Green Finance Initiative

CITY OF LONDON

中国金融学会绿色金融专业委员会
Green Finance Committee, China Society for Finance and Banking

GLOBALISING GREEN FINANCE

DELIVERING FOR A GREENER TOMORROW

Progress Report November 2018
by UK-China Green Finance Taskforce

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Edited by James Boyle, Cheng Lin & Simon Horner

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FOREWORD

Green finance has rapidly accelerated over the past year as responsible investors have pushed for change, and governments have provided strong signals of support. The G20 Sustainable Finance Study Group, which has been co-chaired by China and the UK, has inspired many countries to develop their green finance roadmaps. The pace of green financing and investment is encouraging. But the IPCC's Special Report on the Impact of Global Warming Above 1.5°C was a timely reminder of all that is at stake if we fail to make the transition to a low carbon future. More is needed to push green finance and sustainable investment into the mainstream.

The UK and China are in a privileged position. We are recognised global green finance leaders. With that recognition comes responsibility. Together, we need to continue to push the boundaries of green finance and channel green and sustainable capital flows. We need to forge the path to a greener tomorrow.

In our last report published in September 2017, *Turning Green Momentum into Actions*, we set out a roadmap to expedite green finance and investment. We placed a heavy emphasis on taskforce members taking concrete action – doing their bit to green the financial system. In this, our latest progress report, we can confidently say that we have acted.

Over the past year we have focused on delivering key changes needed to mobilise more green capital, and to support transition to a sustainable future.

- We have developed the Green Investment Principles for the Belt and Road – a voluntary commitment we believe will ensure climate considerations and green finance are embedded along the Belt and Road.
- We have reviewed barriers to green securitisation in China and describe a pathway to mainstream green asset-backed securities, which will enable participation of more institutional investors in green investment.

- We have shone a spotlight on the value proposition of ESG investing from a practitioner perspective, and in this report call for tangible and practical action to realise the potential of the ESG revolution.
- And we have launched a joint TCFD-implementation pilot which is rapidly advancing the capacity of UK and Chinese financial institutions to improve disclosure of environmental and climate-related information.

We hope this report marks a turning point in the global green finance and investment agenda – a decisive shift towards action. Our partnership shows that the collective efforts of a committed few can make a difference. We will continue to work together to make the changes that matter. And we will be supported in our endeavours by the new UK-China Green Finance Centre we are setting up.

The road ahead is long, but the opportunities are great. It is only through cooperation and coordination that we can build a greener and more sustainable future.

Ma Jun   Roger Gifford

Dr Ma Jun
Chair China Green
Finance Committee

Sir Roger Gifford
Chairman, UK Green
Finance Initiative

EXECUTIVE SUMMARY

Since pledging to reduce emissions at COP 21 in Paris, the UK and China have been deeply committed to sustainable economic growth. In recognition that the financial sector has a central role to play in facilitating the transition to a low carbon future, China and the UK have been leading international efforts to green the global financial system. We formally set up the UK China Green Finance Taskforce in 2017 with focus on assessing green finance-related risks and opportunities. These efforts have ranged from ensuring climate and environmental risks are adequately factored into investment decisions, to supporting the development of new green products and services to meet burgeoning investor demand.

In China, the government continues to develop a comprehensive green finance system under the aegis of the 13th Five Year Plan. The State Council of China has announced eight cities as regional pilot programs for green finance. The China Securities Regulatory Commission has introduced mandatory environmental disclosures for listed companies by 2020. The China Fund Management Association has released Green/ESG Investment Guidelines to fund managers.

In the UK, the Bank of England and Financial Conduct Authority have released forward looking consultations aimed at recalibrating regulation to better capture exposure to climate and associated risk. The UK Government has recently announced it is preparing a Green Finance Strategy to be released in 2019.

To augment the forward-thinking public policies being developed in the UK and China, the UK-China Green Finance Taskforce, organised by UK Green Finance Initiative (GFI) and the Green Finance Committee (GFC) of the China Society for Finance and Banking, has been hard at work.

In our last report published in September 2017, *Turning Green Momentum into Actions*, the UK-China Green Finance Taskforce articulated the main challenges to scaling green finance and made recommendations to overcome them. Working groups drawing on leading investors, lenders, regulators and researchers have been advancing these recommendations. Despite many existing challenges, considerable progress has been made – many recommendations have been implemented.

This report celebrates the concrete changes achieved and sets out further actions on the path to a greener tomorrow. As a marker of our shared commitment to delivery, the GFC and GFI are partnering on the new UK-China Green Finance Centre. The Centre will provide dedicated resourcing to accelerate the delivery of shared priorities.

GREENING THE

BELT AND ROAD

Given the scope and scale of infrastructure investment along the Belt and Road, ensuring investments are climate-resilient, and environmentally and community-friendly is vital.

Turning Green Momentum into Actions recommended forming a Green Belt and Road Investor Alliance to promote the greening of the Belt and Road. Since then, more than 50 international organisations have declared their commitment to supporting sustainable investments along the length of the Belt and Road.

In this report, the Taskforce presents Green Investment Principles for the Belt and Road. The principles will guide financial institutions and corporations on their journey to embed green finance into investment projects along the Belt and Road.

In addition to presenting the Green Investment Principles, the Taskforce makes three recommendations:

1. A Secretariat should be established to expand the membership of the principles, support founding signatories and track progress against the goal of greening the Belt and Road.

2. Over the coming months, the Secretariat should work with prospective signatories to develop implementation guidance and toolkits. The Secretariat should organise capacity building workshops in China and the UK to increase awareness of the principles and to share best practice adoption advice. The workshops should include representatives from projects and countries across the BRI.

3. The Secretariat should report against implementation progress 12 months after the formal launch of the principles. It should also consider developing an annual reporting tool to assist individual signatories track their progress.

ACCELERATING GREEN SECURITISATION

Turning Green Momentum into Actions recognised the potential of securitisation to unlock Chinese capital and rapidly mainstream green investment products.

Green securities could appeal directly to domestic institutional investors while fostering green growth. Moreover, they have the potential to increase liquidity for green investments in China by attracting international institutional investors as regulatory and market frameworks advance.

The UK-China Green Finance Taskforce has assessed barriers to scale of green asset-backed securities in China. The review considered legal, regulatory and structural factors, and sets out a practical roadmap for accelerating green securitisation in China. Four recommendations would pave the way to widespread green asset-backed securities in China:

1. The PBOC should develop a unified legal framework for green asset-backed securities for issuers. This would help ensure green products do not attract higher risk ratings simply because they exist outside the current regulatory framework, in turn increasing their investment attractiveness.

2. International credit rating agencies, in conjunction with leading universities, should conduct a research programme to collate data on the performance of green ABS in comparison to other types of securitisation, to demonstrate lower default rates. This research would act as a signal of investment quality to international investors.

3. The GFC and GFI should facilitate a dialogue among Chinese insurers and pension funds about the positive attributes and the potential of Green ABS to match their investment preferences.

4. The Chinese and UK Governments, along with MDBs, should consider collaborating on cornerstoning a dedicated green ABS fund, to invest and generate returns, but also to catalyse the market for other institutional investors, and incentivise issuers and originators to structure more green ABS opportunities.

PRACTITIONER VIEWS ON ESG INVESTING

Turning Green Momentum into Actions made a powerful case for the benefits of ESG investing. However, practical issues remain.

Over the past 12 months, ESG momentum has surged and many investors are leading the way. We have seen also seen ESG and sustainability related investment products develop at a considerable rate. This is consistent with our 2017 report that showed the positive financial outcomes that strong ESG credentials can have on pricing of physical assets, financial securities, cost of capital and investment strategies. But more remains to be done, particularly to support ESG practitioners.

1. ESG investing can improve financial and overall outcomes for investors, investment managers and regulators. This will require market participants to dive deep into ESG factors across sectors and asset classes. Regulators can support these efforts by developing guidelines for ESG investment and further clarifying fiduciary duties.

2. Investors should systematically integrate ESG into their investment approaches. To achieve this, they must also promote a consistent, comparable, and transparent approach to disclosure. Disclosure will need to extend beyond an emphasis on TCFD to capture social and governance factors.

3. The GFC and GFI should work together to support the development of ESG investing in China. Emphasis should be on developing ESG investment guidelines for Chinese long-term investors and encouraging investors to see the benefits of longer investment horizons.

4. Companies should be encouraged to conduct ESG analysis and reporting strategically, truthfully and responsibly. This reporting should focus on material issues, business strategy and go well beyond CSR. If done properly, this will build confidence and trust in ESG data and disclosures.

5. To capture the positive returns of successful ESG engagement, investors should go beyond disclosure to develop sophisticated engagement processes and action plans that deliver real change. This will require appropriate skills and resourcing of engagement teams and enduring relationships with companies.

6. Regulators, industry associations and service providers should harness emerging technology to rapidly lower the costs of accessing of reliable and quality ESG data.

ENVIRONMENTAL AND CLIMATE DISCLOSURE

Turning Green Momentum into Actions placed a heavy emphasis on implementing the recommendations of the Taskforce for Climate-related Financial Disclosures (TCFD).

China and the UK launched a joint TCFD pilot programme, in which 10 leading financial institutions would adopt TCFD recommendations and curate the practical lessons they learned for subsequent adopters.

Throughout the past year, the pilot institutions have discussed the objectives, contents, methods and action plans of environmental information disclosure. This work culminated in the publication of the *Action Plan for the Pilot Working Group of UK-China Climate and Environmental Information Disclosure* in September 2018, encouraging pilot financial institutions to conduct environmental information disclosure.

The Action Plan sets out clear expectations for the depth of implementation for all pilot institutions. But it also provides for the working group to raise awareness of TCFD recommendations and China's environmental disclosure reporting framework through meetings, seminars, financial institutions' participation and publication of reports.

The UK-China Green Finance Taskforce is pleased to launch the first-year report and case studies from the pilot institutions capturing lessons learned in their first year of disclosure. It is hoped that these case studies assist institutions aspiring to implement TCFD and help them take the next steps in understanding their exposure to climate and environmental risk.

CHAPTER 1

GREENING THE BELT AND ROAD

The Belt and Road Initiative (BRI), launched by President Xi Jinping in 2013, has the expansive ambition of revolutionising global trade and infrastructure. It plans to enhance economic growth and build future prosperity. The BRI was launched naming 65 countries along the routes, which has now expanded to 130 global participants and encompasses more than two thirds of the world's population.

The economic opportunities created by the BRI are self-evident. However, it also has the potential to rapidly accelerate the global transition to the low-carbon economic future needed to address the challenge of climate change. Realising this potential across the length and breadth of the BRI will not come without its challenges. Without a focus on sustainable development and the use of green finance along the BRI, the world is at risk of dramatically compounding its environmental risks. Greening the BRI is a global priority.

When the Taskforce last met, Greening the Belt and Road was a key priority. In *Turning Green Momentum into Actions,* a range of barriers around the finance and delivery of BRI projects were identified. A way forward was also identified: a pan-BRI country approach for financial and economic sustainability.

The report highlighted the role and importance of Multilateral Development Banks (MDB's) to cover early stage risks, and the vital need for them to crowd in private capital. It proposed that scaling up risk mitigation products and expanding participants, including geopolitical risk, and standardizing green finance standards would create both clarity and focus for investors. The proposed goal in this report was the eventual creation of a market for green BRI financial instruments, which would result in more opportunity to price BRI projects at all phases, and lower financing costs. As an accelerator for this activity, the report recommended establishing a Green Belt and Road Investor Alliance to take forward more detailed work on making green investment in the BRI more efficient.

In November 2017 the Green Belt and Road Investor Alliance (GBRIA) was established to convene this platform of investors to move forward more detailed industry-led work. The remit of the GBRIA was referenced in the 9^{th} UK-China Economic and Financial Dialogue in 2017. Since establishment, membership includes approximately 50 international organisations with a declared commitment to supporting sustainable investments along the length of the Belt and Road Initiative.

GBRIA has identified three priority workstreams:

1. Harmonising green investment principles across the Belt and Road
2. Driving capital efficiency to mobilise private capital for green Belt and Road investments
3. Developing a roadmap to share sustainable infrastructure knowledge along the BRI.

The first workstream has been the priority. The key challenge identified across BRI countries and projects has been inconsistent standards and definitions of green financing. Not only does this create problems for investors, but it also ensures the BRI is not living up to its potential as a transition pathway to a low carbon future. Given the increasing urgency of transition stressed in the IPCC's October 2018 report, and the scope for emissions reduction along the BRI countries, a clear articulation of green investment principles for the Belt and Road has become an important tool for financiers and project owners alike.

HARMONISING GREEN INVESTMENT PRINCIPLES

In order for the world to achieve the goals of the SDGs and Paris Agreement, infrastructure built, redeveloped and deployed along the Belt and Road must be sustainable. It is therefore important to have a set of green investment principles to align the investment decisions of financial institutions in the BRI. Full alignment of green investment across BRI countries and projects would be a huge contribution towards a below 2°C future and set a standard for others to follow.

Embedding the principles of sustainable development across all asset classes, financial products, project phases and participating institutions is critical for the shared interest of project developers, sponsors, investors, and host communities. That's why the UK-China Green Finance Taskforce has taken the lead to develop Green Investment Principles for the Belt and Road (GIPs).

The GIPs outline voluntary principles for financial institutions and corporations on their journey to embed environmental friendliness and climate resilience into Belt and Road projects, and to meet the goals of the United Nations 2030 Agenda for Sustainable Development and the Paris Agreement. In addition, a common agreement spanning investments along the BRI to maintain a strong environmental priority will contribute to the efficient deployment of capital across public and private investors and avoid the development of stranded assets.

The principles were developed with contributions from Tsinghua University, the Principles for Responsible Investment (PRI), Sustainable Banking Network, Belt & Road Bankers Roundtable, Green Belt and Road Investors Alliance, World Economic Forum, and the Paulson Institute.

Principle 1 and Principle 2 are designed to encourage signatories to incorporate sustainability and ESG factors into corporate strategies and management systems, aiming to call for systematic implementation starting from the highest level and throughout the whole organization whenever possible.

Principle 3 and Principle 4 focus on communication with stakeholders at the operational level. Specific measures that signatories could take to contain environmental and social risks include environmental risk analysis, information sharing and conflict resolution mechanisms.

Principles 5 to 7 are set to encourage signatories to utilize cutting-edge green financial instruments and green supply chain practices, and to improve organizational capacity through knowledge sharing and collective actions.

The GIPs have been developed based on the shared principles of existing responsible investment initiatives, such as the Equator Principles, the Principles for Responsible Investment, and the Environmental Risk Management Initiative for China's Overseas Investment. They are entirely consistent with, and complementary to these initiatives. Indeed, the Taskforce envisages many future signatories will actively participate in these initiatives. However, the GIPs have been designed to address challenges specific to the BRI.

For this reason, the GIPs have three unique characteristics:

1. The GIPs are not limited to financial institutions (banks, institutional investors, funds, etc.). They will deliberately include corporations, because it takes both to effectively manage environmental and social risks.

2. The GIPs will explicitly focus on countries covered by BRI spanning across Asia, Europe and Africa. This will ensure implementation and progress remain grounded in issues of practical importance to those operating along the Belt and Road.

3. The GIPs have an exclusive environmental and sustainability focus, covering ESG issues, environmental information disclosure, green financial instruments, and green supply chain management.

GREEN INVESTMENT PRINCIPLES FOR THE BELT AND ROAD

Principle 1:
Embedding sustainability into corporate governance

We will embed sustainability into our corporate strategy and organizational culture. Our boards and senior management will exercise oversight of sustainability-related risks and opportunities, set up robust systems, designate competent personnel, and maintain acute awareness of potential impacts of our investments and operations on climate, environment and society in the B&R region.

Principle 2:
Understanding Environmental, Social and Governance Risks

We will strive to better understand the environmental laws, regulations, and standards of the business sectors in which we operate as well as the cultural and social norms of our host countries. We will incorporate environmental, social and governance (ESG) risk factors into our decision-making processes, conduct in-depth environmental and social due diligence, and develop risk mitigation and management plans, with the help of independent third-party service providers, when appropriate.

Principle 3:
Disclosing environmental information

We will conduct analysis of the environmental impact of our investments and operations, which should cover energy consumption, greenhouse gas (GHG) emissions, pollutants discharge, water use and deforestation, and explore ways to conduct environmental stress test of investment decisions. We will continually improve our environmental/ climate information disclosure and do our best to practice the recommendations of the Task Force on Climate-related Financial Disclosure.

Principle 4:
Enhancing communication with stakeholders

We will institute stakeholder information sharing mechanism to improve communication with stakeholders, such as government departments, environmental protection organizations, the media, affected communities and civil society organizations, and set up conflict resolution mechanism to resolve disputes with communities, suppliers and clients in a timely and appropriate manner.

Principle 5:
Utilizing green financial instruments

We will more actively utilize green financial instruments, such as green bonds, green asset backed securities (ABS), YieldCo, emission rights-based financing, and green investment funds, in financing green projects. We will also actively explore the utilization of green insurance, such as environmental liability insurance and catastrophe insurance, to mitigate environmental risks in our operations.

Principle 6:
Adopting green supply chain management

We will integrate ESG factors into supply chain management and utilize international best practices such as life cycle accounting on GHG emissions and water use, supplier whitelists, performance indices, information disclosure and data sharing, in our investment, procurement and operations.

Principle 7:
Building capacity through collective action

We will allocate funds and designate personnel to proactively work with multilateral organizations, research institutions, and think tanks to develop our organizational capacity in policy implementation, system design, instruments development and other areas covered in these principles.

RECOMMENDATIONS

The Taskforce is delighted to present the Green Investment Principles for the Belt and Road and support the shared future for common prosperity they represent. However, defining the principles is only the first step in the journey to green the Belt and Road. To ensure the GIPs deliver on their promise, urgent action must be taken to embed them into the structure of the BRI.

Recommendation 1

To advance the implementation of the GIPs in 2019, a Secretariat should be established. The GFC, GFI and GBRIA should work together to form the core of the Secretariat. The Secretariat should be based on the successful models underpinning the PRI and the Equator Principles.

The near-term focus of the Secretariat should be on raising awareness of the principles and expanding the membership (signatories) of the GIP. We expect the membership to include major lenders and investors that invest in the Belt & Road region, as well as large corporates that operate in the region.

Recommendation 2

The GIPs Secretariat should prepare operational guidance and toolkits for implementing the principles. This will require articulation of expectations for each principle, and practical adoption advice.

The Secretariat should work closely with founding signatories to the GIPs to pilot implementation approaches and support them to overcome practical challenges. The Secretariat should curate implementation lessons for companies in similar sectors or investment classes. Over time, they should develop knowledge libraries accessible to new signatories.

The Secretariat will organize workshops and forums in the UK, China and other BRI countries, with the aim of celebrating and sharing best practices.

Recommendation 3

Another key function for the Secretariat will be to measure progress against the objectives of the GIPs. This accountability will be necessary to driving improved outcomes. Comparable secretariats have developed annual reporting tools they use to survey signatories. Signatories receive individual results, and aggregate scores are publicised as a measure of progress. Many secretariats also commission reviews at key milestones to independently verify progress.

The Secretariat should report on implementation progress 12 months after the formal launch of the GIPs.

CHAPTER 2

ACCELERATING GREEN SECURITISATION IN CHINA

Securitisation of green assets – the act of aggregating green loans into a bond format – would accelerate the development of Chinese green finance by fostering green investment growth within the Chinese institutional investor market.

The potential of green asset-backed securities (green ABS) was a key focus of *Turning Green Momentum into Actions*. Because green ABS bonds are rated, transparent, lower risk[1] and liquid, they meet most of the key investment preferences of Chinese insurance companies and pension funds. The development of domestic denominated green ABS could act as the first step towards an attractive investment product for international institutional investors[2] that would increase liquidity for green investments in China.

Green ABS at scale could bring many benefits to the ecological development of China. As a result, the Chinese government has formulated many policies and regulations to promote and direct the development of green ABS. On 15 December 2015, the People's Bank of China (PBOC) made the *Announcement on Matters concerning the Issue of Green Financial Bonds in the Interbank Bond Market*,[3] marking the beginning of green financial bonds policy. Following the announcement, seven departments including the PBOC jointly issued the *Guiding Opinions on Establishing a Green Finance System*[4] to implement the spirit of the ecological civilization construction, emphasizing the importance of mobilizing the green financial system.

The Chinese and international green bond markets offers great potential for green ABS. Green industries need large investment and long recycling periods. ABS financing is be based on the current and future cash flow of underlying assets such as loans to solar farms and water treatment plants. Many of these assets provide stable and long-term financial support to the green industry that currently may not be well-funded or if it is needs to be accelerated. Moreover, the ABS structure also provides a well-tested platform for aggregating small loans that could present great opportunities for small and medium enterprises to access green finance and at lower costs.

Green ABS allow bespoke, illiquid and unrated bank loans to be structured into highly rateable products. Having the pool of cash flowing loans as collateral for the green ABS bonds is a key advantage over unsecured green bonds, where some issuers struggle with lower credit quality. Through green ABS, agencies could rate the bond by assessing the cash flows and credit quality of a diverse pool of green projects and tranching the issued debt to meet investor yield and risk preferences.

Through ABS financing, the funds flow directly from the source to the designated green projects, which improves the efficiency and accuracy of

1 PBOC data have demonstrated sustainable loans perform better than non-sustainable loans
2 The Bank of China issued the first green asset supported covered bond on the London Stock Exchange in 2017. The bond was oversubscribed and provided the BoC to access new investors and liquidity from international institutional investors. This could be done in China with international investors accessing the green ABS through BondConnect.
3 https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/PBOC-Announcement-No-39-2015.pdf
4 http://en.pkulaw.cn/display.aspx?cgid=aeb1b1e5859aa2fabdfb&lib=law

resource allocation and matches the diversified needs of both investment and financing.

Lastly, the majority of the green projects financed in China are supported by domestic banks in the form of loans that are retained on bank balance sheets. Should Chinese banks aggregate and sell these loans in the form of green ABS on the China Interbank Bond Market (CIBM), they could *recycle the proceeds from the sale, invest them into new green projects and drive green and sustainable growth.* Some enterprises use Special Asset Management Plans (SAMPs) to issue asset backed securities (Corporate ABS) on stock exchanges. Other non-financial enterprises choose to issue Asset Backed Medium Term Notes (ABNs) on CIBM. Finally, by selling the loan assets, Chinese banks will also be able to de-lever and replenish their balances sheets.

Over the past 12 months, the green securitisation working group has been reviewing the impediments to the mainstreaming of green ABS in China. A practical roadmap has been developed to draw out the transformative potential of green ABS to finance China's sustainable aspirations. The analysis starts with the regulatory landscape for green ABS issuance. It then considers structural features of green ABS. It concludes by charting the possible evolution of the green ABS market in China.

REGULATORY LANDSCAPE FOR SECURITISATION

As with all financial products, understanding and complying with regulatory frameworks and obligations is essential to success. This is particularly true when looking to develop a new product like green ABS and especially important in a fast-evolving regulatory landscape such as China.

China has four segregated ABS markets which are subject to different regulatory regimes comprising of administrative rules or circulars issued by the regulators, respectively on an individual basis. Green ABS also falls into these four categories:

1. The credit asset-backed securitization (Credit ABS) issued by banks and non-banking financial institutions through special purpose trusts (SPTs) on the CIBM – regulated by People's Bank of China (PBOC) and China Banking and Insurance Regulatory Commission (CBIRC).[5]

2. Corporate asset-backed securitization (Corporate ABS) issued by enterprises through special asset management plans (SAMP) mainly on stock exchanges – regulated by China Securities Regulatory Commission (CSRC).

3. Asset-backed medium term notes (ABN) issued by non-financial enterprises through special purpose trusts or special purpose

5 The China Banking Regulatory Commission has merged with the China Insurance Regulatory Commission to form the China Banking Insurance Regulatory Commission ("CBIRC").

companies on the CIBM – regulated by National Association of Financial Market Institutional Investors (NAFMII), a self-regulatory organisation.

4. Asset-backed plans (ABPs) issued by insurance asset management companies on insurance exchanges – regulated by the CBIRC.

Originator approvals

In China, the regulatory framework for ABS is complex. Credit ABS, corporate ABS, ABN and ABPs are regulated by various regulators, and apply different regulations in terms of approval and registration/filing. Continued simplification and consolidation of regulatory rules and entities will help to advance green ABS volumes in China.

For credit ABSs, banks and non-banking financial institutions need to apply to the CBIRC for approval as securitization originator qualification in order to carry out securitization transactions. Entities without originator qualifications are not allowed to issue asset-backed securities.

Corporate ABS originators need to meet the following conditions if the originator's business operation may have a significant impact on the SAMP or the interests of asset-backed security investors:

1. Its business operations comply with laws, administrative regulations, and its bylaws (in the case of a company) or internal rules (in the case of an enterprise or a public institution).
2. Its internal control rules are sound.
3. It is able to maintain continuous operation and faces no significant operating risk, financial risk or legal risk.
4. It has not materially breached the contract, disclosed any false information or committed any other serious violation of laws or regulations in the last three years.
5. Other conditions as set out by any law or administrative regulation or the CSRC

Qualified ABN originators have to be non-financial enterprises.

For insurance ABP, originators should fulfil the following conditions:

1. They shall maintain sustainable business operation, and shall not have significant business risk, financial risk, or legal risk.
2. Their production and management shall comply with the provisions of the laws and regulations, and bylaws, as well as the national industrial policies.

3. They shall have not materially breached contracts or seriously violated laws or regulations in the most recent three years.
4. Other conditions as specified by laws and regulations, and the CBIRC.

Trust companies as issuers for credit ABSs and securities companies as issuers for SAMPs need to obtain issuer qualification in order to originate securitization transactions. Trust companies for credit ABSs have to be approved and qualified by the CBIRC. Securities companies or subsidiaries of fund management companies for SAMPs should be approved and qualified by the CSRC.

Registration and filing

Credit ABS issuance is subject to the registration and filing system. For banks and non-banking financial institutions with securitization originator qualification and trustee institutions with issuer qualification which have issued asset-backed securities, they can apply for the filing with the CBIRC and registration with the PBOC to issue asset-backed securities within the valid filing and registration period.

For corporate ABSs, the manager of the SAMP scheme should file with the Asset Management Association of China (AMAC) five business days after the establishment of the SAMP scheme and meanwhile copy the same to the local office of the CSRC with territory-based regulatory jurisdiction over the administrator of the SAMP scheme. There is no requirement to apply for the CSRC approval for the issue.

ABN issuance only needs to apply for registration with NAFMII and a single registration period shall be valid for two years.

For insurance ABPs, the initial ABP shall be approved by the CBIRC in advance. Subsequent similar plans can be reported to the CBIRC after issuance.

Legislative framework

China has no codified statues to regulate securitization. Nevertheless, different authorities have issued administrative rules or circulars on an ad hoc basis in relation to securitization transactions, carried out under various structures to ensure the efficiency and transparency of the securitization market. The PBOC, CBIRC, CSRC are the main regulatory authorities with oversight over securitization transactions in China. The two self-regulatory organisations, AMAC and NAFMII, also issue self-regulatory rules related to securitization issuance.

The major regulations related to credit ABS include the Administration of Pilot Projects for the Securitization of Credit Asset Procedures[6] (the “Pilot Measures”), the Measures for Supervising and Administration of

6 http://www.cbrc.gov.cn/EngdocView.do?docID=1340

the Pilot Securitization of Credit Assets by Financial Institutions,[7] the Announcement on Matters concerning the Disclosure of Information of Underlying Asset Pool in the Securitization of Credit Assets.[8]

Corporate assets securitizations are carried out under the SAMP structure and regulated by the CSRC. The CSRC implemented such measures through a circular — the Customer Asset Management Business of Securities Companies Trial Implementation Measures Circular[9] (the "Securities Companies Circular") which came into effect on 1 February 2004. In November 2014, the CSRC issued the Administrative Provisions on the Asset Securitization Business of Securities Companies and Subsidiaries of Fund Management Companies. This framework is technically broad enough to cover credit assets generated by all corporate entities (including CBIRC regulated financial institutions).

ABN is a new financing instrument for non-financial enterprises in China, created by NAFMII. Non-financial enterprises can directly issue ABN on the CIBM in accordance with the Guidelines on Asset-backed Commercial Papers for Non-financial Enterprises on the CIBM (the "Guidelines") issued by NAFMII, marking the start of the ABN. The Guidelines try to expand the qualified originators for the CIBM by including non-financial enterprises and by including non-credit assets.

With respect to the ABPs issued by insurance asset management companies, CBIRC issued the Notice of the China Insurance Regulatory Commission on Issuing the Interim Measures for the Administration of Asset Support Plans in 2015.[10]

However, the current legislation relevant to securitization only, comprises of lower-level departmental rules and circulars. Being civil law legislation, it is of great significance to have a securitization scheme codified in statute to ensure its clarity and certainty. Under current regulation, there are problems with conflicts between lower-level departmental rules and circulars and higher-level laws, lack of sufficient legal definitions, and segregated legal and regulatory regimes.

To specifically promote Green finance, China has recently enacted several regulations:

- Announcement No. 39 [2015] of the People's Bank of China — Announcement on Matters concerning the Issue of Green Financial Bonds in the Interbank Bond Market

- Notice of the General Office of the National Development and Reform Commission on the publishing of the Guidance of Green Bond Issuance.

7 http://www.fdi.gov.cn/1800000121_39_535_0_7.html
8 http://www.nafmii.org.cn/ggtz/gg/201505/t20150515_42085.html?
9 http://www.csrc.gov.cn/pub/csrc_en/openingup/relatedpolices/QDII/201211/t20121109_216706.html
10 http://en.pkulaw.cn/display.aspx?cgid=256931&lib=law

- Guiding Opinions of the China Securities Regulatory Commission on Supporting the Development of Green Bonds Announcement of the National Association of Financial Market Institutional Investors No. 49 [2014]—on Issuing the Guidelines for the Green Financing Instruments of Non-financial Enterprises and the attached Forms.
- Notice of the People's Bank of China on Issues concerning Strengthening the Supervision and Administration of the Duration of Green Financial Bonds.

Currently, most of the regulations address corporate green bonds and there are only a few that relate more specifically to Green ABS. Therefore, green ABS issuance needs to rely on the above regulations on general ABS products in conjunction with those of green bonds. As green and sustainable investments and financial products such as green ABS grow in China, future regulatory evolution could open this product to international investors, cross border sales and multiple currencies.

Green ABS must currently comply with the segregated regulatory regimes, which increase make it difficult for international investors to understand the investment in ABS in China. Hence, this chapter proposes a unified legal framework for all Green ABS securitization which could be implemented by the various regulators.

Furthermore, in the future a codified law which specifically provide detailed regulation on ABS should be promulgated and referred to when dealing with Green ABS issues. For example, Japan is also a civil law country, but it already has its own codified law for ABS. It has amended a number of related laws, such as the Banking Law, the Securities Exchange Law, the Income Tax Law, and the Insurance Law, to clearly determine that asset securitization products are marketable securities. Further, they have established a good institutional foundation for the transfer of debt assets, the issuance and trading of asset securitization products, and related accounting and tax issues.

In the future, the Chinese authorities could require impact reporting to be included in the documents provided in the process of registration or filing. Since green finance is usually long-term, impact reporting can provide a better view of pricing and the value of green ABS to potential investors and enhance their confidence in green investment.

Green ABS in China should be on a level playing field locally. As a comparatively new product, green is facing obstacles in capital treatment. For example, global insurance companies can be penalised for buying non-standard ABS products, which may affect the insurance companies' investments in green ABS. Under China's new regulation on securitization, it is also of great significance to transfer non-standard asset to standard assets. Future regulatory evolution of green ABS could help to solve this problem by requiring more disclosure of information, imposing stricter rules to ensure the control of risk, and/or providing more support from government.

RECOMMENDATION 1

PBOC should draft a unified legal framework for all Green ABS securitization which could be implemented by the various regulators. Furthermore, in the future a codified law which specifically provides detailed regulation on ABS should be promulgated and referred. As an interim measure, continued simplification and consolidation of regulatory rules and entities will help to advance green ABS.

Streamlining the regulatory barriers to green securitization will help overcome the barriers inhibiting green ABS issuance. This would see green ABS reclassified as a standard investment to attract lower capital requirements, removing the higher risk weighting they currently attract. In turn, this should help attract investment from international institutions such as pension funds and insurance companies.

GREEN ABS TRANSACTION STRUCTURE

There are some key structuring activities that must take place to assure a green ABS will succeed in the market. Not only must the bond comply with all regulatory requirements, they must also be designed in a way to attract investors. We only describe the credit ABS transaction structure in this section.

EXHIBIT 2.1: GENERAL TRANSACTION STRUCTURE OF SECURITIZATION IN CHINA (SIMILAR TO INTERNATIONAL STRUCTURE)

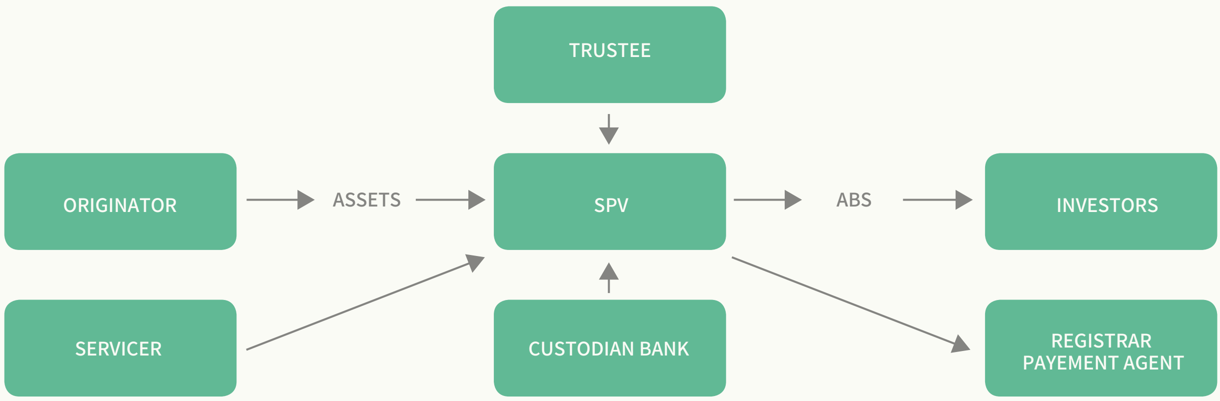
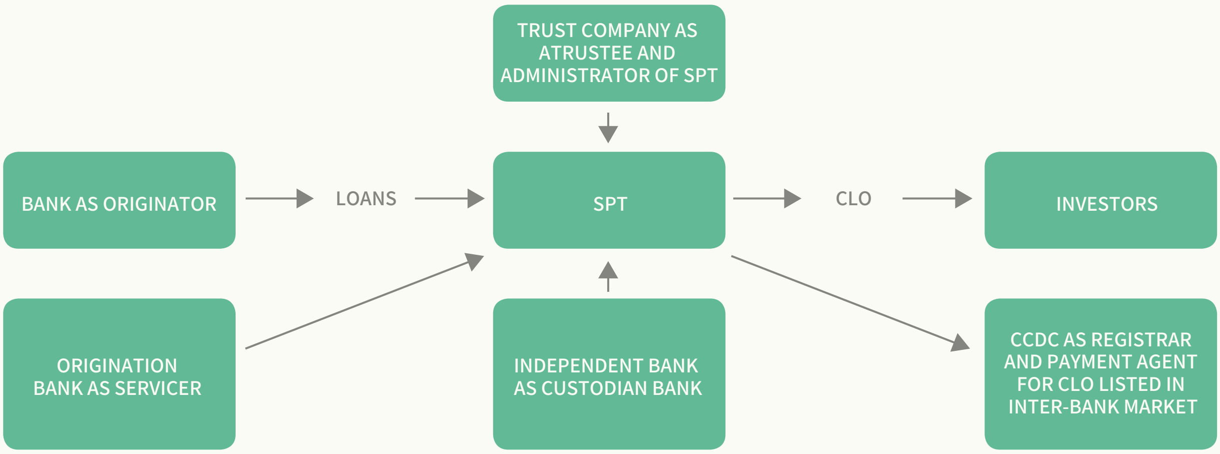


EXHIBIT 2.2: TYPICAL CLO TRANSACTION STRUCTURE IN CHINA



Asset backed securities, at their most basic, aggregate assets such as mortgages, car loans, credit card receivables and infrastructure loans into a legal entity that pools the cash flows from the assets to pay the coupon payments of the bond. However, for green ABS to succeed, not only do the assets need to be of good credit quality, it is also essential for investors to have confidence in the green credentials of the aggregated assets.

Firstly, the ABS need to be defined as "green". The *Guiding Opinions of the People's Bank of China, the Ministry of Finance, the National Development and Reform Commission, and other Departments on Building a Green Financial System* defines the term "green" with a wide scope. Any economic activities supporting the improvement of environment, responding to climate change, and conserving and efficiently using resources belong to the scope of "green". This definition is now the norm for a green investment. Therefore, banks must ask a third-party to review the assets and validate compliance with Chinese green definitions. This validation process is called green tagging. If the assets are not validated, it leaves the security open to being accused of being greenwashed, a term used for green investments that are not as green as claimed. There has been a big uptick in green tagging, especially in the mortgage space in Europe that have provided investors with confidence in the green integrity of the assets.[11]

A green ABS, like most bonds, has highly standardised documentation, a public rating and the ability to be bought, sold and traded on public markets. The bonds often have tranches that have different risks, ratings and coupons that can be tailored to investors' preferences. Early evidence is beginning to mount that green assets perform better and default less than "brown assets". If this correlation is supported with

11 https://hypo.org/app/uploads/sites/2/2018/03/Green_Tagging_Mobilising_Bank_Finance_for_Energy_Efficiency_in_Real_Estate_3222151.pdf

further data, the ability to increase AAA rated tranches on green ABS could increase, providing attractive investments for institutional investors.

Asset based securities are flexible by nature, therefore, as new green assets such as green infrastructure or green Belt and Road loans are originated, it is possible for ABS structures to be developed to meet these green investment needs.

RECOMMENDATION 2

International credit rating agencies, in conjunction with leading universities, should lead a programme of work to collate data on the performance of green ABS in comparison to other types of securitisation, to demonstrate lower default rates and therefore to be rated of sufficient quality to attract international investors.

GREEN ABS MARKET DEVELOPMENT

Asset based securities are a well-known financial product in China. And recently, Green ABS is leading a new investment trend.

EXHIBIT 2.3: CHINA GREEN BOND AND GREEN SECURITIZATION MARKET DATA

ISSUANCE AMOUNT			
BILLION CNY	DOMESTIC GREEN BOND	DOMESTIC GREEN SECURITIZATION	OVERSEAS GREEN BOND
2016	198.53	6.7	26
2017	189.86	14.6	44.2
2018 H1	590.6		
NUMBER OF ISSUANCE			
2016	50	4	7
2017	103	10	10
2018 H1	49		

Data Source: greenfinance.xinhua08.com

EXHIBIT 2.4: CHINA GREEN BOND ISSUANCE ONSHORE AND OFFSHORE INCLUDING PANDA BOND

	ISSUANCE SIZE			NUMBER OF ISSUANCE		
	BILLION CNY	BILLION USD	% OF WORLD	ONSHORE	OFFSHORE	TOTAL
2016	238	36.2				
2017	248.6	37.1		113	5	118
2017 meets International Definition	154.3	22.9	15%			
2018 H1	84.4	13				
2018 meets International Definition	60.8	9.3	12%			

Data Source: China Green Bond Market reports by Climate Bonds Initiative in partnership with China Central Depositing and Clearing Co. (CCDC)

EXHIBIT 2.5: CHINA GREEN SECURITIZATION ISSUANCE

	BILLION CNY	BILLION USD	NUMBER OF ISSUANCE
2018 Q2	4.18	0.66	5
Up to 2018 Q1	99.18	2.6	15

Data Source: China Green Bond Market reports by Climate Bonds Initiative in partnership with China Central Depositing and Clearing Co. (CCDC)

Since the beginnings of the market for green ABS in 2016, most ABS deals were issued in the form of ABNs or corporate ABSs. Given the current composition of the Chinese financial sector (with the vast majority of assets held by banks), most ABS are composed of corporate loans and most of the buyers of ABS products are other Chinese banks. To encourage investment into green ABS, regulators may consider giving award to banks who issue or invest in green ABS, i.e. lower risk weight of green assets or special credit conversion factor.

To move long term assets off balance sheet and out of the banking sector, ABS must cultivate new investors. Chinese insurance companies and pension funds are ideal investors in green ABS. This is especially true if ABS was made up of long-term sustainable infrastructure loans such as those to solar farms or waste management facilities. In such cases, these long dated loans within a green ABS would be very well matched to long term liabilities held by these institutional investors. Building the green institutional investor market is important to green economic growth. The Chinese Government is also promoting participation by private sector investors. Therefore, a strong and transparent green market will help build confidence in these products within the Chinese institutional investor community.

On 24 January 2018, the CIRC issued the Measures of Administration of the Utilization of Insurance Funds,[12] under which the principal of utilizing insurance funds, insists on long-term investment, value investment and diversified investment, and insurance funds are allowed to be used to invest in asset securitization products.

There has been a great success with insurance funds supporting green finance. Until the end of July 2018, the amount of investment in green has been over six hundred billion RMB. Green ABS can also provide opportunities for pension funds to invest in national infrastructure construction and major projects relating to people's livelihoods, delivering returns to pension funds and investment in local communities.

Furthermore, improving market infrastructure is also beneficial for driving green ABS. RMB hedge instruments which would merge the onshore CNY and offshore CNH should be developed to boost liquidity and reduce the cost of hedging, particularly in the cross-currency swap market. Improving domestic credit rating practice and transparency in China is also necessary, with respect to appraising companies and the criteria applied for ratings.

Along with the growth of the ABS market, specialized ABS investment funds have developed into an important source of capital – they mainly focus on the mezzanine and even equity tranche of the ABS, which is key to the success of securitization transaction.

A full credit spectrum of investors is important to the development of the Green ABS market. Banks, insurance companies and pension funds are typical senior tranche investors while specialized institutional investors like hedge funds, specialised ABS funds, private equity, etc, are investors in the mezzanine and equity tranches. To promote the investment of Green ABS, government or international climate organizations may consider sponsoring seed capital to setup some specialized green ABS funds.

Foreign investors are now able to invest into domestic green ABS through a bond connect scheme by using RMB or foreign currency. Foreign investors could also hedge the forex risks. As green ABS grows and if it's positive risk adjusted characteristics are further demonstrated, the structure is in place for foreign investors to increase their allocation. See Table 1 for developments in how overseas investors access Chinese bonds.

12 http://bxjg.circ.gov.cn/web/site0/tab7758/info3980761.htm

RECOMMENDATION 3

The GFC and GFI should facilitate a dialogue among Chinese insurers and pension funds about the positive attributes and the potential of Green ABS to match their investment preferences. The dialogue should also focus on the evolution of the regulatory framework.

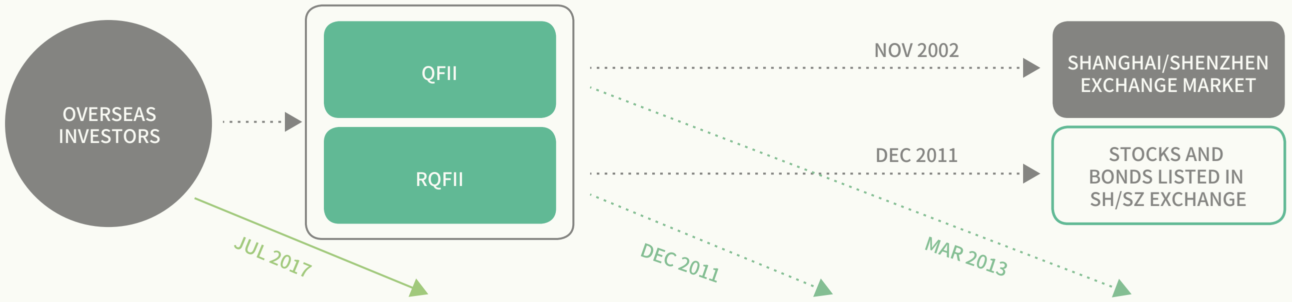
RECOMMENDATION 4

The Chinese and UK Governments, along with MDBs, should consider collaborating on cornerstoning a dedicated green ABS fund, to invest and generate returns, but also to catalyse the market for other institutional investors, and incentivise issuers and originators to structure more green ABS opportunities.

EXHIBIT 2.6: GREEN ABS TRANSFER AND RESTRICTION CHARACTERISTICS BY INTERNATIONAL INVESTOR TYPE

	QUALIFIED FOREIGN INSTITUTIONAL INVESTORS (QFII)	RMB QUALIFIED FOREIGN INSTITUTIONAL INVESTORS (RQFII)	CHINA INTERBANK BOND MARKET (CIBM) DIRECT	BOND CONNECT
FORM OF EXCHANGE	Collect in foreign currency and remit foreign currency inward. Exchange into RMB to invest.	Collect in foreign currency or RMB, exchange into RMB or directly remit RMB inward to invest.	Collect in foreign currency or RMB and remit inward, exchange into RMB in China or out of China	Collection in foreign currency or RMB, exchange into RMB out of China and invest
RESTRICTIONS ON INVESTMENTS	May invest in the following RMB financial instruments: 1. The stocks, bonds and warrants traded or transferred in the securities exchanges; 2. Fixed income products traded in interbank bond market; 3. The securities investment fund; 4. Stock index futures; and 5. Other financial instruments as permitted by the CSRC.	May invest in the following RMB financial instruments: 1. The stocks, bonds and warrants traded or transferred in the securities exchanges; 2. Fixed income products traded in interbank bond market; 3. The securities investment fund; 4. Stock index futures; and 5. Other financial instruments as permitted by the CSRC.	May invest in 1. bond lending, bond forwards, forward rate agreements and interest rate swaps based on hedging needs, except spot transaction of bonds; 2. Fixed income products traded in interbank bond market.	Only may invest in domestic fixed income products traded in interbank bond market.

EXHIBIT 2.7: COMPARISON BETWEEN QFII AND RQFII



	CIBM VIA BOND CONTRACT	CIBM
INSTRUMENT	INITIAL STAGE BONS; LATER STAGE REPOS, CNY DELIVERIES	BONDS, IRS, BOND FORWARDS FOR HEDGEING, CNY REPOS
ACCESS MODEL	OFFSHORE MONEY > ONSHORE ASSETS	ONSHORE MONEY > OFFSHORE ASSETS
TRADING COUNTERPARTIES	TRADE DIRECTLY WITH CFETS DEALERS	TRADE VIA AGENT BANK
APPLICATION PROCESS	SIMPLIFIED	COMPLICATED
QUOTA	NO QUOTA OR ESTIMATED INVESTMENT SIZE	NO HARD QUOTA, BUT WITH STATE INVESTMENT SIZE
TRADING METHOD	ELECTRONIC REQUEST FOR QUOTATIN (RFQ)	PRIMARY VOICE / TRADE CAPTURE
SETTLEMENT METHOD	FOLLOW CMU ARRANGEMENT	GROSS SETTLEMENT, DVP
CUSTODY	NOMINEE STRUCTURE VIA CMU	INDIVIDUAL ACCOUNT

CHAPTER 3

THE PRACTITIONRE VIEW ON ESG INVESTING: WHERE ARE WE AND WHAT’S NEXT?

ESG investing places an emphasis on the positive financial outcome that strong ESG credentials can have on pricing of physical assets, financial securities, cost of capital and investment strategies. An assessment of the financial impact of ESG factors across different asset classes featured heavily in Turning Green Momentum into Actions, the last report from the UK-China Green Finance Taskforce.

That report aimed to promote the benefits of considering ESG factors as financial factors. Several recommendations focused on encouraging market participants to embrace ESG-led investing, and our key conclusion was that ESG factors have a material impact on companies' financial performance and investors' returns, dismissing the historic view held by some market participants that embracing ESG sacrificed returns.

The expansive growth of ESG investing over the past 12 months is a testament to the power of ESG factors, and to the efforts of investors to act on the Taskforce's recommendations. However, as the market for ESG investing has developed, new challenges have arisen.

To keep up with the rapid evolution of the ESG market, it is necessary to analyse the latest state of play of the market and progress being made in ESG-led investing. This chapter will focus on identifying impediments to the implementation of ESG investing strategies. It outlines emerging best practice and innovation, such as ESG integration, ESG engagement, and the potential applications of new technologies.

Capturing the benefits of the growth in ESG investing for the real economy will depend on the actions of market participants. That is why this chapter is explicitly focused on the practical perspectives and needs of investment professionals. We hope they rise to the challenge of ESG investments and actively seek the returns offered by adopting our recommendations.

THE STATE OF ESG INVESTING TODAY

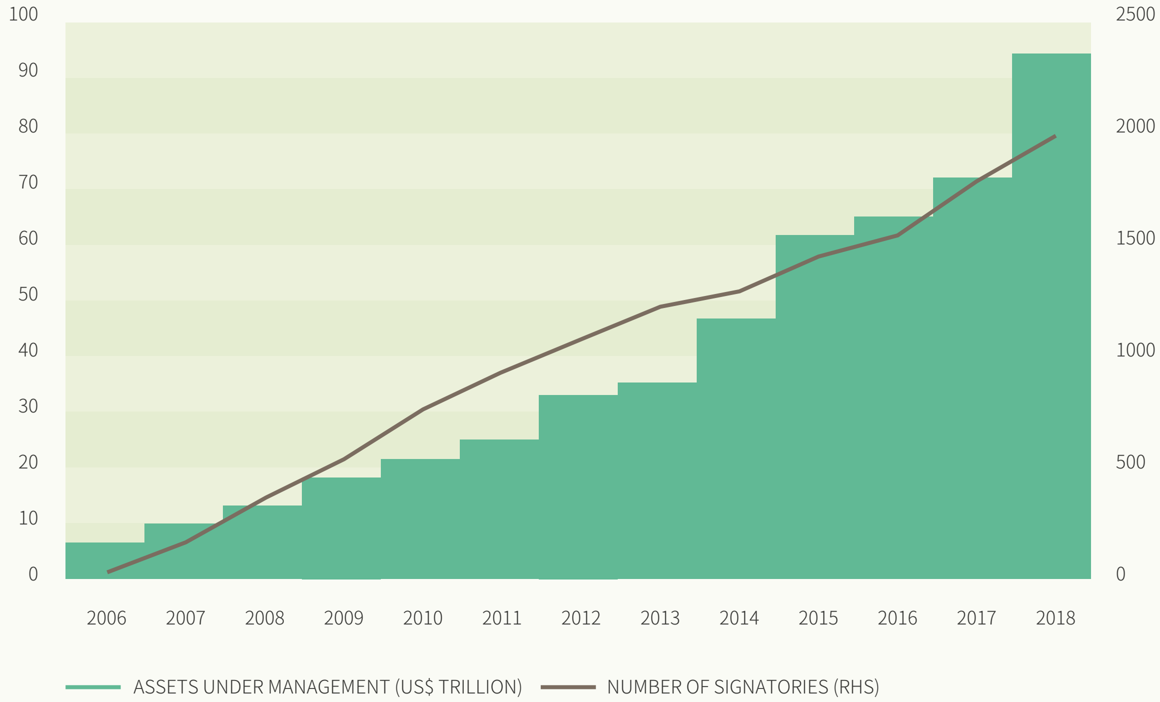
The concept of ESG investing has been around for many years in various forms and guises. It is already a significant field of investment – under broader definitions that include screening strategies it is estimated that circa $23 trillion of AuM globally follow widely defined sustainable investing strategies.[13]

The importance of ESG factors in the context of corporate behaviour and investment management continues to grow, climbing in the agenda of regulators, banks, institutional investors, fund managers, asset owners and associated service providers such credit rating agencies, index providers and market exchanges.

Growth in interest in ESG is evident across a number of metrics, including overall amount of capital being raised and products being launched with an ESG component, increasing number of fund managers and investors signing up to the 'Principles for Responsible Investment' (PRI) and the increase in "ESG chatter" in companies earning calls (ESG is becoming a more front of mind issue for corporates and investors). ESG is well on track to becoming a key feature of mainstream investing.

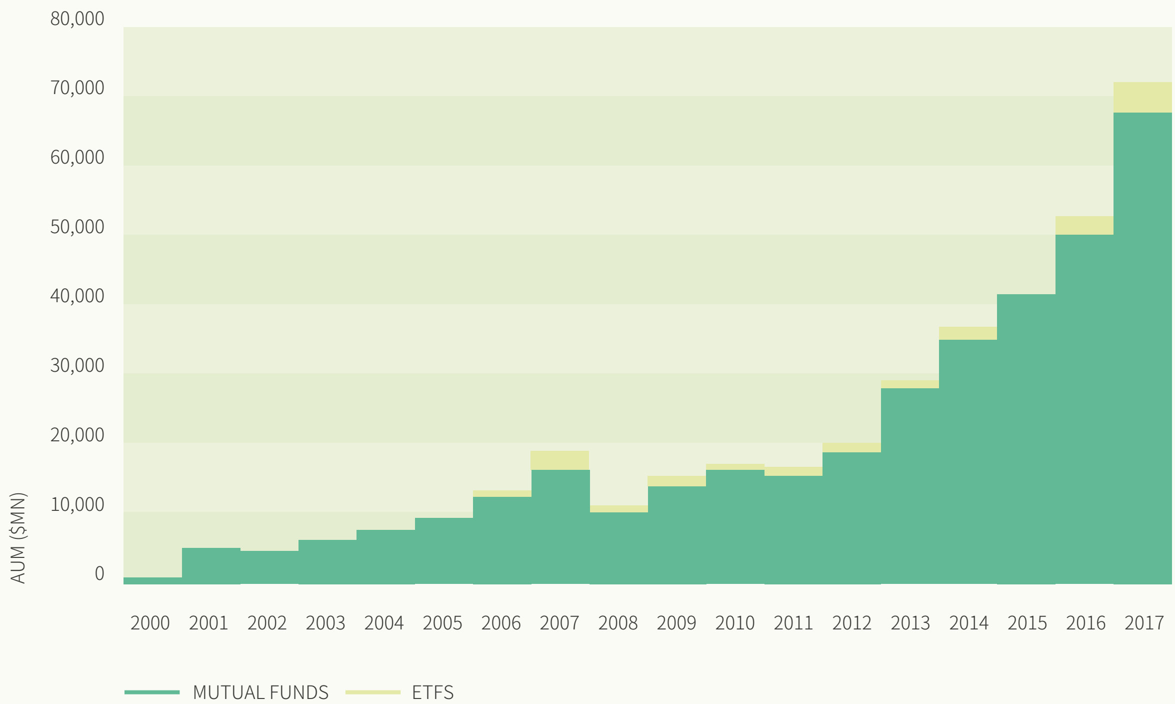
13 "2016 Global Investment Sustainable Review", Global Sustainable Investment Alliance

EXHIBIT 3.1: PRI SIGNATORIES AND AUM GROWTH (2006-2018)



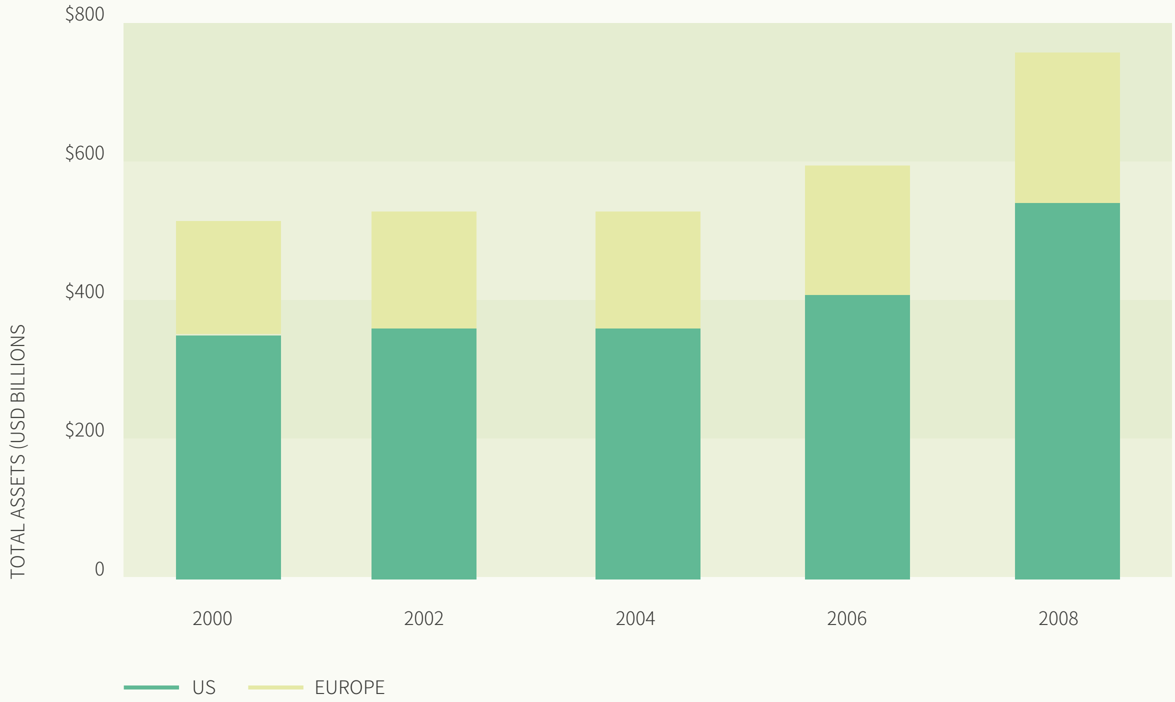
Source: Principles for Responsible Investment website, 2018

EXHIBIT 3.2: ASSETS TIED TO ESG STRATEGIES
TOTAL ASSETS IN U.S.-DOMICILED EQUITY FUNDS WITH ESG STRATEGIES ($MN), 2000-2017



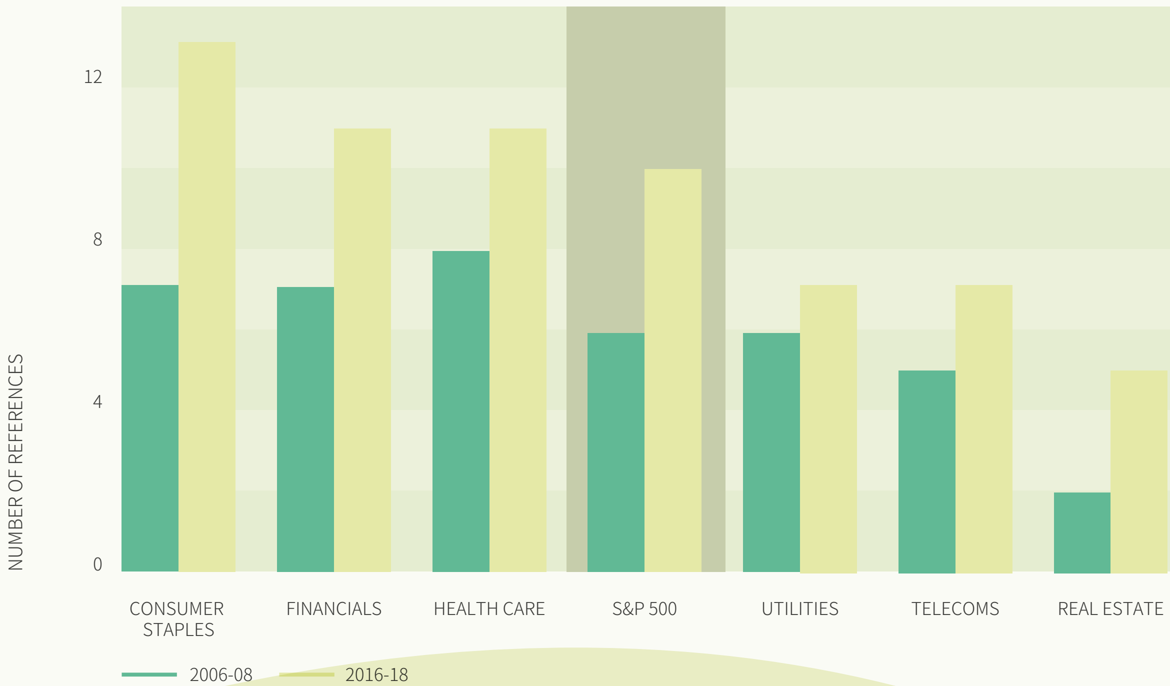
Source: BAML "The ABCs of ESG", September 2018

EXHIBIT 3.3: US AND EUROPEAN ESG FUND ASSETS
GROWING UP: U.S. AND EUROPEAN ESG FUND ASSETS, 2013-2017



Sources: BlackRock Investment Institute, with data from Cerulli Associates, April 2018. Notes: The bars show total U.S. and European assets in ESG mutual funds and exchange traded funds by calendar year. Figures are in U.S. dollar terms.

EXHIBIT 3.4: ESG CHATTER
ESG RELATED TERMS IN U.S. CORPORATE EARNINGS CALLS, 2006-2018



Source: BlackRock "Sustainable Investing: A why not moment" May 2018. Notes: The bars show the average number of mentions of ESG-related terms in earnings calls of S&P 500 companies, based on our analysis of call transcripts. We search for a list of 40 key terms such as "environment", "social" and "sustainable". The top three and bottom three sectors for 2016-2018 mentions are displayed, plus the S&P 500. The 2018 figures are year to date.

ESG IS HERE TO STAY

The data bears out a basic truth – ESG investments are fast becoming a permanent fixture of the market. However, a degree of caution is required in interpreting overall market size, particularly in the context of the USA, where historically a very broad range of basic negative screening strategies where captured in market size estimates. The criteria and definitions used by responsible investing associations in what constitutes sustainable investing is also evolving, and in some cases tightening, which points to a recognition of the need to reassess current estimating methodologies.

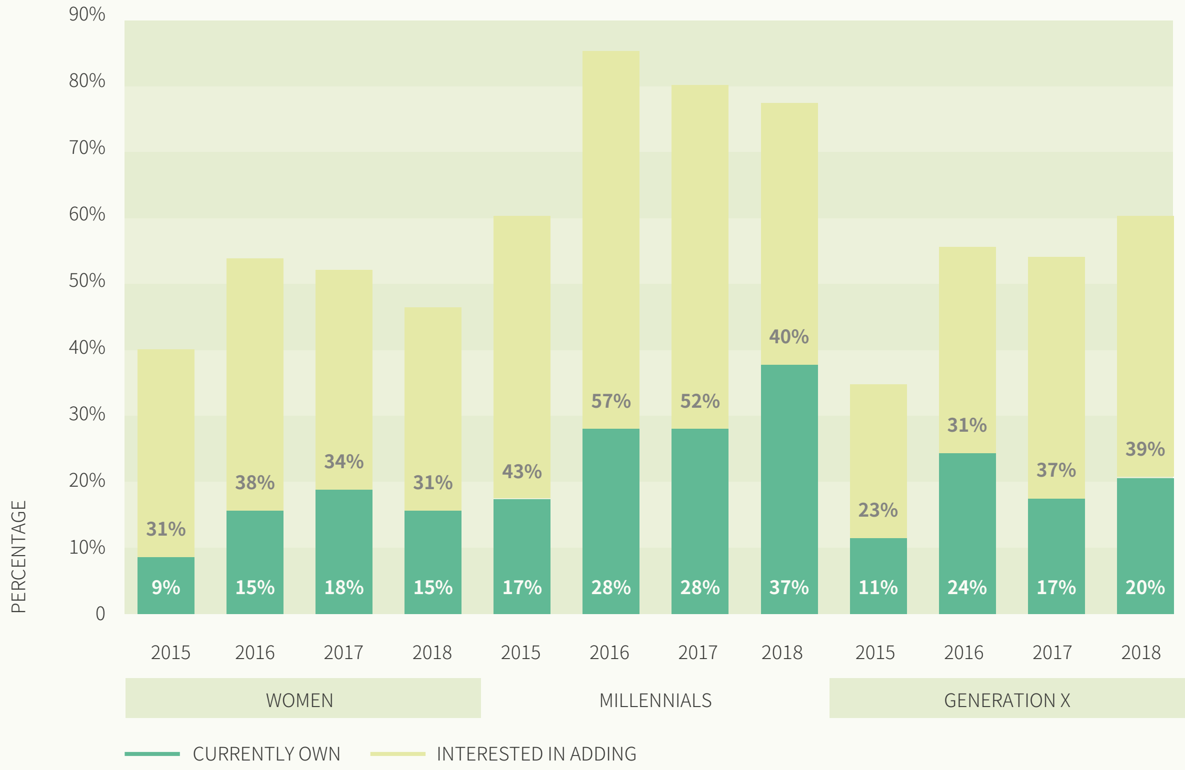
Despite this, there is meaningful momentum in AuM growth, overall interest and the level of sophistication in how sustainability and ESG integration considerations are being incorporated into investment strategies. This suggests that while concerns about the overestimation of market size and green/ESG washing may be justified, that the trend remains positive.

Growth and interest in ESG-led investment practices is expected to continue – driven by asset owner preferences. Growing public interest and cultural awareness of ESG related concepts is leading to the idea that in addition to being profitable, firms should also be responsible corporate citizens. This is influencing real asset owners and driving their appetite for more sustainable investing practices.

Drivers span from the rise of pension beneficiaries increased concern about overall stakeholder value creation to the awareness of the importance of climate change and wanting their capital to play a key role in mitigating it, and overall preference for their capital to make a positive societal contribution.

Ultimately asset owners are increasingly caring about the overall value which includes nonfinancial consequences of their investing (see Exhibit 3.5), and therefore asset managers will need to do something about it, whether they believe in the merits of ESG investing or not. The role and expectations of millennials will be a significant driver in this respect.

EXHIBIT 3.5: MOMENTUM BUILDING FOR IMPACT INVESTING IN BELLWETHER DEMOGRAPHIC SEGMENTS



Source: BAML "The ABCs of ESG", September 2018

The increasing amount of interest from the investor base is also shaping the asset management community and their thinking in terms of ESG, both as a defensive play (not to be singled out from the more ESG-compliant crowd) and as a potential for product innovation strategy to drive their AuM.

In addition to asset owner preferences, three other factors will underscore the continued growth of ESG investing.

The increasing realisation among investment managers that ESG works.

Innovation and product development are rapidly diversifying options available for ESG investments.

Institutional changes weaving ESG investing into the fabric of the market, through the increased involvement of regulators, indices, exchanges and consultants.

ESG INSTITUTIONALISATION IN PRACTICE

China has recently launched its first investable ESG index – the SSE 180 ESG Index – launched by China's ICBC Bank and China's Securities Index Co. Ltd in November 2018. ICBC, China's largest commercial bank by market cap, has built its own in house ESG rating system based on the framework used by international ESG rating agencies and Chinese domestic guidelines. Data is sourced both internally and externally and analysed by ICBC's ESG rating system.

Based on the ESG score of listed companies, 180 stocks have been identified from the Shanghai stock exchange, which now comprise the ESG index. These 180 stocks have performed significantly better than normal SSE 180 index during the same period of time, providing evidence in support of ESG integration in China's market.

KEY CHALLENGES FACING ESG INVESTING

While ESG has strong growth prospects, there remain significant challenges and barriers to adoption. Many of these challenges operate at the market level. However, their persistence may indicate that market participants need support to overcome them. The UK-China Green Finance Taskforce should count these issues as a focus going forward:

Defining ESG: Proliferation of nomenclature is a negative consequence of the increasing importance and debate around ESG. The large number of related terms needing clarification or consistent treatment is somewhat clouding the picture.

Lack of applied knowledge: a significant part of the investor community is not advanced in their understanding of ESG investing and retain a very basic negative screening at most as an approach.

ESG/Green washing: Positive momentum identified partially masks lack of genuine underlying adoption of ESG, or very superficial engagement (e.g. growth data in PRI signatories illustrates interest but, in our experience, most signatories appear to have limited appetite for in-depth engagement or lack the ability and skill set to do so).

To illustrate this issue, we refer to analysis by Blackrock[14], which has, counterintuitively, identified after crunching a decade of MSCI data that firms that boast the most elaborate ESG policies were the worst actors. Publication/number of ESG policies seems to be in many instances a response to a bad ESG outcome, rather than a fundamental shift in behaviour.

14 Blackrock Institute "Sustainable investing, a why not moment?" May 2018

Disconnects between investors and corporates: Corporates still appear to underestimate the significance and importance of ESG to investors. This is evidenced by the many companies conflating CSR with ESG.

Standardising ESG reporting: There is limited consensus of standards of reporting. This leads to a broad range of ratings outcomes and creating data, methodology and comparability issues.

Broad range of ESG investing practices: While there is a degree of diversity, most approaches rely on a single ESG rating/score, which can mask nuances below the surface.

Cost and talent: Deep ESG investing into investment processes can be costly and require finding appropriate talent. Investors might require stronger evidence on ROI across the industry before proceeding to make this investment.

BARRIERS FOR ESG INVESTORS

In addition to these market-level challenges, our review of practitioners highlighted key practical barriers to ESG investment.

We believe these challenges are essential to unlocking the potential of the ESG market and to drive the meaningful changes needed to realise the UN SDGs. The most powerful characteristic of these challenges is that change lies solely in the hands of market participants. These challenges are also forward-looking opportunities.

1. The transparency of investment managers' decision-making process
2. Credible ESG based factor attribution across asset classes
3. Forward-looking value assessment of ESG risks and opportunities, which are distinctly separate to the market beta
4. Global and regional standards regarding issuers' data verification
5. Investment professionals who are directly accountable (through compensation) for the performance of ESG strategies
6. More education of the investment community of the difference between ESG integration as a process to mitigate performance and drive alpha vs impact investing or sector screening
7. Need further product & fund innovations to actively capture alpha from investing in ESG-led thematic opportunities (versus pure risk mitigation)

We dedicate much of the remainder of this chapter to the emerging practitioner-led responses to these challenges. We believe they will reshape the future of ESG investing.

CASE STUDY:
ESG INVESTING IN CHINA

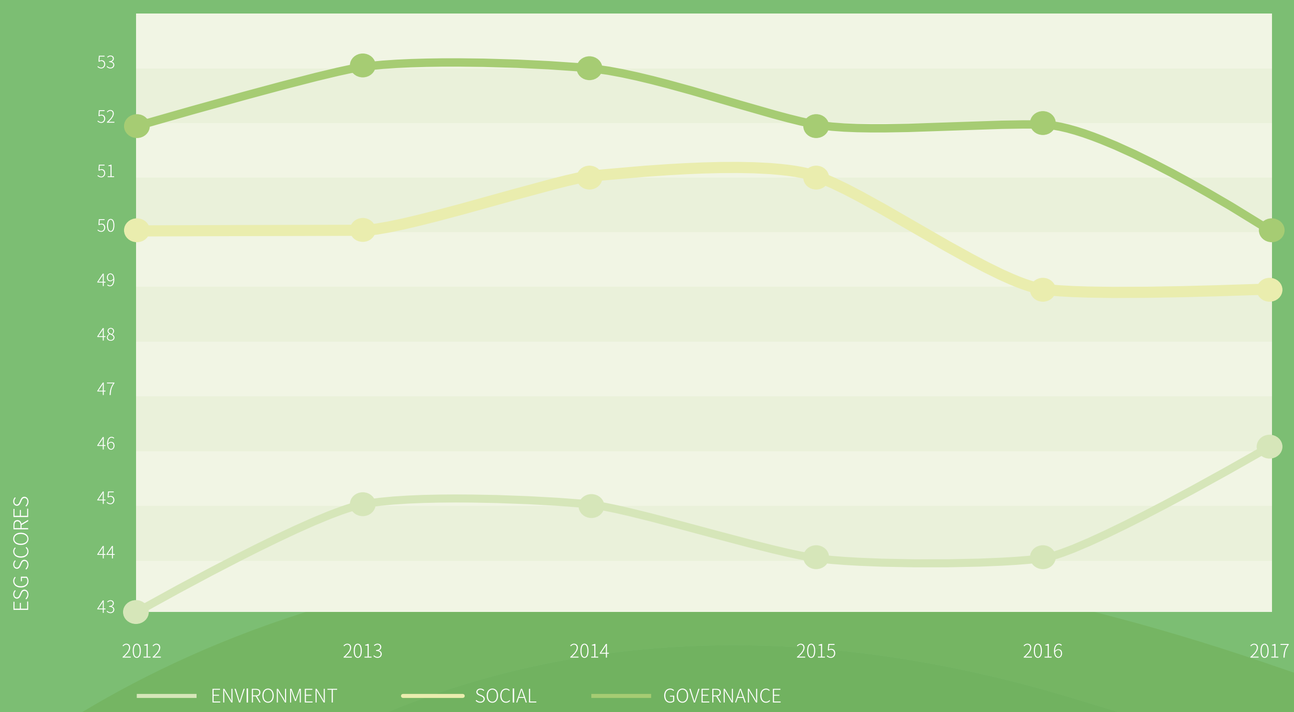
The combination ESG investing becoming increasingly mainstream and the recent plans to include China A shares in the MSCI EM index (currently covering only 5% of A shares by number of companies, but expected to grow to 20% and ultimately 100%) means that global investors have no choice but to pay more attention to how China tackles ESG issues and what progress is being made.

Since 2016, China has introduced the country's top down policy to 'Greening its economic model'. Examples of this at work include:

- Chinese central bank plus six other government agencies jointly issued Guidelines for Establishing the Green Financial System, which provides an essential first step for accelerating the pace of ESG programs in the country
- Chinese regulator (China Securities Regulatory Commission) has introduced mandatory environmental information disclosure for listed companies by 2020 in their annual or semi-annual reports
- The Shanghai and the Shenzhen Stock exchanges have joined the UN Sustainable Stock Exchanges initiative and have shown real commitment for the next phase of China's green development
- China's top Green agenda led by President Xi is also aligned with UN's 17 SDGs (see Appendix 2.3)

The top down policy drive and the above initiatives do seem to help Chinese companies to improve their 'E' score, as can be seen in the table below. However more improved areas are needed across 'S' and 'G' in order to improve the overall score.

EXHIBIT 3.6: CHINESE COMPANIES' ESG SCORES BY CATEGORY



Source: Sustainalytics data

CASE STUDY: ESG INVESTING IN CHINA

Disclosure is helpful, but more is needed on 'material' issues

Lack of disclosure has been identified by many market participants as an area for further improvement in China. Analysis of current reporting by both Chinese and Western companies reveals that many are still tilting towards CSR reports that do not necessarily provide detailed thinking and analysis on material risks and opportunities and how these could impact and/or improve on their business strategy and performance. Lack of quality information could drag down Chinese companies' ESG overall score.

DEMYSTIFYING ESG AND SUSTAINABLE INVESTING

ESG investing is generally defined as the consideration of environmental, social and governance factors alongside financial factors in the investment decision-making process. There is, however, a large and growing number of related and overlapping concepts that risk confusing market participants. ESG, responsible, sustainable, ethical, green, values-based and impact investing are some of the concepts in the growing alphabet soup.

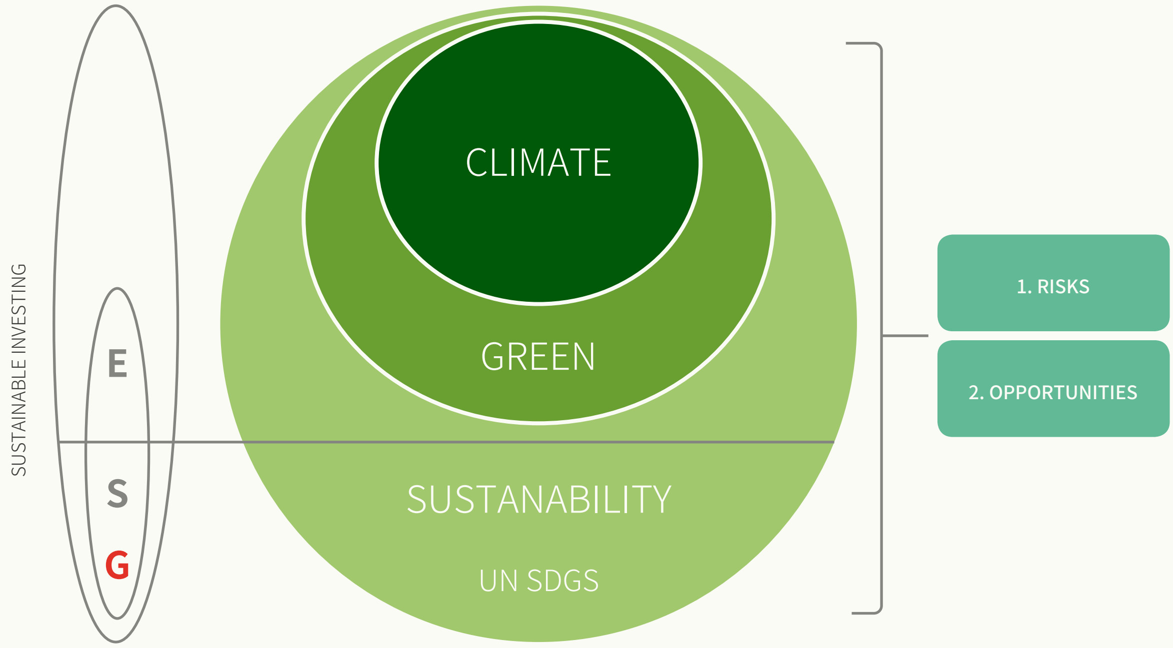
"Sustainability" has become the overarching category that typically captures in market parlance the broadest universe of investable opportunities, and we see it being interchanged frequently with the concept of ESG investing.

In many ways, sustainable investing is also an approach to better understand the long-term sustainability of a company's cash flow, the resiliency of their balance sheet and how the company is responding the world that is changing. Exhibit 3.7 illustrates the various segments that are captured under sustainable investing.

Distinguishing the E from S and G is essential. Environmental – the climate agenda is key and has been the primary driver for ESG development. Investors typically associate climate and wider green investing with the "E" in ESG, with the assumed relevance of social and governance factors growing as the investable universe broadens beyond green. We have also seen the market naturally map the UNDP's 17 Sustainable Development Goals within this sustainability umbrella.

The UNDP Sustainable Development Goals are a game-changer in articulating how the public and private sectors can help to solve the most urgent problems facing the world. They are a critical part of translating the goals of responsible investing from aspirations into tangible risk and opportunity frameworks to help achieve positive real-world outcomes.

EXHIBIT 3.7: SUSTAINABLE INVESTING

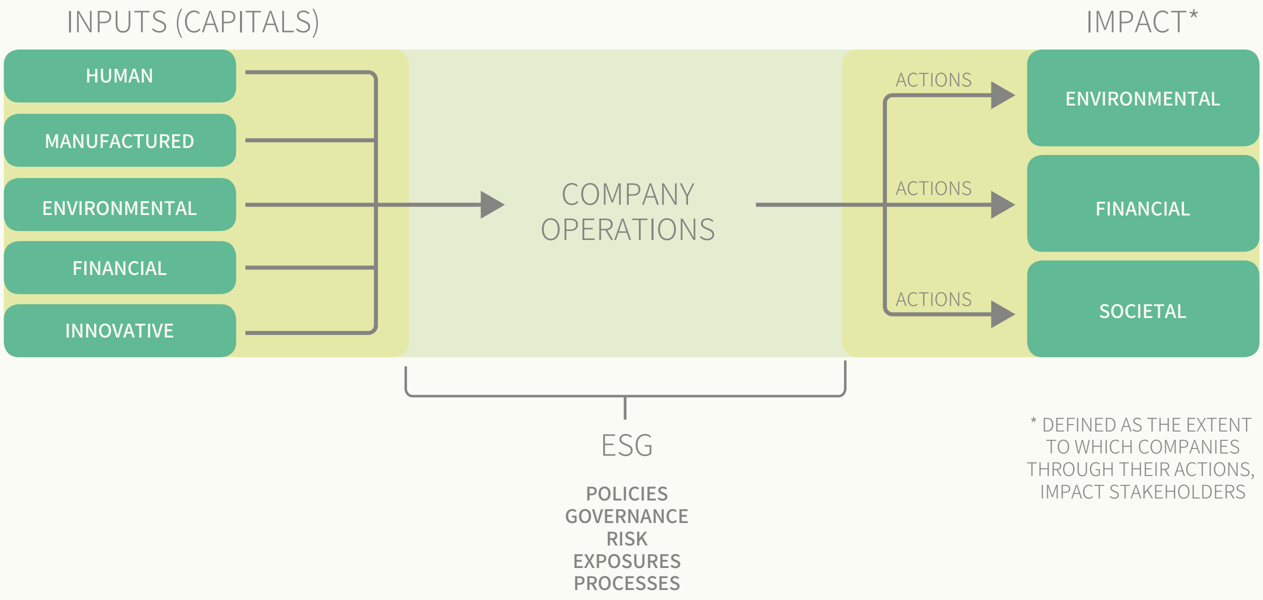


DO NOT CONFUSE ESG INVESTING WITH IMPACT INVESTING

We see a significant degree of confusion in both the investor and fund management community on what counts as ESG, with many automatically assuming ESG investing is a form of impact investing and/or impact driven sector screening rather than a tool or process to drive risk mitigation and alpha generation. By the same logic, many still consider "ESG businesses" to be those that operate in certain "green" or impact-led sectors, rather than businesses that are good at managing their ESG considerations.

It is therefore important to differentiate the role of ESG in optimising an investment process from the impact/outcomes that such process may deliver. The integration of ESG considerations into the investment process focuses on internal company processes and implementation of policies, coupled with analysis on how these considerations and the company might be impacted by broader related market factors. The process will lead to a range of outcomes, both financial and non-financial (see Exhibit 3.8).

EXHIBIT 3.8: INPUTS & ESG PROCESS VS IMPACT



Source: Util

Approaches to ESG and sustainable investing have historically fallen within a few broad categories. The majority of AuM currently defined as sustainably invested in the market falls solely under the first category and is driven primarily by negative screening strategies.

- **Negative/Positive Screening:** Excluding securities of specific activities or industries, or positively selecting companies or countries with better or improving ESG performance relative to sector peers.
- **Integration:** Systematic inclusion of ESG risks and opportunities into traditional investment analysis, portfolio construction and risk management.
- **Thematic:** Investment in themes and assets specifically related to sustainability (for example green energy, green infrastructure, clean technology, energy efficiency, sustainable agriculture, mobility, education, health and development).
- **Impact:** Investment strategy designed to produce measurable financial and non-financial returns.

There are more sophisticated attempts to try to untangle the various types of investing strategies that are typically defined as sustainable investing. According to Professor Cary Krosinsky[15], there are seven different strategies which are captured under sustainable and impact investing, but which are very different in terms of practice and performance (see Appendix 2.1). Asset owners and fund managers often deploy one or combinations of some these strategies.

Fundamentally, there is still a very wide range of approaches by market participants, and we believe this will remain the case whilst there remains no clear picture of what best practice looks like and whilst there is no formalised set of guidelines or expectations from the investor and ratings community.

We do, however, see an emerging number of strategies and funds being raised across both debt and equity adopting more sophisticated integration and thematic strategies, with a "value first" approach, and an increasing amount of evidence linking performance and ESG integration when done more comprehensively and beyond screening.

THE ESG PERFORMANCE DEBATE

Being able to provide more robust evidence linking correlation of returns and ESG performance across asset classes remains the holy grail of sustainable investing. It would be a critical step in driving adoption and providing an even greater boost to growth in AuM. As *Turning Green Momentum into Actions* highlighted, there is an increasing body of evidence and research linking performance to ESG. This analysis remains somewhat hampered by still relatively short data series and there are a number of data biases to account for.

Debates remain around 'Perception versus Evidence'. The investment case for ESG investing is still relatively poorly defined. Despite the deep body of research, most messages remain promotional and often defer to the business case instead of addressing the investment implications. Despite this, our analysis of ESG investing in practice suggests two key trends – investor confidence in ESG is growing, and not all ESG approaches are created equal. Findings include:

Growing Confidence:

- The greater the level of ESG integration the better, but analysis should remain dynamic, forward looking and linked to fundamental broader analysis.
- There is a general recognition that time is our ally, as ESG implementation is likely to bear more fruit over longer horizons and there is an increasing recognition that ESG considerations are likely to increase in importance.

15 "The Seven Tribes of Sustainable Investing", Professor Cary Krosinky

Distinguishing ESG approaches:

- Governance appears as a key driver, and one that should influence the management and approach to the "E" and the "S" in ESG. Better "G" should lead to better "E" and "S".
- Pure negative screening can deliver suboptimal returns and management of exclusions introduces a significant behavioural shift into how portfolios are managed (and this is also the case in the exclusion of sovereigns given they are larger, more liquid and could cause a significant underperformance on a portfolio basis).
- On the positive side, when using exclusions as a risk management tool, they can help protect against structurally impaired business models. For example, due to a shifting global energy mix and drive for renewables, excluding companies which derive a significant portion of their revenues from fossil fuels (in particular coal) could lead to a meaningful outperformance and help mitigate downside risk.
- ESG momentum appears to be more interesting to look at as a metric than overall ESG score. This means there is potentially more alpha generation from identifying improving underperformers.
- Benefits of ESG appear greater in emerging markets[16], so expect more capital to track ESG-friendly EM indexes over time, providing an incentive for sovereign and corporate issuers in EM to lift their game on ESG performance.
- Biasing portfolios to solely ESG factors can have unintended consequences and exposures (e.g. tilt a bond portfolio to lower risk, lower yielding bias) so need to take into account broader portfolio risk characteristics

16 Blackrock Institute "Sustainable investing, a why not moment?" May 2018

ANALYSIS OF ESG PERFORMANCE BY ASSET CLASS

Real assets/infrastructure:

1. ESG integration is key given long duration assets and physical assets exposed to climate risk
2. Green premium emerging in real estate and also lower borrowing costs. Positive progress in built environment, which is one of the key emitting sectors
3. Focus of green spreading from sustainability to long term resilience. Better technology and data and efforts in identifying climate risk and resilience down to post code will drive more effective pricing of assets by investors
4. Please see case studies from Arup (Appendix 2.2) which shows the growing trends for physical infrastructure to be 'sustainable' and to generate overall value and impact.

Bonds/fixed income/loans:

1. Recent updated research by both Barclays[17] and Hermes Investment Management[18] reinforces their views that ESG is additive in a fixed income context:
   i. Barclays's analysis, incorporating ESG ratings data from two different providers, points to a (small) performance benefit from tilting, all other things equal, bond portfolios to high-ESG bonds
   ii. Hermes reports that correlation between CDS spreads and the ESG performance of companies exists, and that current credit ratings do not completely capture ESG risks
2. BlackRock's analysis on green bonds concludes that performance is in line with traditional counterparts, with some short term outperformance after issuance partly linked to lack of supply and therefore poorer liquidity. Need to drive efforts to increase issuance in green bond markets.
3. Banks are starting to link green loans (i.e. mortgages for green buildings) with a number of commercial metrics (lower churn, higher rental yields, etc) that is allowing them to price in lower risk based on lower expected defaults

17 Barclays Impact Series report "The Case for Sustainable Bond Investing strengthens" October 2018

18 https://www.hermes-investment.com/ukw/blog/perspective/pricing-esg-risk-in-credit-markets-reinforcing-our-conviction/

Equities:

1. Growing body of evidence pointing towards the positive relationship of corporate financial performance and higher rated firms. It is possible to construct ESG portfolios in a systematic way without significantly degrading performance
2. Potential for outperformance and/or risk mitigation via reduction in volatility
3. ESG factors have been strong signals of future volatility, earnings risk, price declines and bankruptcies, and have also been a signal of future alpha across some sectors
4. ESG strategies can make portfolios more defensive than intended
5. Backward looking ESG analysis does not result in meaningful differences in performance- not surprising given forward looking and fluid share price context
6. Need to be aware of potential bias and positive skew in data analysis

TRENDS DRIVING THE FUTURE OF ESG INVESTING

There are four key trends shaping the future of ESG investing. Together, they indicate a pathway past many of the obstacles to mainstreaming ESG.

1. Innovative new products
2. ESG integration
3. Applied technology
4. ESG engagement

INNOVATIVE NEW PRODUCTS

Innovations and product development will support growth further in the industry. Increased investor appetite and the perceived financial and reputational benefits of adopting ESG investing has resulted in growth in product innovation as the market reacts and tries to come up with suitable content for investors.

We have seen examples across the various asset classes in the last 18 months. And we expect the proliferation of new products as the ESG market continues to evolve.

Fixed income/debt:

- Launch of green loan guidelines by the LMA (mirroring the Green Bond Principles)
- Green Bonds Principle launched Social Bond Principals and Sustainability Bond Principals
- Green (primarily real estate/mortgages) products launched by banks, providing pricing upside for projects with superior green/ESG credentials
- Efforts on standardising and setting up green securitisations
- Continuation of growth in green bond issuance, broadening of issuer universe and emergence of green bond indexes
- Issuance of SDG bonds (e.g. ANZ, World Bank, HSBC- maps out its existing and pipeline lending and infrastructure book against the UNPD SDGs goals). Aided by work carried out by the UN Global Compact providing a framework on SDG bond issuance

Public Equities: increased number of ESG, sustainability and SDG related indexes and benchmarks

Private equity/private debt: growth of permanent capital vehicles with longer term investment horizons that the standard closed ended private equity fund (e.g. recent launch of $3bn partnership between Generation Investment Management and CDQP), number of new funds targeting thematic investing (e.g. SDG funds, ESG-led private credit funds.

Infrastructure: growth in green and renewable infra funds, new funds targeting Belt & Road sustainable infrastructure opportunity

ESG INTEGRATION – A SYSTEMATIC APPROACH TO ESG INVESTING

There is no consensus or agreed way on how to best conduct ESG and sustainable investing. But there is an increasing realisation that ESG integration via simple ESG scores based on backward looking historic set of CSR data is somewhat simplistic in the context of dynamic markets.

Integrating ESG correctly to drive potential outperformance requires a significant amount of domain-specific knowledge on interpreting the data and an understanding of the inherent biases in the way the data is created.

Several players are recommending and starting to develop a sector specific framework, based in some instances on empirical analysis of what ESG components are driving performance across specific sectors. BAML refers to need for a sector specific framework as different drivers impact different sectors and provide different signalling (see Exhibit 3.9).

EXHIBIT 3.9: ESG SECTOR IMPLEMENTATION CHEAT SHEET

SECTOR	RETURN ON EQUITY	EARNINGS RISK
CONSUMER DISCRETIONARY	GOVERNANCE	SOCIAL
CONSUMER STAPLES	SOCIAL	ENVIRONMENTAL, SOCIAL
ENERGY	ENVIRONMENTAL, SOCIAL	ENVIRONMENTAL
FINANCIALS	SOCIAL	GOVERNANCE
HEALTH CARE	GOVERNANCE	SOCIAL, GOVERNANCE
INDUSTRIALS	ENVIRONMENTAL, SOCIAL	ENVIRONMENTAL, SOCIAL
INFORMATION TECHNOLOGY	GOVERNANCE	SOCIAL, GOVERNANCE
ATERIALS	ENVIRONMENTAL	ENVIRONMENTAL
REAL ESTATE	ENVIRONMENTAL, SOCIAL	ENVIRONMENTAL
UTILITIES	ENVIRONMENTAL, GOVERNANCE	ENVIRONMENTAL, SOCIAL

Source: BAML "The ABCs of ESG", September 2018

ESG rating, reporting and disclosure

In Turning Green Momentum into Actions, we called for the establishment of a common approach for industry classification standards led jointly led by rating agencies and investors to achieve harmonisation in ESG assessment and ratings methodologies.

Although there is significant push and pull factors both from increasing regulatory requirements in relation to disclosure, and from increased investor appetite for evidence based ESG and impact metrics, standardized ESG disclosure is still in its infancy and ESG ratings and integration remains firmly not a "plug and play".

There are numerous challenges in integrating ESG rating content systematically into investment strategies. They relate to the lack of uniform standards and disclosure rules when it comes to company reporting with respect to ESG concepts, and how this flows down to third party ESG ratings providers and their interpretation of the data.

Traditional ratings focus on the probability of default. ESG ratings tend to be a relative indication of the 'quality' of the issuer compared to its peers and tend to overshoot in case of a negative event. On a stand-alone basis, ESG ratings are limiting in informational content and are not aggregable on the portfolio level.

Even though the underlying research can be used by traditional investment managers to develop private forward-looking indicators or scores, there is a realisation in the market that until data is captured in a more consistent manner and within a broader universe, a single ESG score led approach can mask nuances below the surface.

ESG reporting is becoming a must have for larger and quoted corporations, but there remains significant divergence in reporting styles, metrics and methodologies. Metrics vary from company to company, compliance is spotty, and data are still largely self-reported and unaudited.

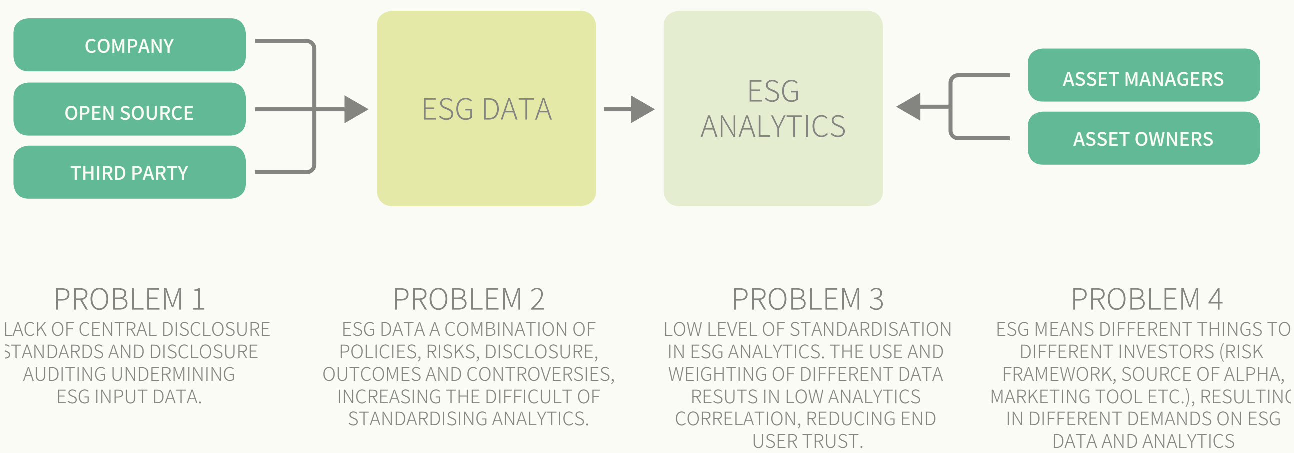
Existing ESG data and reporting challenges

Purpose should frame the discussion around ESG reporting – what is it for and therefore what data is appropriate? Beyond superficial marketing, what do investors use ESG for and therefore; what information needs to be produced; and what actions must be taken in response?

The ESG data industry has, to date, been an organic combination of data, ratings, disclosures and opinions that serve very different purposes for investors. It is this lack of consensus (the so what?) that makes the data question incredibly tricky and which can result in 'too much data, not enough information'.

The relatively nascent and work-in-progress nature of ESG investing and lack of common answer to what investors are looking for results in lack of comparability, standardisation and consensus on both ESG's ultimate end and the data / analytics that serve this (see Exhibit 3.10).

EXHIBIT 3.10: FRAMING OF ESG DATA AND ANALYTICS ISSUES



Source: Util

These data challenges manifest in a variety of ways:

Quality & reliability of the data: much of the ESG data reporting by corporates is voluntary and self-disclosed, and therefore lacking in consistency.

Coverage limitations:

- Most ESG data has been around for less than a decade, and in many asset classes much less
- Coverage is particularly spotty in areas such as emerging markets and high yield/fixed income
- Larger market cap businesses tend to provide more data and therefore can tend to dominate ESG indexes.

Inconsistency and comparability:

- Inconsistency in data captured by different providers and available in their databases (e.g. MSCI, Sustainalytics) so risk that investment conclusions can be skewed depending on choice of ESG rating provider
- The lack of standardization leads to restrictive comparability. Different providers weigh data differently, which leads to ESG scores from different providers potentially having low correlation with one another, unlike credit ratings
- Fixed income has an additional challenge versus equity: ESG data providers struggle to map accurately the debt issuing subsidiaries with the parent companies.

Backward looking: most ESG portfolios remain constructed on backward looking data. Growing importance of forward-looking metrics given dynamic nature of markets. Active investors more likely to be creative on this front.

Frequency: in many cases updated annually only, and, again, backward looking in nature.

Sector dynamics: different sectors with different business models will have different exposures to ESG factors and therefore weightings (which require a significant element of human input), making comparability across sectors and rating providers difficult.

Biases: potential for inherent biases driven by company size and associated level of transparency and amount of disclosure. Larger companies might be able to deploy more resources to this than smaller companies, but they may not adhere to the relevant ESG principles as well as other smaller companies that might not disclose as much or any ESG information.

Go beyond individual scores: need to understand how and why individual score components can impact returns across different industries and go beyond headline scores for additional ESG insights that may enhance returns.

Cost and talent availability as barriers to adoption of ESG integration

One of the inconvenient truths of ESG and sustainable investing is the fact that a credible ESG process is operationally expensive for asset managers to implement. The costs of integrating and scaling ESG strategies covers the organisational, research and execution items to cover. They involve a deep in-house research, development of proprietary risk models, acknowledgement of potential conflict of interests with existing clients' business, training dedicated investment professionals, developing proper factor attribution, thematic performance measurement, thoughtful and thematic engagement activities, and formulating firm's own theory of change, which all the above functions would follow.

Proprietary ESG scoring, which is needed to outperform is also costly. It takes years to grow a seasoned high yield or equity research analyst, equally, it takes time to develop a truly competitive ESG investor. Such a person would have to be well versed and seasoned in traditional investing in order to navigate all of its limitations when incorporating ESG properly.

APPLYING TECHNOLOGY TO THE CHALLENGES OF ESG

The role of technology, working in harmony with regulatory frameworks, will be essential for the maturity of both the ESG and Impact investment ecosystems. Mainstream investors are increasingly looking at the role of ESG 2.0 providers, including TruValue Labs and Arabesque S-Ray, and sophisticated Impact measurement companies including Util, to improve the quality and actionability of non-financial analytics. The future of ESG will likely see machine learning being used to improve the objectivity and complexity of ESG and impact measurement, sentiment analysis being used for real-time company and investment analysis, and verification technology, including blockchain being used to validate data disclosure.

Technology as an enabler

The role of technology, across industries, is as an enabler for human progress. The same must be the case in the investment industry. Technology in the investment industry should enable the very human process of superior and sustainable investment decision making. There are five key avenues through which technology can enable more sustainable investment decision making.

1. **Crunch more data:** contemporary data science and engineering allows us to gather more company data, from a wide range of

sources, than we have the ability to gather individually. This affords us a much more comprehensive picture of company sustainability and impact;

2. **Objective data analysis:** using modern machine learning methods, we can arrive at a 'consensus' relationship between company action, output and outcome. As Impact analysis is a multi-dimensional, subjective pursuit, deferring to aggregate, mass-data derived relationships serve as a necessary industry spirit level;

3. **Validated, standardized data:** using modern verification techniques, including blockchain technology, we can arrive at validated company data, that can be used to confidently ground investment decisions;

4. **Real-time data analysis:** technology can integrate new data in real-time, providing an up-to-date picture of company performance and risk; and

5. **Actionable, multi-channel data analysis:** sustainability analysis is complex and therefore the utilization of modern visualization techniques, best in class user experience, and multi-channel delivery all help distil complex data into actionable insights.

Technology as a cost-saver

In an industry where expense ratios are coming under ever greater scrutiny, technology can drive the cost of data and analytics down, presenting savings throughout the chain of transactions. Existing sustainability data and metrics are often delivered to managers at prohibitive expense. Advances in the automation of data capture and cost of complex computation will drive down the cost of data for managers. Furthermore, many managers rely on teams of analysts to manually screen large securities universes, forming a view on potential impact. The advancement of machine learning capabilities has the potential automate much of this analysis, enabling managers to offer funds at lower costs.

Technology as a product builder

We see new active, smart beta, and index-linked sustainable funds coming into the market on an almost daily basis. These funds often involve painstaking, analyst driven screening, resulting in a sustainability cost 'premium' delivered to customers. Large scale data and metrics automation will help deliver next generation passive investment products, with the ability to over- and under-weight based on impact theme, geography, ESG rating, alongside a multitude of other criteria.

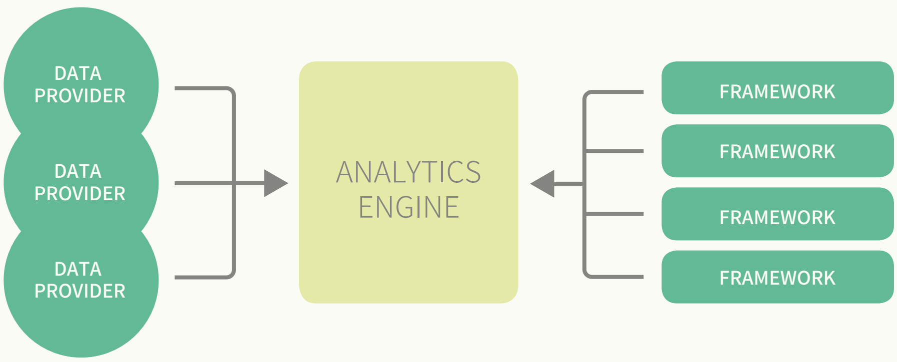
Technology as a consensus builder

The only way we can move towards industry-wide consensus regarding both ESG and impact measurement is through the widespread adoption of technology. Only through technology can we deliver an objective, consensus driven measurement of company impact, with company disclosure validated and 'green-washing' avoided. Without technology, frameworks and methodologies will reach neither the scale (number of securities analysed) or the sophistication required to ground robust investment practices. Furthermore, without technology, accurate, comparable impact and ESG measurement will not be possible, without prohibitive cost.

Technology in a fragmented market

We see the data and metrics industry relating to ESG and impact as an incredibly fragmented, noisy market. Frameworks, taxonomies, metrics and data all compete to be the True Voice of ESG and impact measurement. The providers that utilize technology to deliver superior analytics, at a reasonable price point, will be best placed to consolidate the data provided by incumbent, niche providers. Furthermore, companies that can leverage technology to provide superior data-driven analytics will also likely be able to frame these analytics in any number of chosen frameworks; SASB, the UN Global Compact, the SDGs, and the Paris Climate accord.

EXHIBIT 3.11: ANALYTICS WILL BE KEY



Source: Util

As with parallel analytics technologies, there will naturally become a 'winner takes most' market, with one or two providers gaining significant market share for both ESG and impact analytics.

Technology can be a danger too

Technology can become dangerous when it stops becoming an enabler and starts to drive investment decisions, without due moderation and understanding by humans. There are three major dangers of technology in investment decision making:

Complexity: computational power drives analytical complexity. Complexity presents difficulty when there is a divergent, unintended investment outcome from a complexity derived investment strategy. Unpicking this complexity to find a root cause of investment strategy failure can become an all but impossible task;

Disintermediation: data, analytics and investment strategies are disintermediated, resulting in the potential for loss of meaning, throughout the data-to-decision value chain. When investment outcomes diverge from stated intentions, there becomes a lack of accountability and ownership of the drivers of the failed strategy;

'Black-box' analysis: machine learning as a tool to provide superior, data driven insight, fails to provide transparency in computation. Insights can be made, based on transparent computational logic, but without the ability to dig into the sum parts of an insight derived from millions of data points. Black box analysis, although powerful, can undermine the trust in and accountability of investment decisions.

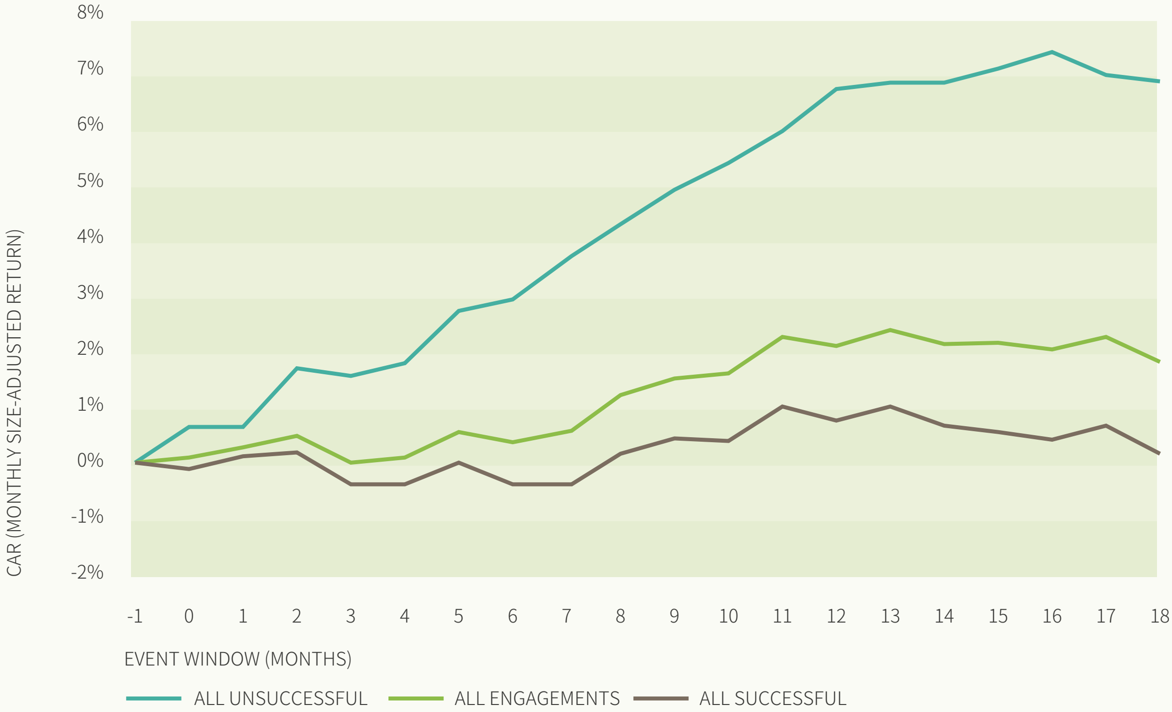
ESG ENGAGEMENT – REALISING GAINS THROUGH ACTIVE CHANGE

Corporate engagement is an essential pillar for ESG and sustainable investing whether it is in fixed income or equity. A responsible and pragmatic investor would want to see what is "under the hood" before allocating their capital to it, and if a company fails to meet their target and milestones, the investors ultimately exercise their rights or withdraw their capital.

Research linking active ownership to shareholder value[19] points to the value of successful engagements in ESG related matters and how those (successful) engagements can improve returns.

19 "Active Ownership", Dimson, Karakas & Li, August 2015

EXHIBIT 3.12: CUMULATIVE ABNORMAL RETURNS (CAR) AROUND INITIAL ENGAGEMENTS



Source: "Active Ownership", Dimson, Karakas & Li, August 2015

Traditional company engagements have been focusing on the companies' financial return specifically and to some extent the corporate governance, the "G" of ESG. As ESG-related corporate failures have become more prominent, coupled with increased visibility via social media and rise in investors ESG awareness, we have seen ESG engagements grow.

There are four considerations investors will need to factor in when formulating an ESG engagement approach:

1. Not all engagement is created equal

Engagement on ESG matters, but it has to be thoughtful and realistic in order to optimise results. It is not effective to tell an oil and gas company that they need to decarbonise over a five-year period given the amount of long-term capital that has been locked into infrastructure, people and processes. A much better approach would be to ask the company how they are thinking about the world transitioning to a lower carbon economy, how does their strategy over the long term take that into consideration and how will their capital allocation and revenue profile reflect those considerations.

2. Engagement limited to disclosure is flawed

With the rise of ESG third party data, ESG engagement seems to rely primarily on a requirement for ESG disclosure. This we believe is an inherently limited "low hanging fruit" approach that does not get to the core of the issue. Company disclosure is important to provide insight to investors. However, ESG issues are certainly much deeper than disclosures and a successful engagement would need time to build a relationship with companies, agree on milestones and timelines in order to effectively manage the risk and concerns.

One example is cyber security. Deciding the effective management of a company on cyber security issues is not limited to only cyber security policy or the detail of their disclosure around this topic. To run a successful engagement on this, given the growing and fast changing nature of this field, requires the understanding of the company's business, their management, systems, board composition and at times require to access how a company respond during a crisis.

Given the diverse background of ESG engagement, we have seen the rise of collaborative engagements over the last 2 years. The climate 100 engagement initiative, the engagement on palm oil and more recently the engagement to reduce plastic pollution are just a few examples of this trend. Investors are also becoming more specific and vocal about their engagement ask (e.g. LGIM on board gender diversity, Fidelity on executive remuneration). These initiatives have seen companies changing their behaviour to become better companies, which ultimately creates shareholder value.

3. Engagement isn't just for equity shareholders

Engagement is also not limited to equity shareholders, as conventional investors believed. A recent study published by the PRI[20] provides useful guidelines to fixed income investors on how to drive engagement. Fixed income investors have equal responsibility when it comes to engagement.

In fact, bond holders have the potential to engage more frequently with companies, as that engagement is driven by the frequent need to issue debt, rather an annual shareholder AGM. It is a great opportunity for investors to explain their expectations to the bond issuer and also helps investors to be better informed about potential risks associated with the bond. The only differences between equity and bond investors is on the voting rights. Bond issuers would want to ensure that they maintain strong performance on ESG, as this might also allow them to reduce their cost of capital in future issuance.

4. Effective engagement is a product of resourcing and skills

Engagement is also fighting an uphill operational battle. In its present form, engagement exists somewhere between the investment decisions and corporate citizenship agenda. Asset managers are not also asset owners and risk creating conflicts of interest when accommodating various clients' agendas. The investment case often comes head to head

20 "ESG engagement for fixed income investors", PRI, April 2018

with the business case.

Many ESG engagements are carried out by dedicated ESG teams. The size and background and skill sets of these teams varies, and includes staff across corporate governance, proxy voting, data providers, financial analyst, NGOs. Though it is crucial to have the diversity, to be able to effectively engage with companies, one must understand the sector, geography of the business operations (not where it is registered), and the company's business.

One must also be able to read and understand the financials statement of the company to have a better understanding of the company's current position and where it is heading to. This helps to identify key risks that will impact the long-term cash flows of the company and their balance sheet, and drive the areas where engagement should be focus on.

To run engagement effectively, an asset manager would need more than just superficial conversations with companies but to have the right set of required skills to engage with companies and to build a long-term relationship. Companies do not change overnight if changes are required and an effective engagement requires commitment, agreed milestones and holding boards accountable to deadlines, requiring significant follow up, which is in itself a full-time job.

RECOMMENDATIONS

We are encouraged to see that there has been significant progress over the last 18 months in relation to the role of ESG investing. Although there is some way to go before we can consider ESG to be a fully mainstream concept, we are of the view that the "ESG seed" is firmly planted in the investor community.

Momentum is strong. Greater confidence in relation to the financial benefits of integrating ESG into investment processes, and an underlying shift in the mindset of asset owners looking for more responsible investing will continue to drive adoption.

A growing universe of ESG practitioners, investors, banks, policy makers and service providers are coming together to discuss and design solutions to some of the challenges identified in this paper. As part of this effort, we propose several recommendations for consideration.

RECOMMENDATION 1

Investors and regulators need to work together to develop the fundamentals of the ESG investment market. Including:

a. Delivering stronger market signals on the role of ESG as an outperformance factor, including on physical assets/ sustainable infrastructure (cost/benefit analysis) using the growing body of evidence linking financial performance and ESG
b. Market participants should pay attention to 'Materiality' map at industry and sector level. Recommendations by Sustainability Accounting Standards Board (SASB) provides good base for market participants should explore.
c. Undertaking further analysis to help establish credible ESG based factor attribution across asset classes
d. Further defining fiduciary duty and provide greater guidance on requirements
e. Developing ESG investment guidelines

RECOMMENDATION 2

The GFC and GFI should work together to support the development of ESG investing in China. This should include:

a. Establishing capacity building programmes for asset owner and asset managers
b. Encouraging cross jurisdictional collaboration across private and public sectors
c. Joining efforts to develop ESG investment guidelines for Chinese investors
d. Promoting importance of ESG engagement and provide guidance on best in class ESG engagement
e. Continuing efforts to define ESG fiduciary duties for long term institutional investors
f. Encouraging companies and investors to think long term and creating overall stakeholder value (moving away from short term only shareholder value)

RECOMMENDATION 3

Market participants should systematically integrate ESG into their investment approaches. Regulators and service providers should provide advice and support as needed. Suggestions include:

a. Adopting a more forward-looking value assessment of ESG risks and opportunities through internal and external ESG integration
b. Continuing to develop consistent definitions and assessment methodologies for each of the E, S and G factors across sectors
c. Promoting and develop a consistent, comparable, and transparent approach to disclosure
d. Expanding the TCFD mandate to include social and governance factors (in addition to current more advance efforts on climate)
e. Aligning data and analytics to fit in with defined industry needs (data fits the use case of the investment industry)
f. Investors should also focus on an ESG sectorial analysis to maximise alpha generation opportunities
g. Building integrity, confidence and trust in ESG data via auditing functions for corporate disclosure, regulation and technology
h. Promoting the creation of global and regional standards regarding issuers' data verification
i. Exploring how best to design incentives for company disclosure

RECOMMENDATION 4

Regulators, industry associations and service providers should harness emerging technology to rapidly lower the costs of accessing of reliable and quality ESG data. This will require:

a. Collaboration between regulators, principles-based industry organisations, and state of the art technology providers, to bring about new levels of standardisation and sophistication in the industry
b. Support for new technologies that seek to improve the objectivity, complexity, insight and quality of both data and analytics
c. Support for new companies that provide technology enhanced solutions to different asset classes, including Private Equity, Fixed Income and Real Estate
d. A clearly articulated separation between ESG and Impact relating to technical solutions
e. Greater transparency and methodological openness regarding new analytics providers relying on machine learning to generate insights

RECOMMENDATION 5

Investors should capture the positive returns of successful ESG engagement by developing sophisticated engagement processes that deliver real change.

a. Investors to promote greater engagement and to design more efficient engagement processes that incorporate actionable plans, adequately resource engagement teams with appropriate skill set
b. Formalise and promote awareness of engagement role of bond investors

CHAPTER 4

CLIMATE AND ENVIRONMENTAL INFORMATION DISCLOSURE

Timely and accurate access to information of climate and environmental-related opportunities and risks is an important foundation for the green financial market. In June 2017, the Financial Stability Board's Taskforce on Climate-related Financial Disclosures (TCFD) issued the Recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD Framework), providing framework and recommendations for investors, lenders and financial institutions to assess risks and opportunities related to climate change.

In China, green finance has been elevated to a national strategy. Seven ministries and commissions issued the Guiding Opinions on Building a Green Financial System; CBRC formulated the Green Credit Statistics System and organized major banks to carry out self-evaluation on green credit; and CSRC also unified and standardized the environmental information disclosure of listed companies.

In *Turning Green Momentum into Actions*, the Taskforce emphasised the importance of cooperation in the field of green finance and the importance of encouraging financial institutions in China and the UK to adopt TCFD. The GFC and GFI subsequently selected 10 Chinese and British financial institutions[21] to jointly conduct pilot work on the climate and environmental information disclosures.

Throughout the past year, the pilot institutions have discussed the objectives, contents, methods and action plans of environmental information disclosure, and those relevant climate risks and opportunities according to the TCFD recommendations, with considerations of the unique characteristics across both markets and among institutions. Under the leadership of GFC and the GFI and owing to the coordination of ICBC (China's project manager) and UNPRI (UK's pilot manager), the pilot has made significant progress.

This chapter summarises the progress and achievements of the environmental information disclosure pilot for both Chinese and UK financial institutions.

21 The 10 pilot financial institutions include ICBC, Industrial Bank, Bank of Jiangsu, Bank of Huzhou, China AMC, E Fund, HSBC, Aviva, Hermes Investment Management and Brunel Pension Partnership.

EMERGING THEMES FROM THE PILOT

The objectives of the pilot program for environmental information disclosure of Chinese and UK financial institutions are to:

- raise awareness of the financial materiality of the environmental risk factors on financial institutions and their role in advancing the development of green finance;
- provide a platform for peer exchange;
- pilot disclosures against annually against a three-year action plan;
- a Chinese guide for more financial resources to enter the green fields and inhibit the effect of financial resources entering the polluted and high-carbon industries without further use of financial resources, to push economic transformation;
- help financial institutions identify, quantify and circumvent various financial risks related to the environment, strengthen the ability of financial institutions to resist risks, and enhance the robustness of financial system.

In 2018, the Pilot Working Group of UK-China Climate and Environmental Information Disclosure has held three meetings in Beijing and London. The Chinese pilot financial institutions also conducted three seminars, determined the "Action Plan for Climate and Environmental Information Disclosure of the Chinese Financial Institutions" and the "Target Framework for Environmental Information Disclosure of Chinese Pilot Financial Institutions", and published a progress report on the pilot work of Chinese institutions. [22]

The pilot has reaffirmed three underlying features of the TCFD framework:

1. Markets are increasingly sensitive to the impact of and risk posed by environmental and climatic factors.
2. Environmental information disclosure can help financial institutions improve the ability to asses and manage these risks.
3. Conducting scenario analysis or environmental stress tests can help financial institutions measure the exposure to environmental risk factors as well as the environmental impact of financial institutions' own business, investment and financing activities.

Research and innovation should be strengthened to carry out research on the aspects of data collection, system construction, model development, quantitative methods and application of results. Both China and UK will jointly explore the methods and models for measuring environmental and climate-related information as the pilot develops.

22 The China-UK meetings were held respectively on January 11, March 19 and July 23, 2018. The meetings of Chinese pilot institutions were held on February 7, April 21 and June 11, 2018.

KEY THEMES FROM THE FIRST YEAR OF THE PILOT

Six recurring themes have emerged in the first 12 month of the pilot:

1. **The benefits of peer exchange.**
   Participants valued the opportunities to exchange information and experiences on implementing TCFD and other disclosure frameworks with peers from other markets as well as different financial sectors. This has provided an opportunity to see the same issues from different vantage points, work through issues relating to getting started and the implementation of disclosure frameworks

2. **The growing material relevance of climate and environmental risk factors.**
   The effects of climate change and environmental pollution are no longer subtle. In financial risk terms, the credit rating agency Moody's, for example has identified 11 sectors, with $2 trillion of rated debt, with immediate or emerging climate-related risk[23]. Research by the IEA has identified $26 trillion in capital re-allocation needed by 2040[24] to deliver the objective of the Paris Agreement of limiting warming well below two degrees.

3. **The value of a common yet, flexible framework.**
   There are now over 500 official supporters of the TCFD recommendations, this includes over 287 financial firms responsible for nearly $100 trillion. Other reporting frameworks also exist, such as those developed in China. Having a comparable approach helps to reduce implementation costs for preparers. Participants also cited the importance of flexibility to account for organisations with different sizes, strategies and operating in different markets which helps to make broad based implementation achievable.

4. **Need for multi-year implementation plans.**
   Disclosure is often the final 10% of the work for companies and financial institutions – implementation is not instantaneous and typically takes several years. The decision to extend the pilot to a three-year programme was made in this light. In the first year, the focus is on securing internal buy-in, establishing internal processes as well as initial disclosure. Incorporation into risk management, identification of useful metrics, detailed sectoral work as well as scenario analysis follow in the second and third years.

23 Moody's Investors' Service (November 2015) Environmental risk heat map
24 Unpublished research

5. **The challenges with and innovation in data collection.** A common challenge cited by participants in implementing a disclosure framework was the availability of accurate disclosures from corporates on materially relevant climate or environmental information to inform financial decision making. However, a theme of pilot workshops were developments in technology and data capture that utlise production data, these can provide an alternative source of information about climate and environmental risks that do not rely on corporate disclosure.

6. **The evolution and application of forward looking analysis.** Conventionally, carbon and environmental disclosure have relied on historical data. Yet, some environmental problems, notably climate change, are non-linear in nature and will grow over time. Scenario analysis, which is already commonly used to inform investment and lending decision making, can be applied to climate and environmental problems to assist financial institutions understand how the concentrations of risk arising from this factors could affect investment portfolios and loan books over the near to midterm.

The first 12 months of the pilot programme has demonstrated the ability of pilot financial institutions to identify and manage market opportunities and risks brought about by environmental factors will be further enhanced. Disclosure has been shown to enhance the ability of investors, lenders, asset managers and financiers, to promote a green economy and sustainable development Both countries should to closely communicate and cooperate with each other to timely disseminate the breakthroughs in the implementation progress, practical experience and staged results.

The pilot working group will continue to raise the awareness of TCFD recommendations and China's environmental disclosure reporting framework through meetings, seminars, financial institutions' participation and publication of reports. It will strengthen financial institutions' understanding and reference to the TCFD framework as well building capacity for the application of environmental risk quantification methods; meanwhile, the annual progress reports will be published to disclose the progress of environmental information disclosure of pilot financial institutions.

DELIVERED ACTIONS

2018 has been a year of delivery for the joint environmental disclosure pilot.

1. Action plan jointly issued by China and UK

On the basis of consensus, China and UK jointly issued the "Action Plan for the Pilot Working Group of UK-China Climate and Environmental Information Disclosure" in September 2018, encouraging pilot financial institutions to conduct environmental information disclosure.

The action plan set ambitions for the different pilot institutions.

1. Action plan for Chinese pilot commercial banks

- By 2019, the environmental impact of 2018 green credit (based on the approach of CBRC) will be disclosed. On the basis of CBRC's measurement methods, basic data will be sorted out, and qualified data will be disclosed step by step.
- By 2020, relevant environmental risk information of power, cement and electrolytic aluminium industries (based on the scenario analysis or stress testing methods) will be disclosed according to the situation of pilot institutions.
- By 2021, pilot financial institutions will be encouraged to further expand the industries covered by environmental information disclosure according to their business characteristics and optimize environmental risk analysis methods and disclosure indicators. Additionally, efforts will be made to increase the number of financial institutions engaging in environmental information disclosure.

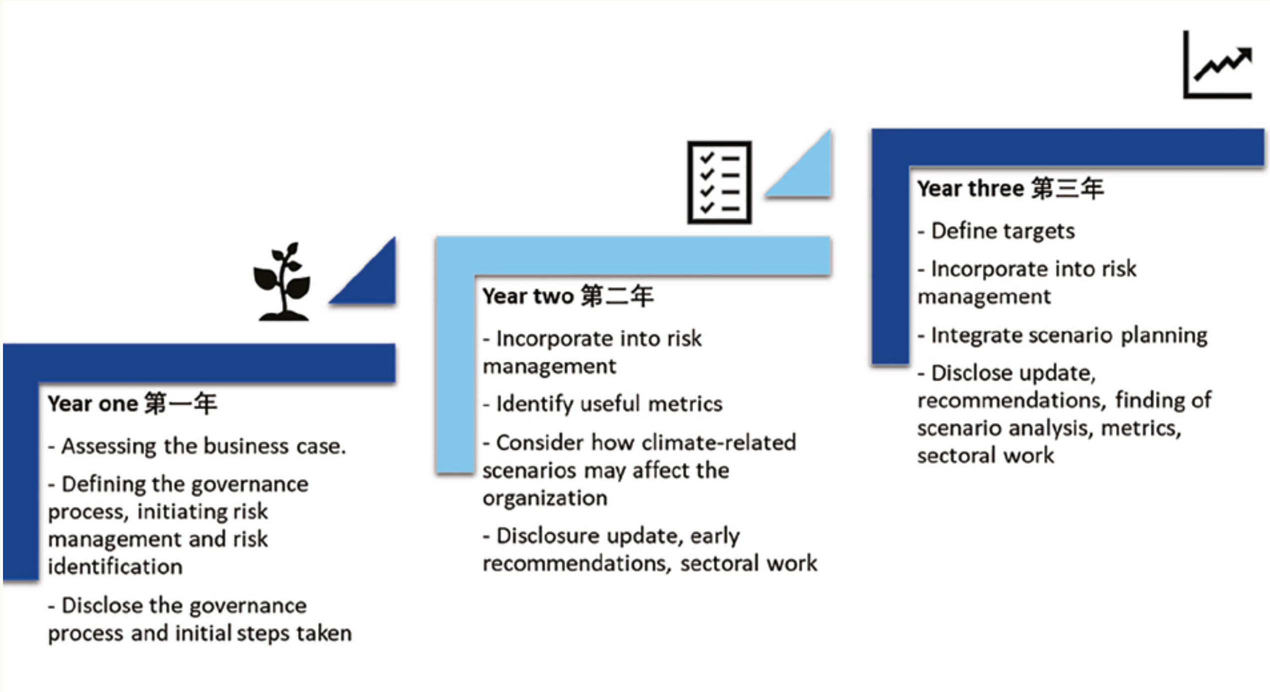
2. Action plan for Chinese asset management institutions

- The first phase is the preparatory phase (details are shown as follows), to start the disclosure of some contents, and the disclosure will be gradually expanded in the second and third phases.
- Cooperate with third-party agencies to collect basic data and establish an indicator system on the environmental impact of assets held by the asset management institutions and the analytical methods for the impact of environmental risks on the valuation of asset holdings and the probability of default (such as stress testing methods).
- Establish and improve the system of research, investment and risk control.
- Develop the investment strategies and fund products that include environmental factors.
- Provide responsible investment report according to the requirements of applicable international and regional responsible investment organizations.
- Work out and estimate the environmental disclosure indicators and disclosure format for investment portfolios.

- Assist regulatory authorities/associations in working out and establishing the guidelines or framework for disclosure of environmental information by asset management institutions.
- Evaluate the relationship between public disclosure of environmental information and fiduciary duty, and provide research support and advice to relevant regulators and associations.

3. Action plan for UK financial institutions (see Exhibit 4.1 for details)

EXHIBIT 4.1: OUTLINE OF A THREE-YEAR IMPLEMENTATION PLAN FOR TCFD[25]



2. Target framework for environmental information disclosure constructed by Chinese institutions

On the basis of interpreting and sorting out disclosure contents at home and abroad, Chinese pilot institutions attempt to establish a target framework for environmental information disclosure, covering:

1. Environment-related qualitative information and indicators. Including the institution's environment-related strategies and objectives, governance structure, policy system, impact of environmental risks and opportunities, risk management and processes, green finance innovation and cases, researches and results on green finance, and next year's action objectives and plans.

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25 Adapted from the TCFD secretariat presentation on implementing the TCFD recommendations.

2. Quantitative indicators and scenario analysis. In which, quantitative indicators cover the environmental impact of financial institutions' own business activities (see Table 2) and that of the institution's investment and financing activities (see Table 3). The pilot institutions can also use the scenario analysis to quantitatively measure the impact of environmental factors on the opportunities and risks of financial institutions, such as scenario analysis and stress testing on environmental impacts on and environmental risks of high-emission industries including electricity, steel and cement.

A list of potential qualitative and quantitative indicators are included as Exhibits 4.2 and 4.3. Financial institutions may decide on the disclosure degree of the above qualitative and quantitative indicators according to their actual conditions, and adopt different forms of disclosure, including issuing special sustainable development report, opening special environmental information section in the social responsibility report, or organically including environment-related information in the annual report and social responsibility report.

EXHIBIT 4.2: ENVIRONMENTAL IMPACT OF FINANCIAL INSTITUTIONS' BUSINESS ACTIVITIES

GREENHOUSE GAS EMISSIONS AND NATURAL RESOURCE CONSUMPTION DIRECTLY GENERATED BY OPERATING ACTIVITIES (EQUIVALENT TO SCOPE1)	Fuel consumed by own transportation vehicles
	Fuel consumed by own heating/cooling equipment
	Water consumed in business and office activities
INDIRECT GREENHOUSE GAS EMISSIONS AND INDIRECT NATURAL RESOURCE CONSUMPTION FROM PURCHASED PRODUCTS OR SERVICES (EQUIVALENT TO SCOPE2)	Electricity consumed by business and office activities
	Paper used for business and office activities
	Fuel consumed by purchased heating/cooling services
	Energy consumed by employees on public transportation vehicle for business purpose
EFFECT OF ENVIRONMENTAL PROTECTION MEASURES	Resources and energy consumed by activities that replace online business and paperless office
	Trainings or public welfare activities to enhance the environmental protection awareness of employees and the general public

EXHIBIT 4.3: ENVIRONMENTAL IMPACT OF INVESTMENT AND FINANCING ACTIVITIES OF FINANCIAL INSTITUTIONS

GREEN CREDIT BALANCE AND PROPORTION	Green credit balance
	Green credit proportion
EQUIVALENT EMISSION REDUCTION FROM CHANGES IN GREEN CREDIT BALANCE	Equivalent reduction of standard coals
	Equivalent reduction of carbon dioxide emissions
	Equivalent reduction of COD
	Equivalent reduction of ammonia and nitrogen
	Equivalent reduction of sulfur dioxide
	Equivalent reduction of ammonia and nitrogen compound
	Equivalent of volume of saved water
ENVIRONMENTAL IMPACT OF INVESTMENT AND FINANCING ACTIVITIES IN SPECIFIC INDUSTRIES	Changes in the amount of investment and financing in specific industries
	Changes in credit structure of specific industries
	Environmental impact of the above changes

3. Chinese and UK pilot institutions promoting environmental information disclosure

Since 2018, the pilot financial institutions of the two countries have actively promoted their environmental information disclosure and made good progress in accordance with the pilot action plan. Further details can be found in the Pilot Progress report and case studies.

APPENDICES

APPENDIX 1 – ACCELERATING GREEN SECURITISATION

1: GREEN/SUSTAINABLE BOND DEFINITIONS

Below is a set of definitions and description of various green/sustainable bond structures taken directly from the G20 Sustainable Finance Study Group (SFSG) Synthesis Report for 2018. China and the United Kingdom Co-chair the SFSG and were highly involved in the development of the content of the power of green bonds in general and securitized green securities in particular.

Sustainability-targeting bonds: Are bonds issued by entities that are tied to a sustainability-themed 'use of proceeds' but secured against the entire balance sheet of the issuer. Based on the available principles and guidelines[26] created and used by the market (the Green Bond Principles (GBP), Social Bond Principles (SBP) and Sustainability Bond Guidelines (SBG)):

- Green bonds enable capital-raising and investment for new and existing projects with environmental benefits.
- Social bonds are 'use of proceeds' bonds that raise funds for new and existing projects with positive social outcomes.
- Sustainability bonds look for the application of the 'use of proceeds' bond concept to bonds financing both green projects and social projects.
- There are currently four types of bonds that fit under these three thematic categories:
- Standard Use of Proceeds Bond: A standard recourse-to-the-issuer debt obligation aligned with the GBP/SBP/SBG.
- Securitized Bond: A bond collateralized by one or more specific project(s) including but not limited to covered bonds, ABS, MBS and other structures and aligned with the GBP/SBP/SBG. The first source of repayment is generally the cash flows of the assets.
- Revenue Bond: A non-recourse-to-the-issuer debt obligation aligned with the GBP/SBP/SBG in which the credit exposure in the bond is to the pledged cash flows of the revenue streams, fees, taxes, etc. and whose use of proceeds go to related or unrelated project(s).
- Project Bond: A project bond for a single or multiple project(s) for which the investor has direct exposure to the risk of the project(s) with or without potential recourse to the issuer and that is aligned with the GBP/SBP/SBG.

26 https://www.icmagroup.org/green-social-and-sustainability-bonds/

When banks issue the first of these types of bonds, they are using the proceeds to fund lending to defined projects. This applies to private commercial banks as well as national development banks and other forms of sovereign, supranational and agency issuers. KfW is an example of a frequent issuer of green bonds that are used to finance green lending activities.

Sustainability-targeting ABS, including green residential mortgage-backed securities (RMBS): This is the second variation of green bonds as described above. Such securities consist of a bank or financial corporates identifying loans or receivables targeting some environmental or social sustainability outcome, tagging them, pooling and selling them as a bond inside a special purpose vehicle (SPV) or a similar acting entity such as a trust company in China. These bonds tend to be "true sales" and move risk off of banks' balance sheets.

2: CHINA ABS STATISTICS

CHINA ABS MARKET STATISTICS

BILLON CNY	CLO	CORP ABS	ABN	ASP	TOTAL	NO. OF ISSUANCE
Balance	749.9	1310.3	103	4.3	2167.5	
ISSUANCE						
2018	384.3	416	39.4	0	839.7	375
2017	597.2	885.7	57.5	1	1541.4	704
2016	390.9	500	16.7	3.3	910.9	514
2015	405.6	204.5	3.5		613.6	321
2014	282	40.1	8.9		331	104
2013	15.8	7.4	4.8		28	19
2012	19.3	3.2	5.7		28.2	13
2011		1.3			1.3	1
2010					0	
2009					0	
2008	30.2				30.2	8
2007	17.8				17.8	4
2006	11.6	16.4			28	10
2005	7.2	10.1			17.3	4
sum	2161.9	2084.7	136.5	4.3	4387.4	2077

Data Source: cn-abs.com, as of 3 Aug 2018

CHINA GREEN ABS DEALS

ISSUER	ASSET / ABS COLLATERAL	AMOUNT (CNY BN)
Huadian Fuxin Energy	Electricity infrastructure Receivables	0.84
Goldwind	Wind power revenue receivables	1.275
Wuxi Transport	Public Transport revenue receivables	1.98
Agricultural Bank of China	Loans	1.433
SPIC Ronghe Financial	Wind and Solar Lease	2.484
Gezhouba Lvyuan	Waste Recycling receivables	1.34
Beijing Water Enterprise	Sewage treatment receivables	2.1
Nantong Eco&Tech	Sewage treatment receivables	0.51
TGOOD	Power distribution revenue receivables	0.983
Sound	Sewage treatment receivables	0.82
Gezhouba	Hydroelectricity receivables	80
Wuhan Metro	Trust beneficiary rights	1.5
Guiyang Transport	Public Transport revenue receivables	2.65
Harvest Capital	Green CMBS mortgage	0.82
Tus Sound Holding	Trust beneficiary rights	0.445
Kunshan Public Transport	Bus fare receivables	0.28
China Resources Leasing	Leasing agreements receivables	1.3
Harvest Capital/CECEP	Commercial real estate mortgage loan	1
Hengan Electrical Engineering	Hydropower station feed-in tariff receivables	0.4
Nanjing Metro	Commercial properties receivables	1.2

Data Source: China Green Bond Market reports by Climate Bonds Initiative in partnership with China Central Depositing and Clearing Co. (CCDC)

3: LIST OF SECURITIZATION AND GREEN FINANCE REGULATIONS

Securitization Regulations

信贷资产证券化试点管理办法 中国人民银行 中国银行业监督管理委员会公告[2005]第7号	Administrative Measures for the Securitization of Credit Assets
金融机构信贷资产证券化试点监督管理办法 中国银行业监督管理委员会令2005年第3号	Measures for Supervising and Administrating the Pilot Securitization of Credit Assets by Financial Institutions
财政部、国家税务总局关于信贷资产证券化有关税收政策问题的通知 财税[2006]5号	Notice of the Ministry of Finance and the State Administration of Taxation on Relevant Issues concerning Taxation Policies on the Securitization of Credit Assets
信贷资产证券化基础资产池信息披露有关事项公告 中国人民银行公告[2007]第16号	Announcement on Matters concerning the Disclosure of Information of Underlying Asset Pool in the Securitization of Credit Assets
中国银监会办公厅关于进一步加强信贷资产证券化业务管理工作的通知 银监办发[2008]23号	Notice of China Banking Regulatory Commission on Further Improving the Management of Credit Assets Securitization Business
中国人民银行、中国银行业监督管理委员会、财政部关于进一步扩大信贷资产证券化试点有关事项的通知 银发[2012]127号	Notice of the People's Bank of China, the China Banking Regulatory Commission and the Ministry of Finance on Relevant Matters Concerning Further Expanding the Pilot Securitization of Credit Assets
中国人民银行、中国银行业监督管理委员会公告(2013)21号——关于进一步规范信贷资产证券化发起机构风险自留行为的公告 中国人民银行、中国银行业监督管理委员会公告[2013]21号	Announcement No. 21 [2013] of the People's Bank of China and the China Banking Regulatory Commission
中国银行业监督管理委员会办公厅关于信贷资产证券化备案登记工作流程的通知 银监办便函[2014]1092号	Notice of the General Office of the China Banking Regulatory Commission on the Workflow for the Recordation Registration of Credit Asset Securitization
中国证监会机构监管部《关于证券公司开展资产证券化业务试点有关问题的通知》2004年10月21日	Notice of the Institution Regulation Department of the China Securities Regulatory Commission on the issues concerning the development of Pilot Asset Securitization Business of Securities Companies (2014)
中国证券监督管理委员会公告[2014]49号——证券公司及基金管理公司子公司资产证券化业务管理规定、证券公司及基金管理公司子公司资产证券化业务信息披露指引、证券公司及基金管理公司子公司资产证券化业务尽职调查工作指引	Announcement of the China Securities Regulatory Commission No. 49 [2014]—Provisions on the Administration of the Asset Securitization Business of Securities Companies and the Subsidiaries of Fund Management Companies, Guidelines for the Disclosure of Information about the Asset Securitization Business of Securities Companies and the Subsidiaries of Fund Management Companies, and Guidelines for the Due Diligence of the Asset Securitization Business of Securities Companies and the Subsidiaries of Fund Management Companies
中国保监会关于印发《资产支持计划业务管理暂行办法》的通知 保监发〔2015〕85号	Notice of the China Insurance Regulatory Commission on Issuing the Interim Measures for the Administration of Asset Support Plans
国家发展改革委、中国证监会关于推进传统基础设施领域政府和社会资本合作(PPP)项目资产证券化相关工作的通知 发改投资[2016]2698号	Notice of the National Development and Reform Commission and the China Securities Regulatory Commission on Promoting the Work concerning the Asset Securitization of Public-Private-Partnership (PPP) Projects in the Traditional Infrastructure Field
财政部、中国人民银行、中国证监会关于规范开展政府和社会资本合作项目资产证券化有关事宜的通知 财金[2017]55号	Notice of the Ministry of Finance, the People's Bank of China, and the China Securities Regulatory Commission on Issues concerning Regulating the Asset Securitization of Public-Private-Partnership Projects
中国银行间市场交易商协会关于公布《非金融企业资产支持票据指引》及《非金融企业资产支持票据公开发行注册文件表格体系》的公告(2017修订)	Announcement of the National Association of Financial Market Institutional Investors on Issuing the Guidelines for the Asset-Backed Notes of Non-financial Enterprises and the System of Registration Documents and Forms of Public Offerings of Asset-Backed Notes of Non-financial Enterprises (2017 Revision)
证监会、住房城乡建设部关于推进住房租赁资产证券化相关工作的通知 证监发[2018]30号	Notice of the China Securities Regulatory Commission and the Ministry of Housing and Urban-Rural Development on Advancing the Relevant Work of House Leasing Asset Securitization

Green Finance Regulation

中国人民银行公告(2015)第39号——在银行间债券市场发行绿色金融债券有关事宜的公告	Announcement No. 39 [2015] of the People's Bank of China —Announcement on Matters concerning the Issue of Green Financial Bonds in the Interbank Bond Market
国家发展改革委办公厅关于印发《绿色债券发行指引》的通知 发改办财金[2015]3504号	Notice of the General Office of the National Development and Reform Commission on the publishing of the Guidance of Green Bond Issuance
上海证券交易所关于开展绿色公司债券试点的通知 上证发〔2016〕13号	Notice of the Shanghai Stock Exchange on Rolling out the Pilot Program concerning the Green Corporate Bonds
中国人民银行、财政部、发展改革委等关于构建绿色金融体系的指导意见 银发[2016]228号	Guiding Opinions of the People's Bank of China, the Ministry of Finance, the National Development and Reform Commission, and other Departments on Building a Green Financial System
中国证监会关于支持绿色债券发展的指导意见 中国证券监督管理委员会公告[2007]第6号	Guiding Opinions of the China Securities Regulatory Commission on Supporting the Development of Green Bonds
中国银行间市场交易商协会公告[2017]10号——关于发布《非金融企业绿色债务融资工具业务指引》及配套表格的公告ABN	Announcement of the National Association of Financial Market Institutional Investors No. 49 [2014]—on Issuing the Guidelines for the Green Financing Instruments of Non-financial Enterprises and the attached Forms
中国人民银行、中国证券监督管理委员会公告(2017)第20号——绿色债券评估认证行为指引(暂行)	Announcement No. 20 [2017] of the People's Bank of China and the China Securities Regulatory Commission—Guidelines for the Assessment and Certification of Green Bonds (Interim)
中国人民银行关于加强绿色金融债券存续期监督管理有关事宜的通知 银发[2018]29号	Notice of the People's Bank of China on Issues concerning Strengthening the Supervision and Administration of the Duration of Green Financial Bonds

APPENDIX 2 – ESG INVESTING: WHERE WE ARE AND WHAT'S NEXT

The Seven Tribes of Investing by Professor Cary Krosinsky

1. **Norms based screening** – effectively a type of negative screening, often a European strategy, typically involves avoiding sensitive sectors, using United Nations principles, including the Global Compact and the Guiding Principles on Business and Human Rights, as a minimum standard for investment.

2. **ESG Integration** –attempts to integrate environmental, social and governance considerations into existing investment process alongside financial factors, normally requires bringing in data from one or more external providers and ideally building in house analytical tools with in house resources.

3. **Thematic Investing** – typically private equity or venture capital in nature, but also including the rising area of public equities and private debt, "thematic investment" focuses on specific areas. This approach of sustainable investing seeking positive intentionality for improving environmental outcomes. For liquid credit, climate or Green Bonds are a growing area of interest within the space of thematic focus, as is the more nascent area of illiquid credit such as ESG private debt, Green Infrastructure and Green Real Estate investments generally belongs in this category as well.

4. **Value First** – foster societal improvement while allowing for the potential for financial outperformance. Growing rapidly and championed by the likes of Generation Investment Management and Parnassus Investments, both of whom have risen to manage US$20B or more in assets in recent years.

5. **Values First** -representing the roots of the field, practiced first and foremost as religious mandates, typically manifesting through applied negative screens on sectors such as alcohol, tobacco, weapons, and more recently including social and environmental factors (e. fossil fuel production).

6. **Community/Impact Investing** –community investing attempts to improve the well-being of a specific region or groups of targeted individuals with intentionality. Includes investing in microfinance, and the rapidly growing area of social entrepreneurship. Impact Investing has risen as a lens for investors seeking to have positive societal and environmental effect with their investments through intentionality (e.g. access to medicine, housing, education, financial services and healthcare for the world's poorest, making this the main area of focus for investors seeking to improve social outcomes).

7. **Engagement/advocacy** – openly through shareholder resolution and public discourse on issues such as stranded asset risk, as well as on compensation, tax and many other issues. It is also often practiced quietly, with agreements not to go public after extensive dialogue.

CASE STUDY 1:
SOCIAL RETURN ON INVESTMENT, SOCIAL HOUSING UK

Client:
Salix Homes

Key collaborators:
Salix Homes
New Barracks Cooperative

Key facts:

Retrofit programme value £1.9m

Estimated value of benefits to all stakeholders £3.4m

Estimated total social value added £1.58m

SROI Ration: £1.58 worth of social value will be created for every £1 invested (over a 20 year period)

Residents and installers/suppliers of the retrofit materials identified as benefitting the most

> Salix Homes identified that £1.58 worth of social value will be created for every £1 invested in their low carbon housing retrofit programme

Salix Homes initiated an estate-wide retrofit programme on the New Barracks Estate, Salford.

Arup undertook pre and post retrofit engagement programmes, opening a dialogue with stakeholders to develop impact maps that demonstrated the scale and reach of the investment and how specific activities affected individual groups. SROI methodology was used to articulate and monetise the economic, social and environmental value arising from the retrofit works.

The analysis has given Salix Homes a greater understanding of the value, translated into pence and pounds, of the social impact their projects create. Achieving a significant social return in Salford has provided robust evidence of the organisation's social credentials that will no doubt support their future projects.

CASE STUDY 2:
APPLYING TOTAL VALUE CAPTURE FOR TRANSPORT

Arup's approach for assessing and quantifying a wider range of benefits to determine a 'Total Value' approach for infrastructure investment and design decisions (source: Making the Total Value Case for Investment In Infrastructure and the Built Environment report by Arup)

WHO BENEFITS?	HOW BENEFIT?	HOW IS VALUE CREATED?	HOW CAN IT BE CAPTURED (FUNDING)?	HOW CAN IT BE LEVERAGED (FINANCE)?
Investors	ROI	Yield from investment	Finance pay back structure	Private investors
Economy	Travel time, access, productivity, education and skills	Increased individual and corporate income	General taxation Payroll tax	Public sector grants, borrowing, bonds
Landowners	Higher land and property values Ability to develop new places or in new ways	Increased yields from property New developments created and sold	Property taxes Selling land/air rights/ joint development Developer contributions or levies	Private or public sector finance
Infrastructure users and operators	Better transport and related commercial services	Users and operators' willingness to pay increases	User charges (tolls, fees) Operator access fees	Private or public sector finance
Society	Community cohesion, civic pride, belonging, wellbeing	Local community mixing, diversity and inclusion, public realm dwell time, mental health improvements	Beneficiary contributions e.g. developers, local business, health and social care sector, community organisations	Community investment funds Impact (infrastructure) investors Health sector contributions
Environment	Carbon storage, air quality, water management, urban heat island mitigation	Natural Capital and Ecosystem Service benefits	Beneficiary contributions e.g. developers, local business, green sector, environmental organisations	Green/SDG Bonds, EIB NCF Impact (infrastructure) investors Green sector contributions

Source: Making the Total Value Case for Investment in Infrastructure and the Built Environment, Arup

UN SDGs in the context of the 19th National Congress of the Communist Party of China

Select extracts from Xi Jinping's report at the 19th CPC National Congress and the potential overlap with the Sustainable Development Goals

- Furthering supply-side structural reform
- Making China a country of innovators
- Pursuing a rural vitalisation strategy
- Implementing the coordinated regional development strategy
- Making new ground in pursuing opening up on all fronts

- Giving priority to developing education
- Improving the quality of employment and raising incomes
- Strengthening the social security system
- Winning the battle against poverty
- Carrying out the Healthy China initiative
- Establishing a social governance model based on collaboration, participation and common interests

- Promoting green development
- Solving prominent environmental problems
- Intensifying the protection of ecosystems
- Reforming the environmental regulation system

Source: GoalsFirst

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