Sustainability Insights

Seizing the opportunities in nature to address the wider environmental challenges

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- Given the links between climate and biodiversity challenges, the holistic concept of Nature-based Solutions (NbS) can be attractive to investors to tackle not only one single environmental or societal cause but also to align their investments with initiatives such as the Paris Agreement or the UN Sustainable Development Goals (SDG). We also explore nature-related investment opportunities in our thematic top trend, "Investing for a Sustainable Future".
- With rising awareness of the biodiversity crisis post-COP15, efforts are moving towards protecting and restoring the Earth's ecosystems on land and in the seas. NbS can help address environmental challenges, providing benefits not only to nature but also to society and the economy. In order to meet the environmental ambitions to limit climate warming, stop biodiversity loss, and neutralise land degradation by 2030, financing of NbS needs to triple by the end of this decade, according to the UN's Environmental Program, and the private sector will play a key role.
- Forests are vital in providing habitat space for biological diversity as well as in mitigating climate change as a natural carbon sink. Yet deforestation is still occurring rapidly, mainly to create new agricultural land. Exploring NbS linked to forest protection and sustainable forest management practices, such as geospatial mapping, innovative IT-driven harvesting, and selective logging, can help to address both the biodiversity and climate change crisis. The proposed EU deforestation law might accelerate the momentum as well.
- Like forests, marine life and oceans are under significant threat despite their economic and societal benefits. With the recently signed High Seas Treaty, ambitions pick up the pace to protect the oceans in line with COP15's 30x30 headline target. With public funding falling short, private investors can find interesting opportunities in the marine protection space, such as conserving mangroves, while also aligning investments to the UN SDG 14.
- The transition of the agriculture sector to more sustainable ways of farming is underway, but with less than 10% of agriculture land globally being used in line with sustainable standards, there remains more room to adopt new innovative technologies of selective cropping and breeding and gene editing, to enhance the productivity yield and ensure food security as the global population continues to grow.
- Given the rapid climb in densely populated areas facing rising environmental and logistic challenges, green and smart urban development becomes an increasingly important topic and opportunity for investors. Nature-based infrastructure projects are not only a more cost-effective alternative but also more resilient to climate change while offering health and well-being benefits as well to society.

Nature-based solutions for a triple win

Following the COP15 in December, awareness of the biodiversity crisis has risen even though much of the challenge to preserve and restore biodiversity still remains to be tackled. While COP15 stopped short to make "nature positive," its slogan like "net zero" is in the climate discussion, the new global biodiversity framework and its 23 targets will still steer efforts around conservation, sustainable use, and fair sharing of the benefits of the biological diversity and its ecosystems. One way for investors to partake in addressing the biodiversity challenge and supporting the vast financing gap is through Nature-based Solutions (NbS).

NbS are described by the International Union of Conservation of Nature as "*actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits*". In short, NbS refer to various actions that can be adopted to safeguard, revive and manage the Earth's ecosystems in order to address challenges such as pollution, food insecurity, flooding and habitat loss, to name a few, while also delivering economic and societal benefits.

For investors, the holistic concept of NbS can be attractive as they can align to a single environmental cause (i.e., addressing deforestation or single-use plastics), but given the interconnectedness between nature and the climate, NbS can also help to align investments to the Paris Agreement as well as the UN Sustainable Development Goals (SDG).

Indeed, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services stated that 37% of climate change mitigation is derived from NbS. Moreover, the latest round of climate pledges, the so-called Nationally Determined Contributions (NDC) in 2021, which outlines a country's plan to achieve the Paris Agreement's ambition to limit global warming to well below 2°C, committed to also addressing the challenges to natural ecosystems, and 41% of the new climate pledges explicitly referred to NbS.

Given the link between the climate and biodiversity crisis, governments increasingly focus on nature in their Paris-aligned pledges

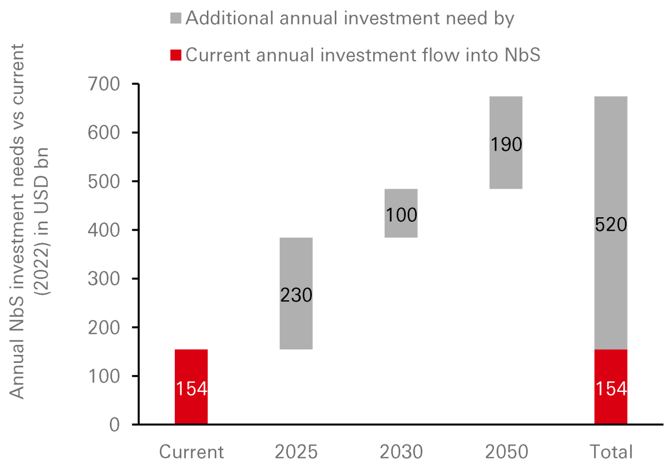
● NbS in updated NDC; red dots – NDCs explicitly mentioning "nature-based"

Source: Nature-based Solutions Policy Platform, 22 March 2023

This emphasizes the rising awareness of the biodiversity agenda, alongside the climate ambitions, as a more holistic viewpoint is adopted, acknowledging the mutual benefits of addressing both challenges at the same time. While, at the time of writing, there is no global framework around NbS in place, investors can refer to standards provided by the International Union for Conservation of Nature to better assess NbS projects when venturing into nature capital investments. Yet a universal concept around NbS would very likely accelerate the adoption and implementation of NbS, especially across the private sector.

Currently, NbS projects are still predominately financed by the public sector. In order to meet the environmental ambitions to limit climate warming, stop biodiversity loss and neutralize land degradation by 2030, financing of NbS needs to triple by the end of this decade, according to the 2022 State of Finance Report by the UN's Environmental Program. This financing gap underscores the need for investors to take action and support the transition to a more sustainable future. The mutual benefits of NbS to nature, society and the climate should create an appealing incentive to explore investment opportunities here. We dissect the vast nature of NbS in four select categories that highlight the interconnectedness of the nature-rooted challenges for the planet and society. These offer one approach to investing in nature, but we also explore broader investment opportunities in our thematic top trend, "Investing for a Sustainable Future".

NbS offer a great opportunity to achieve a "triple" win for the climate, biodiversity, and society, but the pace of financing needs to accelerate

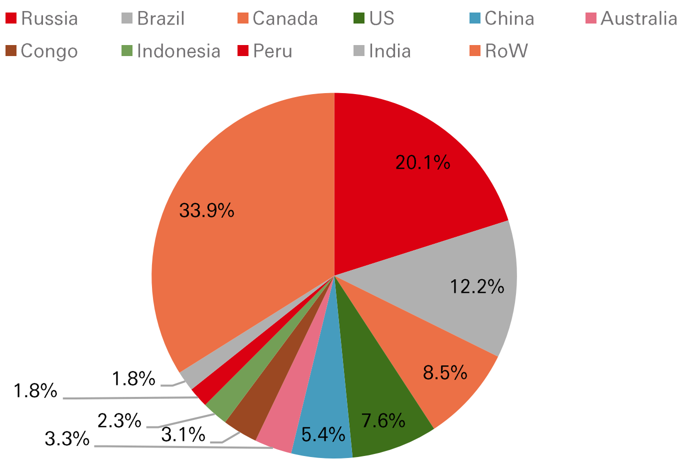


Source: UN Environment Programme – State of Finance for Nature 2022, HSBC Global Private Banking and Wealth, 22 March 2023. Forecasts are subject to change.

Fostering the power of trees to tackle the biodiversity and climate crisis

Forests play a vital role in the ambition to protect biodiversity and tackle the climate crisis. Around 1/3 of the Earth's land surface is covered by forests, offering habitat space for over 80% of global biological diversity. Moreover, forests are critical to global climate dynamics as they account for more than half of the global carbon stock, making them an important source to mitigate climate change.[1] This is also a key reason why many countries put a greater focus on forests compared to any other ecosystem in their climate pledges.

Forest area is concentrated, with 2/3 of forests found in ten countries



Source: UN Food and Agriculture Organisation, HSBC Global Private Banking and Wealth, 22 March 2023

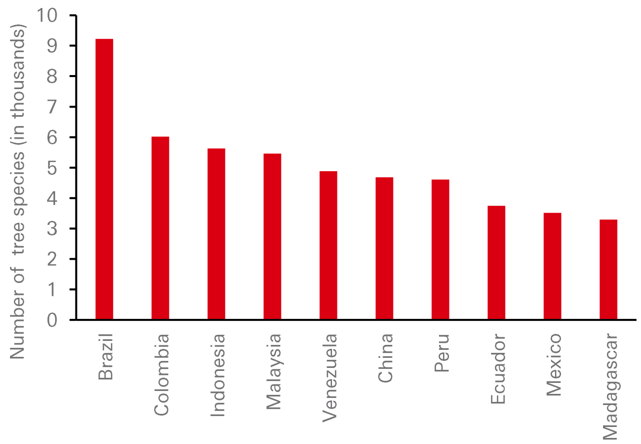
Conserving and restoring forests are crucial steps to tackle both biodiversity and climate challenges while bringing various economic benefits to the over 1.6bn people, primarily in Africa, Asia and Latin America, depending on forests. Yet industries in paper, pulp and timber production would need to revisit their practices, turning towards sustainable forest management in order to increase productivity and revenue. Indeed, the World Economic Forum estimates that the top 100 pulp and paper companies could face a $165bn revenue opportunity if all their products were derived from sustainable forest management-certified forests.

Despite the economic, ecological, and social importance of forests, their loss due to deforestation and degradation is still advancing rapidly. Even though the speed of deforestation peaked in the 1990s, 10mn hectares of forest were lost per annum globally between 2015 and 2020, according to the UN FOA, and if this pace were to continue until 2050, a further forest loss of the size of India would occur. While this is a global challenge, it is worth pointing out that over half of the world's forests are located in Russia, Brazil, Canada, the US and China, and 1/3 of the remaining rainforests are in Brazil. Indeed, over 70% of Brazil's land is covered by the Amazon and Cerrado region (a tropical savannah and wetland). But despite its rich nature, Brazil faces the greatest annual average deforestation rate globally, accounting for nearly 15% of the total annual deforestation according to Greenpeace estimates. The main driver for deforestation in the Amazon is the cattle industry, however, more generally and globally speaking, the deforested land is primarily turned into new agricultural space.

In Brazil, hopes are high that under the recently appointed President Lula, the deforestation momentum will reverse. The Brazilian Development Bank's Amazon Fund has been revived, and a newly formed Commission for the Prevention and Control of Deforestation and Burning is expected to present an action plan to tackle the crisis in Q2 2023. While the political debate in Brazil will have a significant impact on the Amazon's future, other Latin American countries in Central and South America have shown ways to address the deforestation challenge. For example, Costa Rica and Colombia have implemented a carbon tax to fund nature conservation. In Costa Rica, the forest surface has climbed up to 52% in 2019 (from 26% in 1983), making the country an example of moving from deforestation to forest restoration. Similar taxes in other countries could help to invest in nature-based solutions focusing on forest preservation.

For investors, exploring NbS linked to forest protection and reforestation offers opportunities to address both the biodiversity and climate change challenges. While forest-NbS can focus on the planting of trees and facilitating the replenishment of the forest ecosystem, companies in the timber, pulp and paper industries might want to consider the long-term advantages – for business and the planet – of adopting natural forest management practices such as geospatial mapping of forests to improve the forest health, innovative IT-driven harvesting, and selective logging.

Brazil is home to the Amazon, which in turn offers habitat to a significant number of species and a vast biodiversity there



Source: UN Food and Agriculture Organisation, HSBC Global Private Banking and Wealth, 22 March 2023

For businesses, the regulatory pressure to adopt holistic business practices that include the consideration of their impact on nature and society continues to rise. On the topic of forests, the EU has proposed a deforestation law in late 2022, which would require companies of select sectors to conduct thorough due diligence of their supply chains to ensure their goods do not result in deforestation or forest degradation. The law is expected to be approved in EU Parliament in the coming weeks, which would open the door to making it effective as early as 2024. Given that less than 1/3 of the major EU companies have a deforestation

1) UN Food and Agriculture Organization - State of the World's Forests 2022

commitment in place, according to the Global Canopy Forest 500 Annual Report Assessment, we think there will be a greater awakening to act amongst corporates to protect forests.

Restoring the health and biodiversity of the marine ecosystems

Marine ecosystems have come under significant pressure from various human practices such as overfishing, aquafarming, plastic and general pollution. Rising sea temperatures due to global warming add to the threats, which has already led to the steep decline in global coral reefs, with over 60% of them facing an imminent threat.

Yet similar to forests, marine ecosystems offer significant services to the wider natural ecosystem and society by providing food resources, offering severe weather protection and enabling recreational activities, for example. They also play a key role in the regulation of global climate dynamics, being a natural carbon sink and oxygen producer thanks to the various organisms inside, especially the phytoplankton.

Again, NbS can offer a wide variety of solutions to address issues ranging from restoring marine biodiversity, reducing flooding risks and mitigating climate change. One example is the protection work around mangroves, which can help reduce the erosion of coastal lines as well as the impact of severe weather storms or waves. The benefit from cherishing mangroves' ability to reduce global flood damage was estimated at over USD82bn annually, according to the World Economic Forum. At the same time, given mangroves' significant carbon storage capacity despite occupying only a small fraction of coastal areas globally, mangroves-focused NbS can support the broader fight against climate change, and consequently more nations are integrating marine NbS in their Paris-aligned climate pledges. Moreover, to protect marine ecosystems, sustainable fishing and aquaculture practices need to be ensured.

From an investment perspective, there remains a tremendous opportunity for the private sector to step up. EcoShape, a public-private foundation, estimates that the financing required to protect coastal areas until 2100 stands at $103-215bn annually. With public funding falling short, private investors can find interesting opportunities in the marine protection space, while also aligning their investments to the UN SDG 14, which aims to "*conserve and sustainably use the oceans, seas, and marine resources for sustainable development*".

The COP15 concluded with the headline target of 30x30, which entails protecting at least 30% of global land and sea areas by 2030. This brings into focus the rising actions needed in the coming years to fulfil this ambition. The High Seas Treaty signed earlier this year marks a key milestone in moving towards this ambition post-COP, providing a legal framework for the conservation and sustainable use of marine areas beyond national jurisdictions.

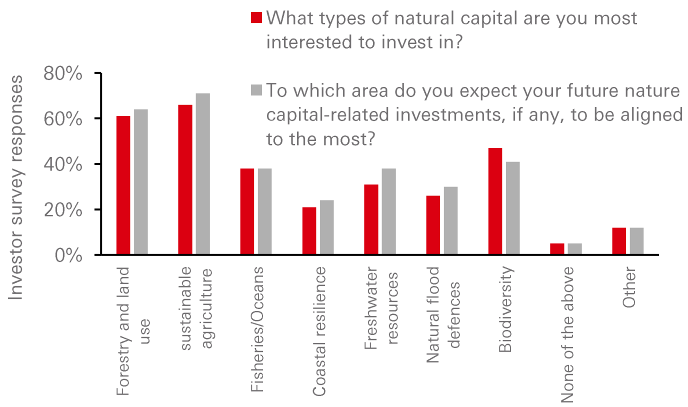
Starting from the ground up to nourish the Earth and society

Soil is an underestimated earth element in the biodiversity loss discussion, yet it is home to a wide variety of organisms. While over 50% of the Earth's vegetated surface is used for agricultural purposes, its yield has been declining due to overexploitation and intensive modern agrarian practices. The European Commission estimates that 14 of the 27 EU countries are facing 40% of their soils to be at high risk of biodiversity loss. With the global population expected to climb towards 10bn by 2050, there is a need to revive the land and transform agriculture practices as the majority of foods in both a plant-based and animal-rich diet relies on the health of the Earth's soil. Regenerative agriculture practices focus on enhancing the crop yield alongside the health of the ecosystem, by restoring soil fertility, avoiding the use of synthetic fertilizers and improving water flows. These practices can also help to address the loss of forests, as deforestation is often a way to seek out new agricultural land.

The agriculture sector has already embarked on the transition to more sustainable ways of farming, however, with less than 10% of agricultural land globally being used in line with sustainable standards [2], there remains much more room for wider adoption. Raising awareness and offering education is one step in addressing the challenge, however, deepening technical skills and leveraging innovative biotechnologies, such as gene editing, selective cropping and breeding, will play a key role in the wider transformation of the sector. Integrating technology would also allow for better data and tracking systems in place to monitor the status of soil and rising threats, in order to ensure food security.

Clearly, such actions would come at a cost, but they would also enable a better allocation of funding. According to the World Economic Forum, only 15% of the approximately $530 bn annual public subsidies and market price support measures for farmers are aligned with sustainable outcomes.

Natural capital is attracting investors' interest, with sustainable agriculture and forestry leading



Source: The Nature Conservancy - Investing in Nature: Private Finance for Nature (2019), HSBC Global Private Banking and Wealth, 22 March 2023

2) J. Pretty et al. (2018), Global assessment of agricultural system redesign for sustainable intensification

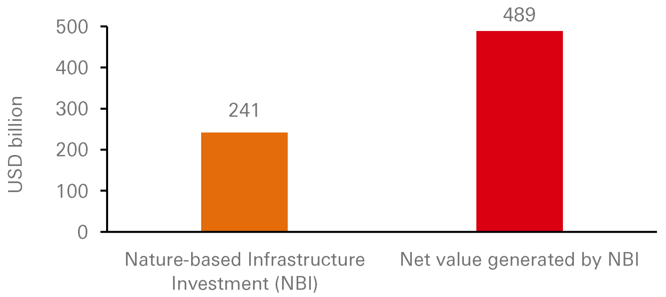
With investors also interested in supporting the sustainable agriculture transition, we think the preservation of soil biodiversity and adoption of regenerative agriculture practices can not only benefit the food and land use systems but will trigger a positive impact in the chemical and consumer goods sectors. Wider challenges of food security, nutrition and health should also stand to benefit.

Incorporating nature into the city planning

When speaking about nature's ecosystems and biodiversity, cities might not come immediately to our minds. But given the rapid growth of the urban living area, sustainable and green city planning is ever more important. The challenges of waste and water management, energy consumption, as well as pollution need to be rapidly addressed if the urban population is expected to reach 7bn by 2050 (from 4.2bn in 2018), as per World Economic Forum estimates. Currently, cities consume 75% of natural resources, produce half of the global waste and account for 60-80% of global GHG emissions, according to our research, underscoring the environmental challenge of urban space and the need for cleaner, innovative infrastructure solutions.

Examples of green urban developments include urban forests/parks, green roofs and vertical gardens and renatured urban waterways. These solutions have different benefits for city dwellers, ranging from air purification, recreation, health & wellbeing, and biodiversity conservation. Moreover, nature-based infrastructure is said to cost half the equivalent of grey infrastructure while generating nearly 1/3 of additional value for society and the earth, according to the nature-based infrastructure global research centre. The International Institute for Sustainable Development estimates that making only 11% of the total annual infrastructure investments through NbS could save $248bn annually, which could be re-directed to other investment priorities. In addition to the potential cost savings, nature-based infrastructure tends to have lower maintenance requirements but higher resilience to climate change, making it a more efficient and long-lasting solution. Given the rapid climb in densely populated areas facing rising environmental challenges, green and smart urban development can thus be an interesting investment opportunity for investors.

Green infrastructure investments are not only more cost-efficient but also provide additional ecosystem benefits



Source: Nature-based Infrastructure Global Research Centre, HSBC Global Private Banking and Wealth, March 2023

Risk Disclosures

Risks of investment in fixed income
There are several key issues that one should consider before making an investment into fixed income. The risk specific to this type of investment may include, but are not limited to:

Credit risk
Investor is subject to the credit risk of the issuer. Investor is also subject to the credit risk of the government and/or the appointed trustee for debts that are guaranteed by the government.

Risks associated with high yield fixed income instruments
High yield fixed income instruments are typically rated below investment grade or are unrated and as such are often subject to a higher risk of issuer default. The net asset value of a high-yield bond fund may decline or be negatively affected if there is a default of any of the high yield bonds that it invests in or if interest rates change. The special features and risks of high-yield bond funds may also include the following:

- Capital growth risk - some high-yield bond funds may have fees and/ or dividends paid out of capital. As a result, the capital that the fund has available for investment in the future and capital growth may be reduced; and
- Dividend distributions - some high-yield bond funds may not distribute dividends, but instead reinvest the dividends into the fund or alternatively, the investment manager may have discretion on whether or not to make any distribution out of income and/ or capital of the fund. Also, a high distribution yield does not imply a positive or high return on the total investment.
- Vulnerability to economic cycles - during economic downturns such instruments may typically fall more in value than investment grade bonds as (i) investors become more risk averse and (ii) default risk rises.

Risks associated with subordinated debentures, perpetual debentures, and contingent convertible or bail-in debentures
- Subordinated debentures - subordinated debentures will bear higher risks than holders of senior debentures of the issuer due to a lower priority of claim in the event of the issuer's liquidation.
- Perpetual debentures - perpetual debentures often are callable, do not have maturity dates and are subordinated. Investors may incur reinvestment and subordination risks. Investors may lose all their invested principal in certain circumstances. Interest payments may be variable, deferred or cancelled. Investors may face uncertainties over when and how much they can receive such payments.
- Contingent convertible or bail-in debentures - Contingent convertible and bail-in debentures are hybrid debt-equity instruments that may be written off or converted to common stock on the occurrence of a trigger event. Contingent convertible debentures refer to debentures that contain a clause requiring them to be written off or converted to common stock on the occurrence of a trigger event. These debentures generally absorb losses while the issuer remains a going concern (i.e. in advance of the point of non-viability). "Bail-in" generally refers to (a) contractual mechanisms (i.e. contractual bail-in) under which debentures contain a clause requiring them to be written off or converted to common stock on the occurrence of a trigger event, or (b) statutory mechanisms (i.e. statutory bail-in) whereby a national resolution authority writes down or converts debentures under specified conditions to common stock. Bail-in debentures generally absorb losses at the point of non-viability. These features can introduce notable risks to investors who may lose all their invested principal.

Contingent convertible securities (CoCos) or bail-in debentures are highly complex, high risk hybrid capital instruments with unusual loss-absorbency features written into their contractual terms. Investors should note that their capital is at risk and they may lose some or all of their capital.

Changes in legislation and/or regulation
Changes in legislation and/or regulation could affect the performance, prices and mark-to-market valuation on the investment.

Nationalisation risk
The uncertainty as to the coupons and principal will be paid on schedule and/or that the risk on the ranking of the bond seniority would be compromised following nationalization.

Reinvestment risk
A decline in interest rate would affect investors as coupons received and any return of principal may be reinvested at a lower rate. Changes in interest rate, volatility, credit spread, rating agencies actions, liquidity and market conditions may have a negative effect on the prices, mark-to-market valuations and your overall investment.

Risk disclosure on Dim Sum Bonds
Although sovereign bonds may be guaranteed by the China Central Government, investors should note that unless otherwise specified, other renminbi bonds will not be guaranteed by the China Central Government. Renminbi bonds are settled in renminbi, changes in exchange rates may have an adverse effect on the value of that investment. You may not get back the same amount of Hong Kong Dollars upon maturity of the bond. There may not be active secondary market available even if a renminbi bond is listed. Therefore, you need to face a certain degree of liquidity risk.
Renminbi is subject to foreign exchange control. Renminbi is not freely convertible in Hong Kong. Should the China Central Government tighten the control, the liquidity of renminbi or even renminbi bonds in Hong Kong will be affected and you may be exposed to higher liquidity risks. Investors should be prepared that you may need to hold a renminbi bond until maturity.

Alternative Investments
Hedge Fund - Please note Hedge Funds often engage in leveraging and other speculative investment practices that may increase the risk of investment loss. They can also be highly illiquid, are not required to provide periodic pricing or valuation information to investors, and may involve complex tax structures and delays in distributing important information. Alternative investments are often not subject to the same regulatory requirements as, say, mutual funds, and often charge high fees that may potentially offset trading profits when they occur.
Private Equity - Please note Private Equity is generally illiquid, involving long term investments that do not display the liquid or transparency characteristics often found in other investments (e.g. Listed securities). It can take time for money to be invested (cash drag) and for investments to produce returns after initial losses.

Risk disclosure on Emerging Markets
Investment in emerging markets may involve certain, additional risks which may not be typically associated with investing in more established economies and/or securities markets. Such risks include (a) the risk of nationalization or expropriation of assets; (b) economic and political uncertainty; (c) less liquidity in so far of securities markets; (d) fluctuations in currency exchange rate; (c) higher rates of inflation; (f) less oversight by a regulator of local securities market; (g) longer settlement periods in so far as securities transactions and (h) less stringent laws in so far the duties of company officers and protection of Investors.

Risk disclosure on FX Margin
The price fluctuation of FX could be substantial under certain market conditions and/or occurrence of certain events, news or developments

and this could pose significant risk to the Customer. Leveraged FX trading carry a high degree of risk and the Customer may suffer losses exceeding their initial margin funds. Market conditions may make it impossible to square/close-out FX contracts/options. Customers could face substantial margin calls and therefore liquidity problems if the relevant price of the currency goes against them.

The leverage of a product can work against you and losses can exceed those of a direct investment. If the market value of a portfolio falls by a certain amount, this could result in a situation where the value of collateral no longer covers all outstanding loan amounts. This means that investors might have to respond promptly to margin calls. If a portfolio's return is lower than its financing cost then leverage would reduce a portfolio's overall performance and even generate a negative return

Currency risk – where product relates to other currencies
When an investment is denominated in a currency other than your local or reporting currency, changes in exchange rates may have a negative effect on your investment.

Chinese Yuan ("CNY") risks
There is a liquidity risk associated with CNY products, especially if such investments do not have an active secondary market and their prices have large bid/offer spreads.

CNY is currently not freely convertible and conversion of CNY through banks in Hong Kong and Singapore is subject to certain restrictions. CNY products are denominated and settled in CNY deliverable in Hong Kong and Singapore, which represents a market which is different from that of CNY deliverable in Mainland China.

There is a possibility of not receiving the full amount in CNY upon settlement, if the Bank is not able to obtain sufficient amount of CNY in a timely manner due to the exchange controls and restrictions applicable to the currency.

Illiquid markets/products

In the case of investments for which there is no recognised market, it may be difficult for investors to sell their investments or to obtain reliable information about their value or the extent of the risk to which they are exposed.

Environmental, Social and Governance ("ESG") Customer Disclosure

In broad terms "sustainable investments" include investment approaches or instruments which consider environmental, social, governance and/or other sustainability factors to varying degrees. Certain instruments we classify as sustainable may be in the process of changing to deliver improved sustainability outcomes.

There is no guarantee that sustainable investments will produce returns similar to those which don't consider these factors. Sustainable investments may diverge from traditional market benchmarks.

In addition, there is no standard definition of, or measurement criteria for, sustainable investments or the impact of sustainable investments. Sustainable investment and sustainability impact measurement criteria are (a) highly subjective and (b) may vary significantly across and within sectors.

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Sustainable investing is an evolving area and new regulatory frameworks are being developed which will affect how sustainable investments can be categorised or labelled. An investment which is considered to fulfil sustainable criteria today may not meet those criteria at some point in the future.

Greenwashing risk is defined as giving a false impression or misleading information of a product's climate and environmental friendly credentials and, whilst not considered a standalone risk, can manifest through sales outcomes, marketing materials, product design and external disclosures at product and firm level.

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