STRONGER PORTFOLIOS BUILT FOR A CHANGING WORLD

Sustainable Investing

Incorporating Environmental, Social & Governance (ESG) J.P. Morgan Asset Management

September 2019





Our Commitment to Sustainable Investing

Environmental, Social and Governance (ESG) factors are non-financial considerations that are important for stakeholders to keep in mind when assessing a company's performance, and can be used both to mitigate risk and unlock opportunities in an investment portfolio.

ENVIRONMENTAL:

Issues relating to the quality and functioning of the natural environment and natural systems, e.g., carbon emissions, environmental regulations, water stress and waste

SOCIAL:

Issues relating to the rights, well-being and interests of people and communities, e.g., labor management, health & safety and product safety

GOVERNANCE:

Issues relating to the management and oversight of companies and other investee entities, e.g., board, ownership and pay

Source: Definitions, PRI; Examples, MSCI.

Sustainable investing is a forward-looking investment approach that aims to deliver long-term sustainable financial return in a fast changing world. We believe that explicit incorporation of material environmental, social and governance information in the investment process can help to deliver enhanced risk-adjusted returns over the long-run while also serving as a foundation to align portfolios with client values.

Our commitment to sustainable investing touches every part of our business, from senior management to our investment desks, and from risk management to technology. Our Sustainable Investment Leadership Team (SILT) and our dedicated sustainable investing resources together drive a coordinated strategy for sustainable investing across asset management globally. Through our engagement and partnership with clients and industry groups, we continually increase our knowledge and views on key ESG issues and best practices. We have been a signatory to the United Nations-supported Principles for Responsible Investment (PRI) initiative since 2007. Going forward, we are focused on continually enhancing our research capabilities around ESG while building capabilities to meet client needs.

OUR SUSTAINABLE INVESTING PRIORITIES

ESG integration: We consider material ESG factors in portfolio-decision making in an increasing number of our strategies by using a proprietary forward-looking framework. Over time, we are committed to incorporating ESG information, where material and in scope, across our entire platform.

Data and research: We continuously seek to enhance our understanding of sustainable investing through forward-looking research and thematic expertise.

Engagement: We focus on fulfilling our fiduciary duty across our corporate engagement work to promote good corporate governance.

Products and solutions: We offer capabilities across a wide range of sustainable investing approaches to meet diverse client needs.

We believe transparency is a vital part of our commitment to sustainable investing. To learn more about our approach and solutions please visit www.jpmorgan.com/esg.

Our investment solutions are aligned with client objectives

We recognize that sustainable investing represents a broad set of opportunities and that clients may choose to implement their views based on explicit portfolio objectives. Our broad product capabilities and global research platform allow us to partner with clients to build solutions that align with their objectives and values.

ESG INTEGRATED STRATEGIES

Our ESG integrated strategies consider material ESG information as part of the investment process. All ESG integrated strategies must be approved by the Sustainable Investment Leadership Team, and must demonstrate:

- Employment of proprietary forward-looking research for material ESG factors
- Documentation of proprietary views across the investment process
- Systematic monitoring of ESG risks

SUSTAINABLE SOLUTIONS FOR SPECIFIC CLIENT GOALS

Our sustainable product set builds on ESG integration to provide our clients with a range of investment solutions to meet their diverse financial and non-financial goals.

	EXCLUSIONS	POSITIVE TILT	BEST-IN-CLASS	THEMATIC	IMPACT
Goals	Avoid companies that do not fit your specific standards and values.	Position your portfolio to current or future leaders across sectors to incorporate explicit ESG considerations.	Have strong belief in how sustainability- related issues will drive long-term outperformance; want to maximize exposure to the most sustainable industries and companies.	Position your portfolio to a specific long-term environmental or social theme to reduce exposure to risks and/or increase exposure to new investment opportunities.	Produce and measure your portfolio on both returns and impact.
Our proposition	The exclusion of certain sectors, companies or practices from a fund or portfolio based on specific values or norms based criteria.	Investment style in which the portfolio is tilted toward sectors, companies, or projects with positive ESG characteristics.	Investment style that involves investing only in companies that lead their peer groups in respect of sustainability performance.	Top-down investment approach; investments in themes or assets specifically related to sustainability.	Investments made with the primary goal of achieving specific, positive environmental/ social benefits while also delivering a financial return.

Our sustainable investment resources

Our coordinated strategy for sustainable investing globally is driven by our dedicated **Sustainable Investing team.** The team is led by Jennifer Wu, Global Head of Sustainable Investing, and serves as a centralized, sustainability-focused research and solutions-development team. Jennifer drives ESG-related research across investment teams, seeks to develop and publish sustainable investment thought leadership, and works with clients to build and implement sustainable investment solutions, in addition to driving and overseeing our corporate governance and investment stewardship efforts.

Jennifer also chairs the **Sustainable Investment Leadership Team (SILT).** SILT is a cross-regional, cross-functional group of senior leaders across J.P. Morgan Asset Management, comprising two distinct 16-member working groups tasked with building our sustainable investing platform globally. The ESG Data & Research Group, composed of portfolio managers and analysts, seeks to continually enhance our ESG integration framework, while our Sustainable Investing Client Strategy Group, composed of investment specialists, distribution, and other business professionals, seeks to build innovative capabilities to meet client needs. Jennifer provides regular updates on the growth and strategic direction of the sustainable investing platform to the Asset Management Operating Committee.

Our **Corporate Governance specialists,** consisting of team members across our investment hubs in London, New York, Hong Kong and Tokyo, are responsible for undertaking research on ESG issues, voting proxies and conducting ESG engagement with investee companies. The team's analysis of how companies deal with and report on social and environmental risks and issues specific to their sectors and/or industries is used to identify outliers that require further engagement. The Corporate Governance team sits on the investment floor and its research is a direct feed into the underlying processes of our investment strategies.

Our sustainable investing strategy is underpinned by a research-driven approach. More than 1,000 research analysts and portfolio managers around the globe incorporate ESG factors into their analysis.

We also draw on the resources and expertise of our parent company, JPMorgan Chase & Co. The **Sustainable Finance** team is responsible for working across lines of business and corporate functions to advise on the firm's environmental and social risk management efforts, support the development of sustainability-focused business strategies and financing opportunities, and coordinate stakeholder engagement and reporting efforts on environmental and social matters.

Sharing best practice across the firm is part of the function of SILT. Over the last two years we have held mandatory ESG training for all J.P. Morgan Asset Management employees. We also continuously embed training in large forums held across the firm on our ESG integration philosophy, capabilities, and ongoing research.

J.P. Morgan Asset Management has been a signatory to the UN's **Principles for Responsible Investment initiative** since 2007. We are a member of many sustainability-related organizations, and participate in industry forums and advisory committees on sustainability initiatives.

Corporate engagement and proxy voting

As a fiduciary, we proactively engage to create value for our clients. We continuously engage with companies on ESG issues including, but not limited to, compensation, board diversity and experience, employee safety, the environment and employee relations. We support implementation of best practices through proactive engagement with investee companies, and through our collaborations with the following organizations in ESG-related initiatives and actions:

- Corporate Governance Forum, comprising the UK's 20 largest UK fund managers
- National Association of Pension Funds (NAPF)
- International Corporate Governance Network (ICGN)
- The Investment Association's Investor Forum

ESG ANALYSIS & ENGAGEMENT

We continuously examine the ESG profiles of the companies in our investment universe in order to identify outliers requiring engagement. Regular contact with the companies in which we invest is central to our investment process, and we recognize the importance of being an "active" owner on behalf of our clients. To this end, we are signatories to the United Nations PRI, which commits participants to six Principles, with the aim of incorporating ESG criteria into their processes when making stock selection decisions and promoting ESG disclosure. Our team conducts nearly 700 dedicated ESG engagements globally each year.

Investment managers in all locations have regular contact with senior managers of investee companies to discuss issues and promote the interests of our clients. All investment professionals have access to specialist ESG data and resources, to assist them in their investment decisions.

PROXY VOTING & REPORTING

We manage the voting rights of the shares entrusted to us as we would manage any other asset. It is our policy to vote in a prudent and diligent manner, based on our reasonable judgement of what will best serve the financial interests of our clients.

Proxy voting is carried out by our Corporate Governance Team. Members of the investment desk also participate with the team in the quarterly proxy voting committee, where important proxy voting issues are discussed. Information gained through company engagement will inform managers' investment decisions.

We publish our Global Proxy Voting Guidelines and provide our proxy records for our Funds on an annual basis, both of which can be found at: www.jpmorganchase.com/esg.

JPMorgan Chase & Co. Corporate Responsibility

"Effectively addressing environmental, social and governance issues is a key part of building a great company. Doing so means having strong governance, effective risk management systems and robust controls. It includes delivering exceptional service for our customers in a fair and transparent manner, investing in our employees' development and fostering an inclusive work environment. It also involves considering environmental and social issues in our business and operations. When we do these things well, it makes our company stronger and more resilient."



JAMIE DIMON Chairman and Chief Executive Officer Environmental, social and governance (ESG) considerations are integrated across the JPMorgan Chase business and built into the policies and principles that govern how our firm operates. Our approach to ESG management includes having robust governance systems, risk management and controls; investing in our employees and cultivating a diverse and inclusive work environment; serving our customers exceptionally and transparently; strengthening the communities in which we live and work through our corporate responsibility efforts; and integrating sustainability into our financing activities and operations.

We view effective management of ESG matters as a business fundamental and seek continuous improvement in these areas because they underpin the long-term success of our firm and our ability to deliver value for our stakeholders.

OUR ANNUAL ESG REPORT

JPMorgan Chase & Co. is committed to communicating regularly and transparently with our stakeholders about how we do business. One way we do so is by publishing our annual ESG Report, which provides information on how we are addressing the ESG matters that we and our stakeholders view as among the most important to our business. You can find the annual report, as well as a wide range of ESG information and resources, on our website.

www.jpmorganchase.com/esg

OUR FIRST CLIMATE CHANGE REPORT

The scale of the challenge related to climate change is such that companies across all industries will need to participate in finding climate solutions. At JPMorgan Chase & Co., we are halfway to fulfilling a commitment made in 2017 to facilitate \$200 billion in clean financing by 2025. We are strengthening our understanding of how climate change impacts our day-to-day business activities, risks and processes. And because we know we have more to do, senior executives from across the Firm are working together to develop strategies to expand our efforts with respect to low-carbon business opportunities, policy engagement and climate risk management.

As part of that effort, we have released our first climate change report, which has been informed by the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We have served as a member of the TCFD, and we believe that it provides a useful starting point for companies and the financial sector to engage around risks that may be driven by climate change and the business opportunities associated with advancing low-carbon solutions.

DIVERSITY & INCLUSION

Employees are our greatest asset, and we strive to attract talent from the broadest pool to foster innovation, creativity and productivity. There is tremendous power that results from this kind of diversity. In fact, creating a diverse and inclusive environment is critical to our success, and we are deeply committed to hiring and retaining employees from different backgrounds, experiences and locations. We are proud to be recognized for our efforts externally, which include achieving an 100% rating on the 2019 Human Rights Campaign Corporate Equality Index and the 2019 Disability Equality Index.

Appendix

Capabilities by Asset Class

J.P. Morgan Alternative Asset Management (JPMAAM) Hedge Funds and Alternative Credit has formalized our consideration of ESG factors throughout our due diligence process. We have developed a list of factors across environmental, social and governance, and, where they weren't already included, are incorporating questions based on these factors formally into our due diligence reports. Throughout our history we have incorporated ESG-related considerations into our process, so the majority of these questions were already being asked. We believe that this increased consideration of ESG factors in our investment process can help reduce risk and ensure sustainability of returns.

After asking these questions of managers throughout our due diligence process, we actively engage them on a range of issues that may include social, environmental and governance concerns. We view good environmental, social and governance practices as a pre-requisite for responsible investing, but also as a tool to help mitigate potential risks and conflicts. We work closely with our managers to help them improve on ESG factors where we believe they are lacking, providing guidance and support to help them achieve best-in-class practices.

After being examined and potentially improved during the due diligence process, these ESG factors will be reviewed by JPMAAM's Investment Committee, and any red flags will be thoroughly discussed. ESG factors identified as part of this process are considered as part of the decision to invest in a new manager, remain invested with an existing manager, or terminate a manager.

We also partner with clients to address their specific ESG needs. Currently, specific funds, assets or types of assets are not automatically excluded explicitly on social, environmental, or ethical criteria unless specifically requested by clients or required by local legislation. However, JPMAAM has the ability to work with clients in a variety of ways to incorporate their ESG preferences, from exclusions-based (SRI) mandates to ESG thematic.

Overview: Acting solely in the fiduciary interest of our clients

Global Real Estate strives to deliver strong risk-adjusted investment performance to our clients worldwide. We believe that one of the drivers of that performance over the long term is the management of ESG behaviors and practices of the companies and assets in which we invest on behalf of our clients.

Philosophy: Incorporating ESG leads to better investment decisions

We believe continuous improvement of our assets/companies with respect to sustainability will ultimately improve both the environment in which those investments exist as well as asset competitiveness and value. Global Real Estate will:

- Always act in the fiduciary interest of our clients by buying, constructing and operating high-quality assets
- Maintain and improve operating performance to maximize long-term value

Global Real Estate's Sustainability Philosophy allows for flexibility among a wide range of companies, assets, locations, strategies and ownership structures—from operating companies to individual assets, from office buildings and shopping centers to apartment buildings. Global Real Estate's approach to ESG is one of integration—the systematic and explicit inclusion of sustainability/ESG factors into traditional analysis and decision making by investment managers. Sustainability issues are identified and quantified as part of our investment due diligence process, not only as a pre-requisite for responsible investing, but also as a tool to help mitigate potential risks.

Act as a Responsible Corporate Citizen

Environmental

Investments are underwritten to meet or exceed environmental standards, taking into account the long-term objectives of our investments, mitigating risks associated with expanding regulations and increasing the marketability of real asset investments at time of disposition.

Social

The construction of well-designed and well-managed real estate—for example, buildings, roads and power plants—has a positive impact on local communities, creating jobs and boosting economic activity. An understanding of an investment's potential impact on a variety of stakeholders is essential to an appropriate underwriting.

Governance

Companies in which Global Real Estate invests on behalf of its clients and/or partners should be controlled by effective management, with an appropriate balance of control and oversight for key functions, including reviewing and guiding strategy, major plans of action and risk policy. Remuneration for services should be aligned with the longer-term interests of investors. Companies should ensure that timely and accurate disclosure is made on all material matters, including the financial situation, performance, ownership and governance of the company. Companies should eliminate corruption in all its forms, including the payment or acceptance of bribes and inducements, and cartel behavior.

The infrastructure team recognizes that management of material ESG issues can have a significant impact on the longterm operational performance of the companies in which it invests on behalf of its clients. As an asset class, infrastructure investing can directly benefit by the effective management of ESG factors.

In providing long-term capital, infrastructure investors are looking for companies to be managed for sustainable growth and resilience. We believe a focus on forward-looking ESG factors as a complement to traditional analysis, both in the acquisitions process and ongoing asset management, results in better long-term outcomes for our investors, portfolio companies, communities and other stakeholders.

Philosophy

As a signatory to the United Nations Principles for Responsible Investment, where consistent with our fiduciary responsibility. we believe that ESG factors should be incorporated in the investment and asset management processes. Further, we believe that transparency around how a company manages ESG risks and opportunities is part of its value proposition: management of ESG factors impacts business results in numerous respects including access to capital, cost savings, productivity, revenue growth, market access, reputation, insurance cost and availability, talent retention and risk management. Well-governed companies with an environmentally sustainable and socially responsible way operating significantly de-risk their business model, and therefore, deliver better performance and achieve greater cost efficiencies and profitability for their investors. We believe it is appropriate to hold ourselves accountable to our stakeholders for our management of ESG factors and strive to do so through reporting, engagement with stakeholders and benchmarking.

Approach

In keeping with the principles set forth in the PRI, the largest direct equity infrastructure strategy at J.P. Morgan Asset Management has adopted a Mission Statement, Governance Principles, Governance Implementation Framework and ESG Policy, which together provide a roadmap to the management of material ESG factors and provide ESG guidance to the boards and management of the Strategy's portfolio companies. The Strategy's integrated approach to ESG includes consideration of ESG matters in acquisition due diligence culminating in:

- a distinct ESG section in each investment committee memorandum
- a requirement of each portfolio company's board of directors to adopt an annual governance calendar, which explicitly includes ESG matters,
- a requirement of each portfolio company to track and report on a variety of ESG matters, with the vast majority of its portfolio companies participating in ESG benchmarking assessments.

Our Macro strategy is ESG integrated. In the first quarter of 2019, we formalised the consideration of ESG risks in our investment process and built an ESG module specific to the macro approach in our common global technology platform, Spectrum[™]. Before investment, the portfolio managers review each security's ESG score, using third-party data, to ensure that potential risks are captured. Where the security's score is below that of the investment universe, the team carries out additional ESG research. As such, ESG risks can impact our decision-making and may lead to the inclusion of a security at smaller size or not at all; however, we do not systematically exclude securities solely on ESG grounds.

The objective of the Private Equity Group (PEG) of J.P. Morgan Asset Management is to identify and select attractive investments from across a broad spectrum of private equity investment opportunities. Sustainable investing is an important part of PEG's investment diligence process. PEG assesses the environmental, social and governance behaviors and practices of the companies and underlying third-party private equity managers with which we invest.

Philosophy

PEG's standard investment process includes due diligence on sustainability, a written investment memorandum and ongoing discussion with the portfolio managers of PEG with respect to sustainability issues. This process includes clarification and assessment of all material risk factors of sustainability including environmental, social and governance factors. PEG encourages the underlying third-party managers with which it invests to carefully consider these factors in their own investment due diligence as well. Sustainability considerations are an important component of both the initial due diligence and screening process and the ongoing monitoring of investments.

Approach

The investment strategy at the foundation of PEG has been developed and refined over 35 years and through a wide range of market and investment environments. Consistent with PEG's ultimate objective of providing attractive, risk-adjusted returns, specific companies and investment managers or types of companies or managers are not excluded from client portfolios solely on the basis of ESG criteria. However, PEG views sustainability issues as important factors that are likely to impact performance and therefore must be carefully considered as part of the investment review process. PEG believes that sustainability considerations must be reviewed holistically to account both for material risks and also potential opportunities which may make companies or underlying managers more or less attractive for investment. PEG encourages the portfolio companies and managers with which it invests to advance the principles of sustainable investing in a practical manner consistent with return objectives and fiduciary duties, which include:

- Considering environmental, public health, safety and social issues and their impact on investment returns
- Positively impacting communities, including, for example, promotion of health, wellness and advancement
- Using governance structures that provide effective management, including in the areas of audit, risk management and potential conflicts of interest
- Implementing procedures and processes to ensure compliance with laws and to prohibit bribery, inducements and other improper payments or non-competitive behavior
- By promoting and protecting human and social rights, including confirming that underlying portfolio companies comply with labor laws and do not maintain discriminatory policies or engage in illegal work practices, PEG seeks to integrate ESG considerations into the investment process in a practical manner to ensure that the investment process is clear and consistent with the portfolio's investment objectives. This includes developing guidelines and an approach, which are adaptable to market conditions, portfolio construction and investment opportunities.

The Beta Strategies investment team takes a rules-based, systematic approach to investing across asset classes. We manage traditional market capitalization-weighted passive strategies, factor-based strategies in equities and fixed income, and long-short alternative risk premia strategies across asset classes. Our investment approach is underpinned by a commitment to ongoing quantitative research and the development of technology and infrastructure to support a robust and scalable investment process.

We recognize that ESG-related considerations are core to the investment philosophies of many of our clients. The growth of ESG-related data and analytics has made it increasingly possible to incorporate these considerations into systematic strategies in a thoughtful and scalable way.

Philosophy

We are committed to making available strategies that allow our clients to invest in a sustainable way. Improvements in the breadth and quality of ESG-related data have enhanced our ability to reflect sustainability considerations in our systematic investment processes. The development of new sources of data to evaluate ESG issues alongside other market risk factors is also supportive.

While the relatively short history of ESG data makes it somewhat challenging to evaluate its risk and return impact in a quantitative research framework, we support the continued development of metrics to quantify these important topics and help enhance client portfolios.

Approach

We offer a variety of approaches to ESG-related investing, according to our clients' goals:

Exclusions

Given the systematic nature of the Beta Strategies investment approach, exclusions of certain sectors, companies, or practices based on specific ESG criteria can be easily implemented as part of our portfolio management process.

Inherent in our factor-based investment philosophy is a focus on enhancing return while, importantly, minimizing exposure to risks for which investors are not compensated over the long term. ESG-related exclusions fit seamlessly alongside this investment philosophy. Material environmental, social, or governance-related factors have the potential to impact a company's profitability, so for many clients, exclusionary screens can be a thoughtful approach to risk mitigation.

Positive Tilt

The Beta Strategies team manages factor-based portfolios across both equity and fixed income markets. In these portfolios, we screen companies or securities based on various metrics – for example, relative cheapness or earnings quality – and invest systematically in the best-ranked securities.

We take a similar approach in ESG-enhanced portfolios, screening companies or securities based on ESG metrics – for example, those relating to their carbon emissions or human capital management – often alongside traditional factors such as value, quality or momentum. This allows us to avoid companies or industries that rank poorly across ESG metrics and lean into those that rank better.

Thematic Strategies

The Beta Strategies team also manages thematic strategies that seek to invest in companies targeting specific social or environmental issues, such as water, renewable energy, or gender diversity. This can be achieved either by tracking a thematic index or by utilizing a proprietary thematic investment solution to build portfolios that provide exposure to themes that enhance returns, mitigate risk, and/or achieve an ESG-related outcome.

In our view, ESG is three separate issues, not one. Certainly, there cannot be a single response that fits all market views on these topics. Governance has long been part of our process, and our view on board balance, disclosure & transparency, rights of shareholders, and alignment of compensation is broadly homogeneous between markets and our client constituency. Environmental concerns are increasingly part of the investment landscape as legislation changes the rules, and social issues, too, can have a real impact on a business. However, it is important to recognize that views on what constitutes both environmental and social best practices can vary widely (for example, differing attitudes on alcohol, abortifacients, fossil fuels, nuclear power and weapons manufacture). For this reason, we believe the best approach is to focus on the potential economic impact of these issues and apply an appropriate discount when making investment decisions, while always being cognizant of our clients' requirements and views.

Governance

Corporate governance issues, in our view, have the most direct bearing on the risk/reward profiles of our portfolios, so this is the area that is most integrated into our investment process. Although in developed markets we would only exclude a company from our portfolios on purely governance criteria in extreme circumstances, we recognize that it is a risk factor we must understand and take into account as part of the investment decision. We will also seek to change substandard governance, when we can, through our proxy voting and engagement activity. We manage the voting rights of the shares entrusted to us as we would manage any other asset. It is our policy to vote shares held in our portfolios in a prudent and diligent manner, based exclusively on our reasonable judgment of what will best serve the longer-term financial interests of our clients. We also regard regular, systematic and direct contact with senior company management, both executive and non-executive, as crucially important. Where appropriate, governance specialists will attend scheduled oneto-one meetings alongside analysts and portfolio managers, as well as convene dedicated meetings, as required, in order to debate areas of concern.

Environmental

Environmental concerns are an ever-increasing part of the investment landscape, partly because of legislation in many countries, but also due to the impact they can have on investment returns and cash flows. As investors, we often make an assessment of environmental issues and include them in our decision-making process. This is also an area where a growing number of clients have specific questions and expectations. We do not exclude specific assets or types of assets from portfolios explicitly on environmental criteria (unless specifically requested by clients or required by local legislation), but we do need to be aware of the environmental risks associated with a given company and/or industry, and consider the potential economic implications.

Social

Social issues are the most difficult to assess, as they mean very different things to different people, and this is reflected in our global client constituency. For segregated clients, we are willing to customize individual mandates to exclude companies engaged in businesses that the sponsoring client finds unacceptable. We have also, in some cases, expanded this approach to include pooled funds, for example with landmines in Europe. Beyond that, for unconstrained portfolios, we consider the materiality of social issues. In these instances, we must focus on the economic impact of this involvement.

Overview and philosophy

As bond investors, we view ourselves as lenders of our clients' money. We therefore expect the issuers in which we invest to conduct business in a sustainable manner and to demonstrate high standards. The Global Fixed Income, Currency and Commodities (GFICC) group is committed to delivering strong risk-adjusted returns for our clients, and we believe that one of the drivers of that performance over the long term is an assessment of the ESG practices of the issuers in which we invest. As such, we take into consideration, where relevant and material, ESG issues, alongside other market risk factors, as a fundamental part of our sound risk management and a core part of our fiduciary responsibility.

Approach and integration

Across the GFICC platform, we have historically considered ESG factors alongside other material return drivers as part of our research efforts. In the past few years, we have formalized this into a rigorous and systematic approach to ESG integration. Given the scale and variety of the global fixed income market, ESG factors in each sector and market are assessed slightly differently. However, our approaches share three common pillars: proprietary research, engagement and portfolio construction.

• **Proprietary research:** A key tenet of our fixed income platform is our focus on proprietary research. Our common research framework-in which every investment idea is assessed using fundamental, quantitative valuation and technical analysis-allows for comparison across all sectors of the bond market. GFICC's deeply resourced team of research analysts incorporates the assessment of an issuer's ESG practices directly into this framework, as part of the fundamental analysis. We use third-party data as an input into this view, but it does not dictate our position. Analyst research is documented in a dedicated ESG field in Research Notes (an application within our common global technology platform, Spectrum[™]). This information is visible to all investors across the platform, including portfolio managers and investment specialists, to encourage transparency and discussion.

- Engagement: As bond investors, we do not carry voting rights. However, we engage on a wide range of ESG issues with a variety of market participants. In addition to individual companies, we also engage with government officials, industry boards and forums, ratings agencies, data providers and other global institutions, with the goal of driving progress on sustainability. Our scale and position within the asset management industry also allow us significant representation across asset classes, and we often conduct engagement with our equity counterparts, where relevant.
- **Portfolio construction:** We monitor ESG exposure throughout the portfolio construction process, on both an ongoing informal basis and during official periodic reviews. We have enhanced our front-office systems to incorporate ESG data, primarily from third-party providers, to give portfolio managers understanding and oversight of ESG risks in our portfolios on both a pre- and post-trade basis. This system provides significant flexibility, showing the breakdown of a portfolio's ESG score by a variety of factors such as sector and country. Portfolio ESG risks are also formally captured in a series of risk reports produced by the dedicated risk management teams. These are regularly reviewed and monitored by portfolio managers during official portfolio review meetings.

As a result of these efforts, and following a robust approval process, the Sustainable Investment Leadership Team has designated the GFICC platform as fully ESG integrated.

Solving clients' needs

We adopt a positive engagement approach to sustainable investing. Therefore, specific assets or types of assets are not automatically excluded from portfolios explicitly on environmental, social or governance criteria, unless specifically requested by clients or required by local or global legislation.

For our sustainability-focused investors, we offer a multidimensional approach. We are able to manage to ESG benchmarks, incorporate screens such as issuer exclusion on norms- and value-based criteria, and provide customizations such as thematic investments. We also support the green bond market, and, where appropriate and permitted by our clients, endeavor to allocate to green bonds given the opportunity they present to provide financing for environmentally beneficial projects and activities.

Our team's primary focus is capital preservation and liquidity; delivering fundamentally safe and sound portfolios in the cash space is necessary for other capital markets to function effectively. Considering the many ways risks materialize across the investment realm, environmental, social, and governance elements provide distinct, meaningful information relating to institutions' future cash flows and balance sheet integrity.

Philosophy

To better inform investment decisions, Global Liquidity incorporates relevant and material environmental, social and governance factors into our rigorous investment process alongside other market risk considerations which may include avoiding event and headline risk. Our conservative investment philosophy aims to preserve principal and maintain liquidity while generating return.

Approach and Integration

Global Liquidity partners with our colleagues in GFICC to assemble an array of analytical resources, and these analyst teams allow us to utilize both top-down and bottom-up approaches to converge on assets providing good risk-adjusted returns. Market research coupled with fundamental credit analysis provides an unusually disciplined framework.

As part of our security selection strategy, investment teams evaluate whether sustainability issues could materially impact the cash flows or risk profiles of the many companies in the investable universe. And while no issuer or specific asset is excluded from portfolios based on ESG criteria–unless mandated by regulation or requested by clients–these factors could either expand or limit the ability to invest in a company or asset if an E, S, or G component changes the fundamental outlook. We utilize an ESG ratings service to provide adept, objective opinions related to sustainability issues, and those specific ESG ratings are used in conjunction with our proprietary analytics and fundamental credit ratings. These ratings are supplied to our portfolio management teams through a combination of research and trading systems to better inform investment decisions. Additionally, our Global Liquidity investment governance committee combines these rating reports into its monthly meeting agenda, where both notable portfolios and individual securities are examined for ESG ratings quality.

Global Liquidity's ESG leadership team is charged with maintaining a focus on the product line's sustainability efforts; this includes furthering ESG integration into our investment process, training our teammates to effectively utilize ESG principles and to speak fluently about this process. This leadership team is both professionally and culturally diverse, employing women and men from portfolio management, distribution and analytics across Asia, Europe and North America.

Multi-Strategy

Multi-Asset Solutions (MAS) is a diversified fund of funds manager which leverages the underlying investment capabilities of the global asset management business. Currently, the incorporation of ESG considerations is a function of the various platforms with which we invest and our manager research process serves as a central point of reference to understand each platform's ESG philosophy within the context of their stated investment process. Our MAS Manager Research team takes a holistic approach to ESG integration across the whole portfolio, focusing on understanding the different approaches adopted by managers across the platform and developing appropriate questions to monitor the consideration of ESG risks. Manager updates are recorded on the research database in our portfolio management system, Spectrum™, and leveraged by the research and portfolio management teams. In Spectrum[™], we have also developed the capability to see third-party ESG scores for our portfolios and their underlying funds. Changes in ESG scoring over time are monitored and raised in discussions with underlying managers. Multi-Asset Solutions does not currently incorporate socially responsible factors into our strategic or tactical asset allocation approach at the present time, but we are currently working toward formal integration status by developing a process which explicitly incorporates ESG risks into our strategic manager selection decisions, with expected completion in the very near future.

Convertible Bonds

In our convertible bond process, we are in the process of formalising our approach to ESG integration in consultation with the Sustainable Investment Leadership Team. Our rigorous bottom-up stock selection can consider sustainability issues, and we have the ability to screen our equity universe on a preand post-trade basis, using third-party ESG scores.

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