor understanding and expectations will increase the market for green finance products. "I am seeing a shift in how investors view green bonds," he says, explaining how Swedish companies with a big carbon footprint traditionally shunned green bonds to avoid suspicions of greenwashing. "There is a growing recognition that this is where investors can have the biggest impact-by moving from an exclusion model to supporting transition strategies. As long as companies have clear strategies, there is now more acceptance."

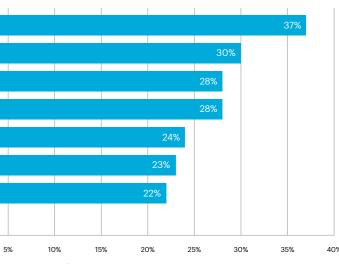
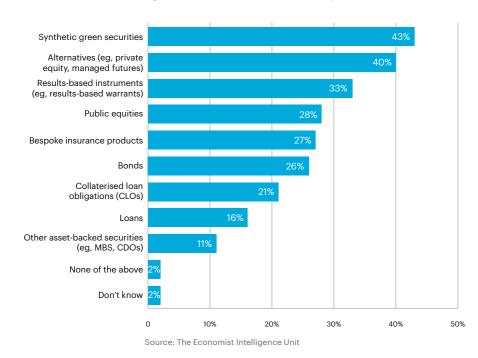


Chart 10

Areas with most interest for green finance over next 5 years



In terms of product development, survey respondents showed the highest level of interest in synthetic green securities (43%), alternatives such as private equity and managed futures (40%), and results-based instruments like results-based warrants (33%). Loans (16%) and related derivatives such as collateralised loan obligations (21%) appear to be less appealing.

However, this view is not shared by our interviewees. Ms Schreve believes that the green and sustainability-linked loan market has the potential to grow faster than the green bond space, "whether through a distribution or securitisation model", as it will appeal to investors other than traditional lenders, who are looking to diversify their holdings. The current supply shortage of green bonds should also boost the green loan market.

"Fixed income covered bonds, real-estate loan portfolios for energy links-these will drive volumes," says Mr Lindbergh. "Bilateral loans will grow. The resources we have put into green bonds are now being channelled into the expansion of green loans."

Moreover, Mr Kidney sees the potential for green versions of many financial products. "It's not necessarily that people look for new green products, but the use of green instruments will grow as people swap out of traditional products into green," he says. "As the market matures, there will be greater awareness of green options."

It is investor education (40%), through initiatives on the mechanisms and benefits of green finance, that survey respondents believe will be most efficient in boosting green finance in the next five years. This should boost both awareness of

and participation in sustainable finance frameworks and schemes.

Other policy initiatives, such as incorporating green standards into the fiduciary responsibility of asset owners (cited by 33% of respondents) and the development of a dedicated label for green funds and products (cited by 28%), are also expected to expand green finance, as these will give investors clear standards and labels to guide their decisions.

Chart 11

Most efficient targeted policy initiatives

Investor education initiatives on the mechanism and benefits of green finance

Incorporating green standards into the fiduciary responsibility of asset owners

> Development of a dedicated label for green funds and products

Tax exemptions/direct grants enhanced capital allowances for issuers of green bonds

Requiring asset owners to have at least one board director with environmental expertise

Requirement for financial institutions to report their alignment with the goals of the Paris Agreement

Tax reduction for institutional investors invested in green securities

Incentives to increase blended finance (strategic use of development finance and philanthropic funds to mobilize private capital)

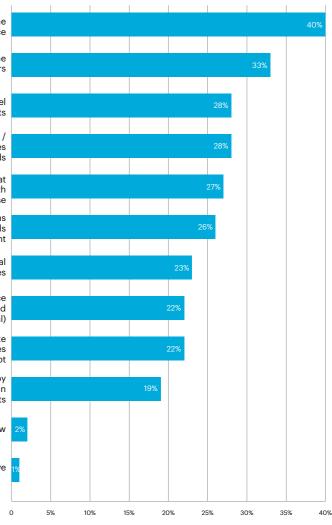
Implementation of comply-or-explain climate disclosure requirement for listed companies and non-listed companies with public debt

Underwriting of currency and political risk by government agency for institutions investing in green finance opportunities in emerging markets

Don't know

None of the above

Yet education of corporates is critical as well, according to Ms Schreve. "Green is on the agenda of many companies, but not all, so education, particularly of the finance functions, is vital," she says. "But while we do our best to educate our clients-and once they see the benefits of green finance products, they are convinced-a more co-ordinated approach is needed in order to meet the Paris Agreement requirements."



Who will lead the way?

Governments have historically led the climate debate and action, but the slow pace of change has generated a rise of grassroots leadership, explains Ms Diab. "Investors and companies are becoming the drivers of the carbon agenda," she says. "Even in the policy sphere we are seeing more grassroots action. For example, while Trump pulled the US out of the Paris Agreement, many US cities and states are working together to remain a part of it. And we're seeing central banks like the Bank of England now including climate in their stress tests of asset managers and insurers."

Who is taking the lead depends on region. "We see the EU, China and the Bank of England driving change, but in the US you see development happening from the market players, not regulation," says Ms Schreve. "The private sector is pushing the agenda more."

Ms Viñes Fiestas agrees. "There has been a silent revolution over the past 15 years, led by civil society pushing for internal and external change," she says. "Regulation is happening because of the support of key players like financial institutions."

Financial services providers need to not only push for change but to lead by example as well, according to Mr Kidney. "Some are starting to appreciate the risk associated with climate change, but what we really need to ask the banks is what are they doing with their whole business? Banks can be drivers of change," he says.

ING has accepted that challenge. "We launched the Terra Approach and

committed €600bn of our lending book to be aligned with the Paris Agreement, with the intention of getting other banks on board," says Ms Schreve. "We set a goal in 2017 to double our portfolio of green finance by 2022. We have applied standards that were designed for asset managers to assess climate impact but made it open source so anyone can use the same methodologies. We want to build an even playing field-it's a joint effort to realise Paris."

Technology: A helping hand?

The wider-spread use of an open-source approach like ING's, which fosters sharing and standardisation, could help to solve the data problems identified by interviewees.

"In the countries we work in, data is a challenge," says Mr van de Ven. "There is growing awareness and interest in green finance, but we lack the data needed for the planning exercise. For example, in some sectors we don't know the emissions profile, which is pretty basic, or it's very outdated. Also, many of the countries we work in have a substantial informal sector which is not monitored, so the challenge is how to collect data on its impact."

"One area where IT can lower costs is automating data collection, making it more rigorous and reliable." he adds. "But the first step is improving the quality of the underlying data."

Beyond data collection, help understanding the data is needed. "The data sets that are available are static, but if you could add the lens of a feed-to understand the noise-investors might get a better sense of the risks," says Ms Diab.

"

There has been a silent revolution over the past 15 years led by civil society pushing for internal and external change," she says. "Regulation is happening because of the support of key players like financial institutions.

Helena Viñes Fiestas, BNP Paribas Asset Management

Data analytics, as well as AI that can find patterns in the data, are the technologies expected to play a key role in the development of green finance in the next five years, selected by 47% and 49% of survey respondents respectively.

"AI will revolutionise finance," says Mr Kidney. "It can be useful to better understand and discover patterns, as a tool across portfolios to identify what's green."

Ms Schreve says that ING is running several innovation products based on AI and analytics in order to assess how they can better support the bank's clients. "I also see a number of blockchain initiatives to improve traceability by tracking green portfolio transactions," she says.

Although blockchain is often pointed to as a solution to improve transparency and aid verification and traceability, less than a quarter (24%)



of survey respondents believe that it will play a key role in the development of green finance in the next five years. Smart contracts, which can work independently or on top of a blockchain, are expected to play a greater role, particularly by respondents from the energy sector (49%, compared with 36% overall).

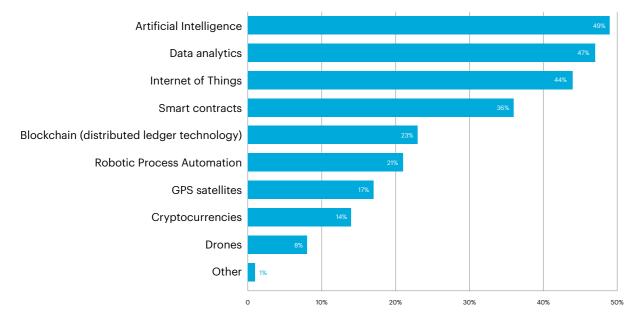
The internet of things also shows promise, especially for manufacturing respondents (62% compared to 44% overall).

Overall, technology allowing investors in and users of sustainable finance products to monitor progress towards their targets is bound to play a vital role in boosting the sector's development. A streamlined reporting process will also leave more time for corporates to focus on value-added tasks such as strategy and execution.

This is seemingly confirmed by the fact that the development of green fintech solutions enabling better monitoring and verification is expected to be a top-three driver of the expansion of green finance over the next five to ten years (selected by 28% of respondents).

Chart 12

Technologies playing a key role in development of green finance



Source: The Economist Intelligence Unit

Conclusion

The world of finance is undeniably getting greener. A strong majority of survey respondents believe that green finance will grow in size and strategic importance over the next five to ten years Respondents expect this expansion to be driven by increased investor appetite, itself backed by education of both investors and corporations, through initiatives on the mechanisms and benefits of green finance.

Until now, the companies surveyed have been held back from utilising green finance by a lack of knowledge about these products' inner workings, associated costs, and a limited awareness of and participation in the major policy initiatives, recommendations and guidelines. However, there are explicit signs that things are changing. As many companies start to realise that sustainability is in fact a business opportunity, and as investors recognise their potential impact in supporting sustainable transition strategies, the purpose of green finance becomes increasingly relevant, and its benefits clearer.

The development of a proper green taxonomy and the standardisation of guidelines and benchmarks will be key in overcoming many of the barriers to greater adoption of green finance products. The support of the private sector—and financial services in particular-is paramount when it comes to pushing the green regulation agenda.

New technologies-in particular, AI and analytics—will also boost the development of green finance, by increasing data reliability and helping firms and investors to better interpret data patterns and risks. Smart contracts,



based on distributed ledger technology, can also be used to monitor green projects and validate transactions.

There is currently widespread use of a range of green finance products by a significant proportion of survey respondents. Although green project finance, asset finance and technology leasing prove most popular, market players appear open to a range of green products.

This openness was noticeable in the small, but significant, take up of the first bond with return on investment linked to an index tracking a basket of companies' performance on the UN Sustainable Development Goals (SDGs). The bonds, launched by the World Bank and arranged by BNP Paribas in December 2018, were issued to retail investors in Hong Kong and Singapore, raising US\$3.5m. The proceeds will finance projects that support aligned goals of the World Bank and the SDGs, such as eradicating extreme poverty.5

With an extensive range of environmental, social and governance issues to tackle, and sustainable investment mandates becoming mainstream, it seems green finance has a bright future ahead.

The survey

In February-March 2019, The Economist Intelligence Unit surveyed 205 senior executives from a range of industries in Canada, the US, the UK, Scandinavia, Germany, Belgium, Ireland, France, Italy and the Netherlands on their views about green finance.

- 4% of respondents were located in the UK and Ireland, 27% in the US and Canada, and 49% in the rest of Europe.
- The number of respondents was equally split between four sectors: energy, financial services, manufacturing and technology.
- 62% of respondents were from the C-suite (including general counsel), with director to managing director level positions making up the remaining 38%.
- The top functional roles represented were strategy (22%), general management (16%), and finance, taxes and trade (12%). IT and technology made up 10%, as did operations and logistics.
- Nearly two-thirds of companies (64%) surveyed had annual revenue of at least US\$1bn.

The Economist Intelligence Unit is grateful to the following senior executives from the green finance space for their thoughts and insights:

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Sean Kidney, CEO, Climate Bonds Initiative (CBI), and a member of the EU Technical Expert Group on Sustainable Finance (TEG).

Tobias Lindbergh, head of sustainable finance, debt capital markets, Handelsbanken

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Jan-Willem van de Ven, head of climate finance and carbon markets, the European Bank for Reconstruction and Development (EBRD)

Helena Viñes Fiestas, deputy global head of sustainability and head of sustainability research and policy, BNP Paribas Asset Management

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