Sustainability Assessment Metric Development for Green Investment and Portfolio Decarbonization

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Sustainable Investment and the ESG

There are many terms used in green and sustainable finance, including ESG investments, ethical investments, impact investments, responsible investments, SRI investments, and values-based investments. There are a number of investment approaches and strategies aimed at delivering and sustaining positive environmental and social impacts (and/or avoiding negative impacts), along with financial returns. There are varying degrees of differences and similarities between the terms, even though they are frequently used interchangeably.

Sustainability investing involves an ethical, moral, and social approach to investing and investment decision-making, based on philosophical principles, as well as profit considerations. Money should be used to create social value, not just wealth, and transactions should be based on economic activity rather than financial engineering. Additionally, harmful sectors and firms are reduced or eliminated from investment. To support the transition to a more sustainable world and to bring about positive environmental and social benefits, these objectives also call for sustainable investments. By minimizing climate, environmental, and sustainability risks and maximizing opportunities brought about by the move to net zero, it is intended to have a positive effect on the environment and society.

An Environmental, Social and Governance (ESG) approach is intended to integrate these factors into traditional financial analysis of investments. One or more ESG factors may increase the risk profile of an investment (e.g. if assets are exposed to substantial climate risks), mispricing due to inaccurate interest rates, or the potential returns on offer (e.g. if a company has developed a new, emissions-reducing technology). There is no single method for assessing ESG factors, or for labelling an investment or fund as 'ESG', but in general they might encompass one or more of the following factors:

- Environmental factors: Energy use (and mix of renewable/non-renewable energy), emissions, waste production, impact on the physical environment
- Social factors: Human rights, equality, engagement with and impact on communities, employee relations
- Governance factors: Quality of board and senior management, shareholder rights, transparency and disclosure

Whilst there is at the present time a strong focus by many on environmental factors, especially climate-related risks and opportunities, social and governance factors are often interlinked with these; for example, the effects of a firm's activities on communities, and its approach to the disclosure of climate-related risk when we refer more holistically to sustainable finance.

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In this research, we discuss the different sustainable investment strategies, including thematic sustainable investing and the various types of screening in green investments. We then deliberate on the many interlinked factors that combine to drive the growth of sustainable investment, and determine their three key drivers, which are risk, regulation and returns. Finally, we propose the Sustainability Assessment Metric tool in order to address some of the issues related to the decarbonization of investment portfolios as well as to measure the impact of sustainable investments.

Sustainable Investment Strategies: From Light to Dark Green

Environmental, Social and Governance (ESG) screening is generally seen as a 'positive screening' or 'inclusive screening' approach to investing, as – usually – investments will be identified that exhibit favourable ESG factors. Some investment managers and funds use 'negative screening' by excluding some sectors such as gambling, pornography, alcohol and weaponry, very similar to Islamic Finance.

In order to satisfy the different levels of adherence to the sustainable investing principles, we may choose to adopt a range of strategies to select investments and construct portfolios that meet sustainable investment criteria perceived by investors and investment managers. These are presented on a spectrum from 'light green' to 'dark green', with the latter representing the most complete and holistic approach to sustainable investment. Adopting dark green strategies can be very time and resource intensive, however, especially for individual investors. Investors and investment managers may also adopt active or passive investment strategies, or a combination of both.

Very Light Green: Negative Screening

Criteria are set by investors and/or investment managers, in line with their ethical and religious beliefs, values, preferences and investment aims; in the context of sustainable investment, these usually refer to the exclusion of environmentally and socially harmful sectors such as fossil fuels, alcohol, gambling and pornography.

Negative screening does not necessarily mean that prohibited activities are completely excluded from a fund or portfolio; generally, assets may be included if less than 15% of revenues are generated from the prohibited activity (e.g. a retailer may be included if less than 15% of its overall revenue comes from the sale of alcohol). These are known as 'materiality thresholds' or 'acceptance levels' and help investors and investment managers build diversified portfolios.

Negative screening (subject to materiality thresholds) can ensure that investments avoid harmful sectors and activities, and therefore reduce exposure to climate, environmental and other sustainability risks, but they avoid harm rather than seek to achieve positive environmental and social returns. In doing so, they may miss the opportunity to identify firms, sectors and activities that will benefit from the shift to a more balanced ecosystem, and the financial and impact returns accruing from these.

Light Green: Positive Screening

The opposite of 'negative screening', 'positive screening' refers to the inclusion

of assets, companies or sectors in an investment portfolio that meet predefined criteria determined by investors and/or investment managers. It is often used in conjunction with negative screening, so that – in the context of sustainable investment – portfolios comprise investments that 'do good' and avoid investments that would have negative impacts on the environment and society. Materiality thresholds may also be used to help build diversified portfolios, in a similar manner to that described above. By adopting a positive screening approach, investors are more likely to benefit from investments in firms, sectors and activities that will benefit from the transition to a more sustainable world, as well as avoiding climate, environmental and other sustainability risks.

Positive screening criteria may be wide and varied, and may be applied at sectoral level (e.g. invest in renewable energy, clean transport and climate-resilient infrastructure) and/or asset level. In the context of sustainable investment, ESG ratings and scores, or other labels and certifications, are often used to determine inclusion on the basis that these signal the positive environmental and/or social credentials of the investment. As we already noted, however, the lack of a common, agreed methodology for calculating ESG scores and ratings (there are more than 1,000 different ESG scores and ratings available) makes it difficult for investors to compare different potential investments. Furthermore, scores and ratings that outweigh governance factors may lead to investment in sectors or firms that damage the environment or society.

Green: Active ESG Investing

To overcome some of the drawbacks of a positive screening approach relying on ESG scores and ratings, investors and investment managers can adopt a more active investment strategy which may involve a "best-in-class" approach, where funds and portfolios are built from assets with only the highest ESG scores and ratings in each sector (e.g. the highest 10%). This may help overcome some of the drawbacks with such scores and ratings described above and filter out less environmentally and socially sustainable activities and firms.

In addition, investors and investment managers may supplement ESG scores and ratings with their own (or independent) analysis of potential investments' environmental and social impacts – both positive and negative. This is costly and time-intensive, however, and therefore most relevant to large institutional investors with the resources to undertake such an analysis.

Dark Green: Impact Investing

Impact investing requires measurable environmental and/or social returns alongside financial returns, but where such returns can be identified, measured and reported, investors can have greater confidence in the environmental and social performance of investments. Rather than rely on ESG scores and ratings developed by others, impact investors and investment managers seek to identify, understand and quantify the environmental and social benefits of their ventures.

However, impact measurement can be intricate, challenging, time-consuming and resource-intensive and is therefore likely to be undertaken only by specialists and/or large institutional investors. The measurement of social and other

sustainability returns is supported by the Impact Reporting and Investment Standards (IRIS) developed by the Global Impact Investment Network (GIIN), which sets out 16 impact categories and is aligned with the UN Sustainable Development Goals. Organizations like the Carbon Disclosure Standards Board (CDSB) and Carbon Disclosure Project (CDP) work to standardize the measurement of greenhouse gas emissions. The IRIS+ Core Metrics provide consistent and comparable data for assessing the environmental and broader sustainability impacts of investments. It is impossible to find one single good way to measure impact — there are many useful approaches, processes, and frameworks, but there is no magic bullet. The importance of measuring impact cannot be overstated, but it should be understood that it is almost impossible to measure it perfectly.

Very Dark Green: Shareholder/ Stakeholder Active Involvement

Arguably, the deepest green investment strategy is to engage in shareholder activism. A shareholder activist is a person or entity who uses his, her or its rights to influence change in a company through exercising (or threatening to exercise) their voting rights. The activist may be a highly motivated individual or a large asset manager or institutional investor with a mandate to engage in active stewardship of the investments in their portfolio(s).

Increasingly, active involvement includes sustainability considerations; for example, seeking to influence a company's environmental policies, corporate culture, governance structure, diversity and inclusion or strategy and leadership overall. This may be driven by a sense of environmental activism, by a desire from investors to encourage companies to better identify and manage climate, environmental and social sustainability risks, by a belief that better returns can be gained by aligning a company's strategy and activities with sustainability objectives, or by a combination of all of these. The growth in disclosures on environmental and other sustainability factors, prompted by regulators and bodies such as the TCFD, seems likely to encourage increased levels of shareholder activism from both individuals and institutional investors as companies' strategies, activities, operations and exposure to environmental and social factors become apparent.

Thematic Sustainable Investment

In thematic sustainable investing, investors can invest in solutions for specific environmental, social, and governance issues, such as waste management, forestry that is sustainable, inclusive finance, and healthcare.

Investors who adopt a thematic approach to sustainable investing are looking to capitalize on the growth potential of companies that are at the forefront of addressing the world's most pressing environmental and social challenges. By investing in these companies, they aim to generate financial returns while also contributing to a better world.

Thematic sustainable investments can take many forms, including exchange-traded funds (ETFs), mutual funds, and impact investing funds. These investments are designed to provide exposure to a specific sustainability theme, such as renewable energy or sustainable agriculture, and to offer a way for investors to align their portfolios with their values and priorities.

Costs will significantly increase due to the physical, transitional, and liability risks of climate change, and reduce returns from sectors and firms most exposed to these, and stranded assets will reduce investment values, potentially to zero in some cases. The transition to a more sustainable, low-carbon world will benefit some industries and businesses, generating long-term financial returns in addition to favourable environmental and other sustainability benefits.

The major investment themes for the future are likely to be driven by a number of factors, including technological advancements, demographic shifts, and the ongoing push for sustainability and social responsibility. Some of the most prominent investment themes for the future include:

a. Clean Energy: As governments and businesses strive to reduce their carbon footprint and achieve their sustainability goals, the transition to clean energy is anticipated to continue. This includes financial investments in energy efficiency, energy storage, and renewable energy technologies like wind, solar, and hydro.

b. Green Transport: With green transportation investments, many jobs can be created quickly, as well as long-term jobs in asset operations and management. Additionally, they can have a large economic multiplier effect.

c. Healthcare and Wellness: An ageing population and increasing awareness of the importance of healthy living are driving demand for products and services that promote wellness and prevent disease. This includes investments in areas such as telemedicine, personalized medicine, and healthy living products.

d. Infrastructure: As cities continue to grow, the need for modern and efficient infrastructure is becoming increasingly pressing. This includes investments in areas such as transportation, water and waste management, and smart cities.

e. Sustainable Agriculture: The demand for sustainable and environmentally friendly agriculture practices is growing as concerns about food security and the impact of agriculture on the environment continue to rise. This includes investments in areas such as precision agriculture, organic farming, and sustainable seafood.

f. Technology-driven Applications: The rise of technology is driving rapid changes across many industries, and the demand for digital solutions is likely to continue to grow, including in sustainability. This includes GreenTech investments in areas such as green buildings, renewable energy, sustainable agriculture, wastewater management, etc., using technology like artificial intelligence, blockchain, and the Internet of Things via 5G networks.

These themes are likely to be of interest to both public and private investors, and there is likely to be increasing demand for investment opportunities that align with these themes. As carbon pricing and other policies and regulatory drivers develop, investors will move away from carbon-intensive companies as they become less attractive, and into lower carbon alternatives. It will also become a source of embarrassment to be unsustainable, and harder to hide negative environmental and social impacts of business as disclosure and reporting becomes wider, more transparent and more easily accessed and shared.

Pursuing Sustainable Investment Growth

In recent years, sustainable investment has gained substantial momentum in both retail and institutional markets. The Global Sustainable Investment Alliance estimates that sustainable investment reached $35.3 trillion in 2020, up 15% from the two years since 2018. Sustainable investment assets under management accounted for nearly 36% of total global assets under management (an increase from approximately 33.5% in 2018). Growth continues to accelerate in 2021; total global investment in sustainable investment funds exceeded $2 trillion in the first quarter of the year alone (Morningstar, 2021). According to the Morgan Stanley Institute for Sustainable Investing, interest in sustainable investing among millennial investors increased significantly from 84% in 2015 to 95% in 2019.

At institutional level, a study by Cambridge Associates (2020) found the number of institutional investors globally reporting the adoption of sustainable and impact investment strategies had grown 146% between 2016 and 2020, with particularly marked growth in the UK and Europe of 250% between 2018 and 2020. Signatories to the UN Principles for Responsible Investment (PRI) commit to incorporating sustainable investment strategies into their investment decision-making. 98% of UN PRI signatories in equity markets, 91% in fixed income markets and 94% in private markets reported they incorporated ESG factors into investment decision-making, according to the 2020 PRI Annual Report.

In order to better coordinate the expanding number of investor initiatives, support institutional investors addressing climate change, and highlight the steps some investors are already taking to improve their climate-related decision-making and risk reporting, seven major groups that work with investors, including the PRI, Carbon Disclosure Project (CDP), and UNEP Finance Initiative (UNEP FI), launched the “Investor Agenda” in 2018. These groups include the PRI, CDP, and UNEP FI. The Agenda aims to persuade other institutional investors, asset owners and managers, and pension funds to increase their sustainable investments to support the transition to a low-carbon world through peer pressure and the sharing of best practices.

There are many interlinked factors that combine to drive the growth of sustainable investment, including changing demographics and changing consumer and investor values and preferences. Three key drivers are: risk, regulation and returns.

I. Risk

In addition to a growing understanding of more general environmental and sustainability risks, there is now a significantly greater understanding, appreciation, and disclosure of climate risks (physical, transitional, and liability risks). Physical climate change impacts disrupted supply chains or production, which resulted in higher costs for businesses or increased investment in transportation infrastructure. Changing consumer preferences, alternative low-carbon business models and technologies and evolving regulation to support countries and the global transition to net zero increase the transition risks faced by many businesses. Firms in high-carbon, high-emission sectors, and other segments with a harmful effect on nature or society face increased costs from litigation, and other liability risks.

The Economist Intelligence Unit (2020) estimates that adverse effects of climate change on global assets under management at $4.2 trillion in present value, and at up to $43 trillion by 2100. The Cambridge Institute for Sustainability Leadership (2015) has estimated that the effects of climate change on investments could lead to reductions of up to 45% of the value of global equity portfolios, and of up to 23% losses in fixed income (debt) portfolios. There is a wide range of impacts that could have significant effects on investments at sector, regional, country and/or firm and asset level, including:

- Rising costs due to physical risks brought on by climate change, such as an increase in the frequency and intensity of extreme weather events. Over the past 30 years, losses from these events have roughly quadrupled to an average of $140 billion annually, with losses in some recent years being significantly higher
- Increased costs of liability risks arising from harmful environmental impacts, and other higher regulatory costs
- The implementation of a reasonable carbon price, or the IMF's suggested $75 per tonne of carbon dioxide, on a global scale
- Changing consumer preferences leading to a substantial decrease in demand for high-carbon and other unsustainable products and services
- Reputational risk
- Significant asset impairment and stranding; limiting emissions to restrict global warming to below 2oC would leave most of the current oil, gas and coal assets stranded.

Sustainable investment strategies can successfully mitigate such risks, and there is evidence that this is the case. A Morgan Stanley report (2021), for example, concluded that sustainable investment contained less risk, regardless of asset class, compared with 'traditional' alternatives. Sustainable investments were also more resilient against market downturns and recessions, at least in the US: during 2008, 2009 and 2015, traditional funds in the US were much more likely to report a loss than sustainable funds. Sustainable investments were also found to perform better than their traditional counterparts at the beginning of the COVID-19 pandemic, due to their lower exposure to carbon risk when demand for oil fell substantially in 2020.

II. Regulations

A recent survey by Schroders (2020) found that 49% of institutional investors reported that regulatory and industry pressure was a key motivation for the adoption of sustainable investment strategies. We examined the emergence and development of policy and regulation to lead and support the shift to a world that is more sustainable and low-carbon. As we discussed, to date, much of this has been focused on addressing climate change, with the Paris Agreement (2015) supported by an increasing range of policy interventions at global, regional (e.g. EU) and national levels.

In financial services, regulatory priorities have focused on climate risk identification, measurement, and disclosure, although broader environmental and social sustainability factors are now beginning also to be considered. In addition, financial regulators, particularly in the UK and Europe, are increasingly taking active steps to support market integrity and avoid greenwashing and mis-selling by introducing new regulations on disclosure and the labelling of funds and investments. Since 2020, the European Securities and Markets Authority (ESMA) has been required to take sustainability and ESG factors into account in its rulebook and supervisory activities. The new European Sustainable Finance Disclosure Regulation (SFDR) came into effect in March 2021, requiring disclosures of climate risks and other environmental and social factors. In April 2021, the EU Commission introduced proposals for new sustainable finance regulations that would amend MiFID II (the Markets in Financial Instruments Directive) and other EU legislation governing investments and require providers to incorporate sustainability factors into assessments of clients' investment needs and preferences, with reference to the EU Taxonomy. In addition, sustainability factors must be integrated into investment managers' risk management systems and investment due diligence processes, and thus disclosures will be significantly strengthened.

National regulators in Europe are also implementing similar approaches. German regulator BaFin, for example, introduced rules in 2022 which will prevent greenwashing by requiring investment funds that describe themselves as 'sustainable' or similar to invest a minimum of 75% of their assets sustainably or track a recognized ESG market index.

In the UK, amongst other regulatory developments, the mandates of the Bank of England Prudential Regulation Authority and Financial Conduct Authority were revised in 2021 to include addressing climate change. The Pensions Act was amended at the same time to include mandatory requirements for climate change governance and reporting, aligned with the recommendations of the TCFD. Additionally, the UK's Financial Conduct Authority released new guidance for investment funds to ensure market integrity and avoid potential greenwashing.

In the US, the Securities and Exchange Commission (SEC, 2021) announced that they will publish mandatory rules for climate risk disclosures, aligned with the recommendations of the TCFD, by the end of 2021. In addition, the SEC are considering similar guidance for investment funds describing themselves as 'sustainable' or 'ESG' as are currently being

developed and implemented in the UK and Europe.

Both the impact of existing regulation and the prospect of further policy and regulatory interventions (e.g. the introduction of more robust, global carbon pricing) drive the growth of sustainable investment. Regulation can both increase the direct costs of holding high-carbon and other unsustainable assets, and the realistic prospect of future regulation increasing transition risks.

III. Returns

Ultimately, the key driver of investment decision-making for most investors and investment managers is financial, i.e. the expectation of achieving an average or above market return. If sustainable investment strategies generate such returns, then regardless of investors' preferences and values, we should expect inflows to sustainable investments and funds. Historically, the consensus view was that trade-offs between financial, environmental, and social returns will be evident in sustainable investment. Companies that 'do good' would not also 'do well'. Evidence is increasingly emerging, though, that sustainable investments at least match, and in some cases outperform, their traditional counterparts:

- A major 2019 study by Deutsche Bank, which analyzed corporate disclosure and media reporting on climate change of 1,600 companies over a 20-year period, found that those firms that reported positive impacts and results on climate change experienced, on average, a 26% improvement in their share price over 20 years compared with their peers. Negative impacts and reporting on climate change led to firms underperforming their peers (Deutsche Bank Research, 2019).
- In 2020, Morningstar analyzed the performance of 4,500 funds and found that the majority of surviving ESG funds (i.e. those funds that had been in existence for ten years or more) outperformed the average surviving traditional peer (Bioy, 2020). The best performing ESG funds were US-based, where 70% delivered higher returns than their traditional peers (Alladi & Shukla, 2023).
- UK investment manager, Fidelity, conducted a similar study in December 2020, analyzing 2,659 equity and 1,450 fixed income assets and found a clear correlation between sustainability and returns (Stevenson, 2020). Interestingly, they noted that companies with 'improving ESG' performed better than companies with 'stable' levels of ESG.
- Morgan Stanley also found a correlation between higher ESG standards and stronger financial performance in their 2020 study. Drawing on analysis of over 11,000 mutual and exchange traded US domiciled funds, they found that U.S. sustainable funds outperformed traditional peers by an average of 4.3% in 2020.

Possibly influenced by such results, investors increasingly seem to believe that sustainable investment can deliver higher returns than traditional alternatives. According to a global study of institutional

investors conducted by Schroders in 2020, 55% of institutional investors believed that sustainable investment delivered higher returns, compared with 49% of investors in 2019 and 34% of investors in 2018 (Schroders, 2020).

Several reasons exist why sustainable investments may outperform traditional equivalents, including:

- The avoidance or mitigation of weather-based risks and wider environmental and social sustainability risks are greatly increasing costs and reducing returns for high-carbon and other unsustainable assets and companies.
- The positive selection of assets and companies with new business models and technologies that will benefit from the shift to a low-carbon, sustainable world, and associated shifts in consumer demand (the electric vehicle manufacturer Tesla is a well-known example).
- The increasing costs of regulation (as discussed previously) which reduce the expected and actual returns from investments in high-carbon and other unsustainable assets and companies, and may, in some cases, increase the returns from sustainable alternatives.
- The impact of stranded assets (and the potential for significant asset impairment and abandonment) reducing demand for high-carbon assets and companies.
- Companies comprising sustainable investment portfolios and funds may have higher quality leadership and management overall (some suggest that high ESG scores and ratings act as a proxy for better strategic decision-making, risk management and other factors).
- Evidence that investors and investment managers adopting sustainable investment strategies have a longer-term approach to investment (i.e. a longer time horizon) and are less likely to sell holdings during market downturns.

Changing consumer, investor preferences and values also play a significant role in increasing demand for sustainable investments and funds. The emergence of millennials (the generation born in the 1980s and 1990s, becoming adults in the 2000s) and growth in the number of female investors as both retail investors and investment managers, is increasing demand for sustainable investments, funds and related products and services.

A Morgan Stanley report (2017) demonstrated that nearly 9 out of 10 millennial investors were interested in sustainable investment options that would produce market-rate financial returns alongside positive environmental and/or social returns. Millennial investors were almost twice as likely as non-millennial investors to invest in assets with specific environmental and/or social outcomes. They were also twice as likely to disinvest from assets harming the environment or society, compared with non-millennial investors. Given that, in many developed markets at least, a significant inter-generational wealth transfer to the millennial and succeeding generations is anticipated, somewhere in the order of $30 trillion, there is great potential for very substantial and continued further growth in sustainable investment.

Ensuring Decarbonization of Existing Portfolios

Delivering on the Paris Agreement to achieve the emissions reductions necessary to tackle climate change and mobilizing investment to achieve the UN Sustainable Development Goals will only happen if investors are able to match the requirements of a low-carbon and sustainable global economy across the entirety of their portfolios. We also need to consider a more holistic approach, however, if we are to achieve a successful shift to a sustainable environment. This suggests a comprehensive strategy for green and sustainable finance, both in terms of the goods and services offered and used, and also in the sense that it proactively engages with actions that support a systemic shift in finance and the wider economy towards low-carbon and sustainable goals.

One way of looking at this is through portfolio decarbonization. This describes a comprehensive approach to portfolio management in which investors combine investment in low-carbon assets together with engagement with major emitters and other companies that need to transition to low-carbon business models, followed by disinvestment from high-carbon assets where this becomes necessary.

The balance of investment versus disinvestment, the pace of portfolio decarbonization and the desired objective (zero carbon versus low carbon) will be contingent upon a number of variables, including investors' preferences and values, the size of organization, position in the investment chain (e.g. asset owner or asset manager) and the kinds of resources invested in. A range of investor groups has emerged to support portfolio decarbonization, including Climate Action 100+ and the Portfolio Decarbonization Coalition (PDC), although the PDC has now been superseded by the more recently established UN-convened Net Zero Asset Managers Initiative and the Net Zero Asset Owner Alliance. All seek to align portfolios with a low-carbon, sustainable world and engage with major emitters to reduce or eliminate greenhouse gas emissions.

Portfolio decarbonization is having a demonstrable impact on some of the world's largest organizations. In 2018, for instance, Royal Dutch Shell identified divestment, driven by the decarbonization of investor portfolios, as a significant threat to its operations – the first of the major oil and gas companies to do so. Responding to the threat of divestment as a material risk and seeking to mitigate climate risk in their business more generally, Shell announced plans to reduce its Net Carbon Footprint by 35% by 2035, and by 50% by 2050. These targets are linked to executive remuneration, to ensure they are fully embedded in business strategy, planning and operations. Climate Action 100+, a large group of investors with the aim of engaging systemically to persuade significant greenhouse gas emitters to switch their resources to cleaner and/or cleaner energy, played a major role in encouraging Shell to identify, disclose and announce its plans for mitigating climate risks.

Sustainability Assessment Metric

The sustainable investment sector is growing rapidly and driven by a range of factors including a greater appreciation and understanding of climate and wider sustainability risks and opportunities;

Figure 1
Indicators to be Measured to Assess Sustainability in Portfolios

Climate Risk	ESG Metrics	SDG Impact	Taxonomy
Measuring protfolio exposure to different climate risks	Measuring the sustainability of operations at the portfolio level	Measuring the impact of invested companies' products and services	Measuring portfolio alignment with the various Taxonomy available

Source: Author's Own

developments in regulation and policy at national and international levels designed to support the transition to Net Zero; increasing evidence of returns from sustainable investment strategies; and changing investor demographics, preferences, and values. There are some significant challenges to the continued growth of sustainable investment, however, such as a lack of capacity and capability, and the issues of fiduciary duty and short-termism. To help investors and investment managers better understand the sustainability impacts and performance of investments, it is a challenge to improve the credibility, consistency, and comparability of data.

In order to address some of the issues described in the section above as well as to measure the impact of sustainable investments, a Sustainability Assessment Metric tool should be developed to analyze the extent of sustainability in investment sets. The tool should employ a fully systematic portfolio approach, in contrast to conventional equity research. All publicly traded companies should be able to undergo various sustainability assessments.

Among the indicators that should be measured are:

I. Climate Risk

Analyses are done of the financial effects that transition and physical risks have on investments. The science-based climate risk model builds various climate scenarios in accordance with the TCFD recommendations using IPCC research.

II. ESG Metrics

ESG factors in business operations are assessed at the portfolio level. We are performing calculations for variables like total carbon intensity, water usage, gender equality, and board independence.

III. SDG Impact

To calculate the overall effects of investments on the UN Sustainable Development Goals (SDGs), the effects of the goods and services that a company offers are evaluated. The Royal Swedish Academy of Sciences created a map of such effects. The SDGs' positive and negative effects are evaluated.

IV. Taxonomy on Sustainability

The ASEAN and EU Taxonomy aims to categorize economically viable

environmental practices. A company's alignment to the new cross-sector sustainability definition by ASEAN and the EU is evaluated in the Sustainability Assessment Metric based on its economic activities according to the region it is in.

The Sustainability Assessment Metric tool can be used to create new portfolios, set internal key performance indicators for existing portfolios, and provide customers with portfolio analyses and periodic reports.

Conclusion

ESG considerations must be incorporated into investment decision-making processes in accordance with the Sustainability Assessment Metric system. This implies the requirement for thorough data collection, analysis, and reporting on investment-related environmental, social, and governance issues. Investors who adopt the metric system might need to improve their disclosure and transparency procedures with regard to their portfolios' sustainability performance. Reporting on carbon emissions, sustainability objectives, and progress toward decarbonization targets are all part of this. Collaboration between stakeholders, such as investors, businesses, and regulators, may be necessary to implement the metric system in order to create uniform industry standards, methodologies, and reporting frameworks. Harmonization and comparability can be advanced by conforming to international standards like those established by the Task Force on Climate-related Financial Disclosures (TCFD).

Investments and portfolios may perform more sustainably after implementing a sustainability assessment metric system. The system's integration of ESG criteria can aid in locating and ranking opportunities for sustainable investments while also assisting in the goal of lowering carbon emissions. The system can aid in reducing the risks to finances and reputation associated with high-carbon or unsustainable investments. Investors can avoid potential stranded assets, regulatory risks, and detrimental effects on portfolio value by taking ESG factors and carbon footprint into account when making investment decisions. Long-term financial returns that are competitive with traditional investment strategies have been demonstrated for sustainable investments ■

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