Intended for Institutional Clients Only

FROM EVOLUTION TO REVOLUTION: ESG CONSIDERATIONS BEGINNING TO RE-SHAPE INVESTMENT MANAGEMENT

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Methodology

This ESG-focused report builds on the themes explored in the recently published 2020 Industry Evolution Survey: Health & Real Economy Crises Rock the Investment Management Industry, which was the 10th annual version in the series. We conducted 105 in-depth interviews with firms that collectively managed $53.7 trillion of AUM, or 63% of 2019's total professionally managed AUM.[1] We also organized more than 100 playback meetings with firms across the industry, in which we discussed our findings and further explored the impact of Environmental, Social, and Governance (ESG) priorities.

We interviewed **investors and intermediaries** representing approximately $4.4 trillion in assets. Participants included sovereign wealth funds, public and corporate pension funds, insurers, private banks, and wealth advisors as well as a number of emerging technology firms. **Investment managers comprised 73% of our interviews and represented more than $49.3 trillion of AUM.** These included a variety of asset managers, hedge funds, and private asset firms.

Our interviews encompassed a wide variety of roles: CEOs, CIOs, COOs, CFOs, Business Heads, Senior Portfolio Managers, and other investment professionals. The **105 in-depth interviews included views from over 110 individuals**. The geographic breadth and broad spectrum of firms that participated laid out numerous assumptions for the future of the investment management industry.

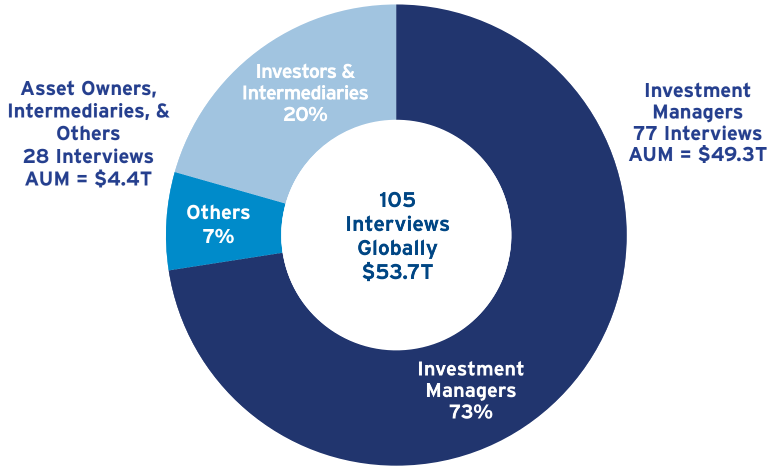
During the course of each interview, we had an open-ended discussion in which interviewees voiced their views on how the investment management industry may be transformed. While we maintained questions focused on our typical 18-36 months forward looking view, many of our conversations discussed how industry participants are approaching and integrating ESG into their investment and corporate decision-making processes. Given the depth of those findings, we wrote a dedicated paper on ESG to analyze the industry implications.

As in previous reports, you will find a selection of anonymized quotes throughout the report to give a flavor of the insights shared by interviewees.

In the following charts, we show the range of firms interviewed, as well as a geographic breakdown of both our interviewees and the client presentations of the 2020 Industry Evolution paper. The views on ESG expressed in those meetings further enhanced the findings of this report.

We are delighted to share the findings of our 2020 ESG paper. We would like to express our gratitude to all those individuals who participated in our survey and were so generous with their time and their thoughts. Thank you.

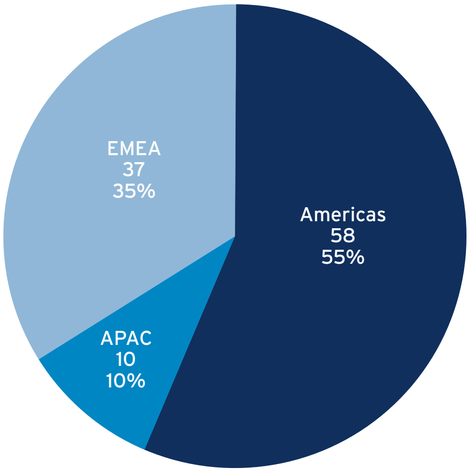
Breakdown of Interviews by Client Type



Source: Citi Business Advisory Services; AUM from eVestment and Company Websites

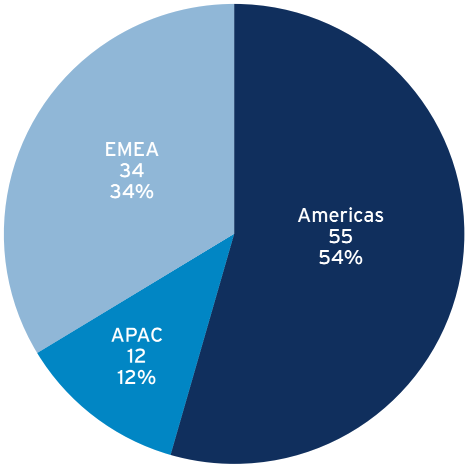
1 Citi Business Advisory Services analysis based on data from "Global Asset Management 2020: Protect, Adapt, and Innovate", The Boston Consulting Group, May 19, 2020, https://www.bcg.com/en-gb/publications/2020/global-asset-management-protect-adapt-innovate; and proprietary data subscriptions to Preqin, Hedge Fund Research and ISS Market Intelligence SimFund.

Geographic Breakdown of 105 Interviews



Source: Citi Business Advisory Services

Geographic Breakdown of 101 Playbacks Presentations



Source: Citi Business Advisory Services

Key Findings

We have tracked the growth of Environmental, Social, and Governance (ESG) investing in our reports for many years, but never has the topic garnered so much attention, nor spurred so much debate as in our 2020 Industry Evolution survey interviews that began in March-April 2020. Survey participants were eager to share their views on ESG's evolution, even amidst the myriad challenges of rapidly deteriorating markets, volatility, liquidity concerns, and the operational challenges of transitioning to remote workforces.

Although some participants warned that the market turmoil might be the end of ESG, the clear majority saw the nature of the crisis–a global borderless, and virulent health pandemic—as uniquely suited to being viewed through an ESG lens. The wide-ranging insights shared about ESG in this year's Industry Evolution Survey interviews, covered so much ground that we chose to elevate the topic and really explore the ESG landscape in more depth as many see the industry at an inflection point around this trend.

In this paper, we address key developments that support this conclusion and explain how even those who might still be ESG skeptics (as some of our Business Advisory Services members once were), may now need to reconsider whether ESG might represent the most significant opportunity in decades for the investment management industry.

We chose to start our exploration by clearing up some of the ambiguities around ESG and how it may differ from other types of socially responsible investing, and by trying to cut through some of the complexity of the ESG ecosystem. Survey participants view the current ESG space as a significant source of confusion, with its jargon and acronyms and broad range of participants–governments, NGOs, specialty organizations, and industry groups—all pursuing, publishing, and promoting a plethora of rules, frameworks, goals, and standards, both actual and proposed.

Underlying this mélange of activity, however, is a growing pool of assets that are being awarded to investment managers for the express purpose of addressing the needs of investors in pursuing ESG-related goals. This is neither, as many initially framed it, a European phenomenon, nor is it exclusively a climate change-related concern.

The range of asset owners across the globe shifting their portfolios towards ESG is significant and growing. This report looks at the roots of ESG investing, its expression in today's investment landscape, how the evolving demands of asset owners may prompt a significant change in the way that ESG investing occurs, and what that future may look like.

Current ESG Investments Focus on Managing Headline Risk

AUM allocated to ESG investments was estimated at $30.7 trillion in 2018, and while these assets have likely grown since, the underlying investment techniques are still nascent.[1] Early efforts have focused on broad brush approaches that look to avoid the headline risk of owning companies with poor ESG records. These investment strategies most commonly exclude companies ("Negative Screening", $19.8 trillion), or integrate ESG alongside a wide array of other financial considerations in determining the weighting of a security in a portfolio ("ESG Integration", $17.5 trillion).[2]

There are several issues with these approaches:

- They do not tie the allocation of investment dollars to specific corporate behaviors that the investment manager is looking to highlight, and thus the effectiveness of these investments to incentivize actual change around any E, S, or G concern is uncertain.
- The data approach used to "score" companies is opaque and many survey participants questioned its utility.
- There is considerable variety in how investment managers incorporate ESG into their organizations. In some models, the existence of separate groups outside the investment team who are focused on ESG and shaping firm policy on how it gets reflected in portfolios, can undermine the potential for financial return or the translation of the ESG signals into actual holdings.

Strategies that engage companies more directly—stewardship and impact funds—may be more effective in signaling desired ESG behavior changes, but the measures used to evaluate their success often focus on *actions taken* as opposed to *outcomes achieved*. Moreover, of the ESG approaches in use today, these strategies currently attract the smallest amounts of AUM.

1 2018 Global Sustainable Investment Review, Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

2 Ibid

COVID-19 Intensifies Focus on Effectiveness of Capital Allocation to Mitigate Pre-Financial Risks

The COVID-19 pandemic has brought with it a new awareness of the breadth and variety of risks that can influence asset values. Climate change had previously been the primary focus of ESG discussions, but the shift from "E-concerns" to "S-concerns" driven by the speed, extent, and origin of the crisis have created a new dialog and sense of urgency around systemic risks, and how extensively such pre-financial risks can affect investment portfolios in unexpected ways.

Corporate access to capital, the relative cost of such capital, and transition plans on how companies will deploy funds to enhance their sustainability profile are already impacting banking relationships in key sectors, as lenders look to reduce risks to their portfolios. COVID-19 experiences are expanding such considerations and increasing focus on how societal risks might affect capital decisions is anticipated.

Asset Owner Goals Shift in Response to Cascading Systemic Risks: The lessons of COVID-19 are driving asset owners to re-examine their approach to managing ESG risks, as they recognize that systemic events can have cascading effects that existing risk models are not well-suited to identify or address. Survey participants expressed a growing awareness that pre-financial risks may upend portfolios at any time, not only because of the interconnectedness of the global economy and the vulnerabilities this creates during systemic risk events, but also because of amplified stakeholder voices that impact a company's social license to operate.

Survey participants saw the events of 2020 driving a dialogue about how asset owners' approach to insulating their portfolios may need to evolve. Just as the banking sector is re-examining how their ability to provide capital can be a tool to influence corporate behaviors, asset owners too are beginning to question their role and ability to use their portfolio allocations in a similar manner.

Expanding Model of Responsible Asset Ownership: The view that pre-financial risks linked to ESG are primarily a threat to only long-term asset valuations is changing quickly. Asset owners are beginning to expand their definition of responsible asset ownership to include management and mitigation of not just traditional financial risks, but *pre-financial* risks as well before they can cause financial impact.

This is prompting asset owners to re-assess how well their capital allocation is being used to signal their priorities to issuers. Many participants saw the current approach to ESG investing as failing to send a clear ESG message about the corporate behaviors that most concern investors. Nor does it provide the right incentives for companies to change such behaviors or allow asset owners to measure the reduction of risks that such behavioral changes may create in their portfolios or clearly tie such improvements to their portfolio valuation.

These realizations are expected to push asset owners to seek enhancements to the investment process. Such improvements are seen addressing two specific goals: 1) Ensure that capital can be allocated in a manner that highlights to companies the specific areas where they need to amend their business practices, in order to mitigate the most urgent pre-financial risks before they can severely impact portfolio value, and 2) identify and model data inputs that can help asset owners assess how well their capital allocation is working to reduce pre-financial systemic risks at a portfolio level, to ensure that their investments are properly positioned for short-term resilience and long-term growth.

Changes in Investment Manager Approach to ESG May Re-Define Industry

As asset owners focus on better understanding and mitigating risk, investment managers are in turn expected to respond by transforming their approach to security selection, portfolio construction, risk management, and solution development. Some of these changes are evolutionary and reflect activities already underway in some organizations, and other changes envisioned by survey participants are more revolutionary and could foundationally alter how investment management is performed. We outline the progression of changes expected by survey participants below:

Shift from Blended ESG Scores to Individual Measurable Key Performance Indicators: As asset owners grapple with an expanding view of responsible portfolio management, there is a growing need for investment products that will help *mitigate* non-financial risks, not just address headline ESG risks. This need for a more action-oriented portfolio may require investment managers to re-think their use of data, to consider E, S, and G individually and at a more granular level, and to upgrade their integration methodologies to better tie capital allocation to desired behavioral changes in areas related to pre-financial risks.

Part of this evolution in approach is likely to be the development of a more robust set of E-, S-, and G-linked key performance indicators (KPIs) that can be used to monitor how the companies making up the portfolio, score against specific measures and allow investment managers to track the changes in such scores over time. KPIs can be grouped to more effectively target specific ESG themes. The KPIs used to measure climate change are going to look different from the KPIs used to assess sustainable land use or the KPIs that inform gender equality. Moving to this thematic level will be an important shift in order to better tie the allocation of investment capital to the desired changes in corporate behavior being sought by asset owners.

These sets of E-, S- or G-themes linked to discrete sets of ESG KPIs, may begin to replace the current blended ESG scoring approach and allow for the creation of new benchmarks that can measure a new type of non-financial portfolio return that measures pre-financial risk mitigation.

Emergence of Dual-return Equity ESG "Theme Box" Products: Development of KPIs that could measure non-financial returns over time, might set the stage for a more revolutionary change in approach. For several years, survey participants have spoken about ESG as offering both a financial and "values"-based focus, but values are a difficult concept to measure. Shifting "values" to a set of thematic, benchmarked non-financial outcomes, each of which helps to reduce an E-, S-, or G-related risk in the portfolio may allow for the development of dual-return funds that offer both a financial return and mitigation of a specific type of pre-financial risk.

Measuring both the financial return and the improvements in pre-financial risks associated with ESG metrics, might allow for the creation of a whole new category of dual return investment options.

While these new funds may initially focus on "green chip" stocks — a subset of the stocks offering the best financial returns and the least exposure to negative E-, S-, or G-related risks – over time a more holistic set of offerings that provide a range of dual return E-, S-, or G-Value, Core, and Growth strategies may emerge. Having this range of product offerings would allow for not only best in class offerings, but higher risk-reward portfolios that could deploy investment capital to directly promote industry transitions and allow asset owners to benefit from the gradual improvement in pre-financial risks (ESG momentum), as well as from the impact that such improvements might have on companies' financial returns.

Much like "style" boxes emerged in the 1990s to make allocating to the range of equity strategies more defined, a new range of ESG "theme boxes" may emerge in coming years to similarly help facilitate portfolio diversification. Inherent in the launch of these types of funds and in the shift to dual-return products, would be the opportunity for investment managers to reinvent active management, and develop new portfolio construction approaches that better meet investors' needs and demonstrate new dimensions of manager expertise.

Expanded Use of Bonds & Structured Loans with Contractually Guaranteed KPIs: While dual-return equity products are seen as one likely area of innovation and equities today account for more than 50% of total ESG investments, the focus of investors and asset owners is already beginning to broaden to other asset classes. Survey participants see these products taking market share from equity ESG strategies over time. This shift would relate to the superior ability of bonds and structured loan products to ensure the reduction of pre-financial risks.

The ability of equity shareholders to influence corporate behavior is diffuse, as the only tools they have are their votes and active engagement with boards and management. By contrast, bonds and structured loans that can contractually build in metrics and goals are likely to provide a more direct route to creating change.

Using the same thematic approach and writing specific goals around the underlying E-, S-, or G-KPIs into the bond or structured loan issuances, could result in a second type of dual-return product and one that has an ability to better ensure desired pre-financial risk mitigation. Some traction in this direction is already emerging, as issuance of Green, Social, and Sustainability bonds rose to a record $286 billion in 2019[3] and some of those new offerings had explicit non-financial goals built into the contract language.

Expansion of Retail Solutions to Include Multi-Asset Class Dual-Return Products: Combining equities and bonds in multi-asset class solutions (MACS) is one of the fastest growing product areas in the investment management industry today—averaging an +11.0% CAGR for the past five years, while the broader market has grown at just +3.7%.[4] The launch of dual-return multi-asset class solutions (dual-return MACS) may emerge as managers gain understanding about how to manage funds to achieve both financial and non-financial returns.

Construction of such instruments will require a new type of allocation calculation that finds the efficient frontier between financial returns, non-financial returns, and risk. Allocating capital within investment solutions is likely to become a more nuanced skill as certain instruments will ensure the financial return more readily while other instruments and approaches will generate non-financial returns more easily. These products too may provide another pathway for active managers as regardless of whether the solution is comprised of passive building blocks or actively managed sleeves, the construction and oversight of the fund would require an active approach.

3 Citi Banking, Capital Markets & Advisory Debt Capital Markets based on data from Dealogic, updated as of 18th May 2020.
4 Citi Business Advisory Services analysis based on data from "The world's largest fund managers – 2019", Thinking Ahead Institute, https://www.thinkingaheadinstitute.org/en/Library/Public/Research-and-Ideas/2019/10/P_I_500_2019_Survey, "Global Asset Management 2019: Will These '20s Roar?", The Boston Consulting Group, https://www.bcg.com/publications/2019/global-asset-management-will-these-20s-roar.aspx; and a proprietary data subscription to Cerulli.

The same thematic lens required to build effective equity products may carry over to define the solutions space, making it easier for retail clients to target their capital to the concerns that resonate most with their personal values. The growing use of model portfolios and managed accounts to create more aligned solutions is already beginning to transform the solution space, as discussed in our 2020 Industry Evolution report. Adding in an ability for individuals to both pursue their desired financial return and drive a measurable values-linked change, may offer an additional dimension to the personalization of portfolios. Dual-return MACS may thus become an important part of the industry adoption of tailored solutions.

Growing Focus on Shaping Pre-Financial Risk Mitigation Strategies in Institutional Solutions: For institutional investors that may utilize a growing share of dual-return products to enhance risk management and fulfill their expanding view of responsible asset ownership, solution portfolios are likely to look beyond publicly traded equity and bond offerings to include a larger share of alternatives, private companies, and real assets. These strategies can use expanded investment techniques or the ability to influence the contract terms of deals to concentrate the non-financial risk mitigation.

For those investors able to co-invest in private assets, there is an additional opportunity to be part of the co-creation of non-financial returns and to own the data sets that get created to measure the reduction of such pre-financial risks. As more institutional risk models look to incorporate such data, the ability to own the inputs that feed analytics might provide a secondary revenue stream for asset owners.

Outlook for Rapid Industry Change

Debates around the efficacy of ESG investing have been widespread in recent years, but much of the concern can be linked to the way in which investment managers have been using opaque, indicative scoring and the often indirect and limited way that teams incorporate ESG considerations into their investment thesis. Having more precise ways of measuring E-, S-, or G-related KPIs; showing how changes in such measures over time might reduce the portfolio's pre-financial risks; and linking those KPIs to the appropriate E-, S-, or G-themes that allow asset owners to target their allocations in a manner that signals to companies which behaviors investors deem most concerning, could create an entirely new dialogue about ESG investing.

The opportunity for innovation and prospects for asset growth from the increased focus on ESG, have the potential to revitalize and reshape the investment management industry. In the following pages we dive in deeper to understand the past and present of ESG investing to help understand this inflection point and explore what the future may hold.

Section I: Understanding the Rise of ESG Investing

Survey participants had a lot to say on ESG investing in this year's Industry Evolution survey interviews. The variety of opinions we picked up ranged from ESG transforming the entire fabric of the investment management industry to ESG not being a new type of investing at all. We determined to write this dedicated paper on ESG, since it was simply too complex and multi-faceted a story to fit within the context of our broader annual report published in June 2020. While we have written about ESG for many years, never in the history of our survey discussions has the topic garnered so much attention or spurred so much debate.

One observation that quickly became clear was that there is a tremendous amount of ambiguity around exactly what is meant by ESG and how it differs from other types of socially responsible investing. The complexity of the eco-system surrounding ESG was also a point of confusion, as the jargon and acronyms in this space are significant with governments, NGOs, specialty organizations, and industry groups all pursuing, publishing, and promoting a confusing mix of actual and proposed rules, frameworks, goals, and standards.

Underlying all of that activity is, however, a growing pool of assets that are being awarded to investment managers for the express purpose of addressing the needs of investors around ESG. This is not, as many initially framed it, a European phenomenon nor is it solely a climate change concern.

The range of asset owners across the globe that are shifting their portfolios toward ESG investing is significant and growing. This report looks at the roots of ESG investing, its expression in today's investment landscape, how the demands of asset owners may prompt a significant change in the way that ESG investing occurs, and what that future may look like. Moreover, we try and explain why the Business Advisory Services team (that initially were ESG skeptics) have come to view these pending changes as potentially one of the most significant opportunities in decades for the investment management industry, based on the inputs we have gathered from our multi-year set of interviews.

Let's start making that argument with some level-setting.

Separation of ESG from SRI and Impact Investing

While aspects of the umbrella "socially responsible investing" category have been around for decades, ESG has taken a new form in recent years, with its influence now reaching a critical inflection point within the investment management industry. What was once a vaguely defined group of faith-based principles driving exclusionary stock selection practices has since evolved into a complex ecosystem of environmental, social, and governance considerations that are giving rise to new investing principles, valuation methodologies, and even business models.

While there are echoes of social issues that influenced responsible investing's early days re-emerging, investors of all types now see a range of motivations for viewing capital allocation through an ESG lens. This is reflected in the rapidly growing interest in ESG and its expansion across a wider range of asset classes.

History of ESG and the Umbrella Category of SRI Investing

Beginning in the 1800's, ethical codes and religious beliefs shaped ESG's earliest years as Quakers and Methodists established ***socially responsible investing (SRI)*** guidelines for their followers. The groups launched the first ethical unit trusts in the U.S. and U.K. that excluded investments into companies engaged in either tobacco or gambling.[1] Later, Muslims followed suit and used SRI to create funds that complied with Islamic law, or Sharia, that resulted in structures that prohibited investments into companies associated with weapons and alcohol. From these religious beginnings the term "sin stocks" emerged.[2]

This concept of excluding sectors and industries and of withholding capital to express values-based views continues to color many investors perception of ESG to the current day. Yet, while faith-based investing remains an attraction for many (having grown +33% over the past 5 years), this approach only accounts for ~$28 billion of AUM across 150 funds, according to Lipper, thus representing only a small proportion of today's broader universe of ESG-aligned assets.[3]

1 "ESG Investing Comes of Age", Jess Liu, Morningstar, February 11, 2020, https://www.morningstar.com/features/esg-investing-history
2 "Evolution of ESG", Hermes Investment Management, CityWire, May 11, 2018, https://citywire.co.uk/wealth-manager/news/evolution-of-esg/a1116486
3 "Faith-based Funds Attract Loyal Investors", Jeff Benjamin, InvestmentNews, August 20, 2019, https://www.investmentnews.com/article/20190820/FREE/190829993

Socially responsible investing remained predominantly religiously-driven until the 1960's, when exclusionary practices expanded to cover a broadening set of assets, not based on their alignment to *religious* principles, but instead based on their alignment to *social* principles linked to emerging anti-war, civil rights, and consumer rights movements.[4] This expansion helps explain why the ESG space is often associated with "values" investing. This first evolutionary step is depicted in Chart 1.1.

By the 1970's, companies were for the first time beginning to grapple with how to reconcile responsibility to their shareholders with the concerns of their broader ecosystem of interested parties. We can track the emergence of "stakeholder capitalism" to roots that emerged in this period, as evolving investment approaches sought to fuse faith-based with socially-progressive values, creating yet another recipe for "socially" responsible investing which in turn led to the creation of the first mutual funds reflecting faith-based values, civil rights-era sensibilities, and environmental concerns.[5]

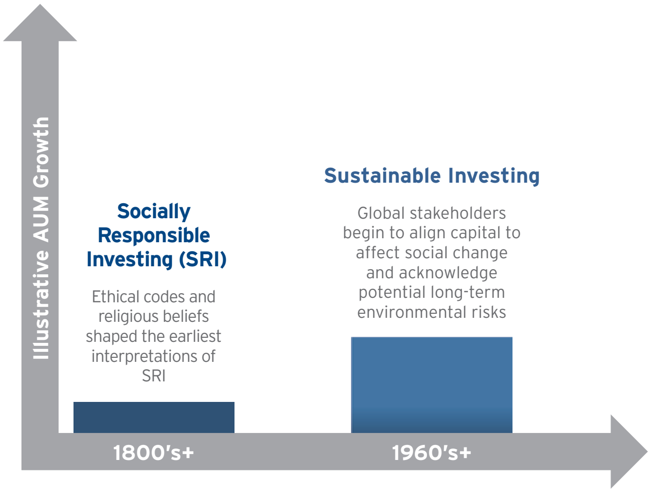
However, during the 1970's, using any "social" criteria in investing went against the orthodoxy, and investment vehicles were few. Critics were bolstered by Nobel prize-winning economist Milton Friedman's popularization of the idea of shareholder theory, where a corporation's primary responsibility was seen as delivering for their owners, which in turn meant that all decisions should be made with an eye toward profit-maximization with management taking on no explicit responsibility to either the public or society.[6]

Almost from the outset, however, there were opposing voices that joined the discourse on corporate purpose. By the late 1970s, the Reverend Leon Sullivan, a clergyman and civil rights leader, developed a code of conduct for companies, dubbed the Sullivan Principles, to promote social responsibility and to apply economic pressure in South Africa in response to the apartheid system of racial segregation.[7] Nearly 25 years later, these same considerations would evolve to become part of the United Nation's Global Compact.[8]

In the 1980's, social and corporate pressure to divest from South Africa reached a tipping point, ultimately influencing public policy and contributing to the end of apartheid. Environmental issues also started to become a part of corporate responsibility in the 1980s. The Exxon Valdez oil spill in Alaska led to the creation of the Coalition of Environmentally Responsible Economies, bringing together investors, corporate leaders, and the public sector to explore a transition to a low-carbon economy.[9]

The term ***"sustainable investing"*** gained currency as global groups of stakeholders acknowledged the potential long-term risks of the environmental issues of the time and the idea of stakeholder engagement around environmental, social, and governance issues grew into the 1990's. This was when the Domini 400 Social Index, now named MSCI KLD 400 Social Index, was launched as the first capitalization-weighted index built to track sustainable investments. This helped to further widen the funnel of assets being invested with an SRI-lens.

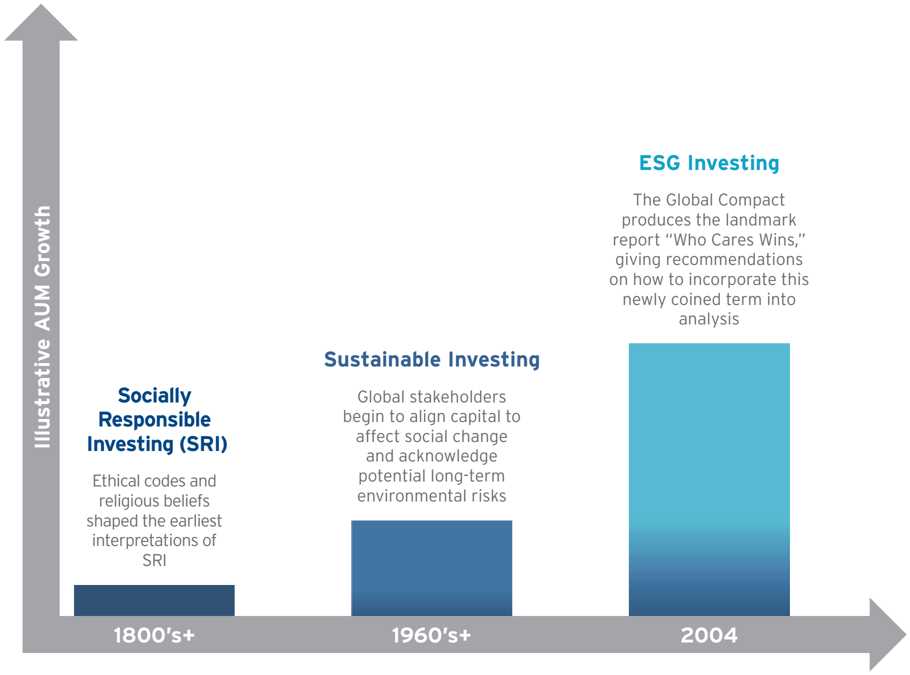
Chart 1.1: Key Milestones and AUM Growth in Socially Responsible Investing's Evolution



Source: Citi Business Advisory Services

4 "Evolution of ESG", Hermes Investment Management, CityWire, May 11, 2018, https://citywire.co.uk/wealth-manager/news/evolution-of-esg/a1116486
5 "From SRI to ESG: The Origins of Socially Responsible and Sustainable Investing", Blaine Townsend, Bailard Thought Leadership, June 2017, https://www.bailard.com/wp-content/uploads/2017/06/Socially-Responsible-Investing-History-Bailard-White-Paper-FNL.pdf?pdf=SRI-Investing-History-White-Paper
6 Ibid
7 Ibid
8 Ibid
9 "ESG Investing Comes of Age", Jess Liu, Morningstar, February 11, 2020, https://www.morningstar.com/features/esg-investing-history

Chart 1.2: Key Milestones and AUM Growth in Socially Responsible Investing's Evolution



Source: Citi Business Advisory Services

In the early 2000's, the United Nations launched the Global Compact Initiative, a voluntary, corporate-citizenship effort based on a set of human rights, labor, environmental, and anti-corruption principles, encouraging the deeper integration of these topics into capital markets. In 2004, the Global Compact produced the landmark report "Who Cares Wins", providing recommendations on how to incorporate the newly coined term ***"ESG investing"*** issues into analysis, asset management, and securities brokerage.[10] The continued evolution of the umbrella SRI space is shown in Chart 1.2.

In 2006, the United Nations' Principles for Responsible Investment (PRI) was launched, an effort aimed directly at engaging the investment community around these U.N. principles. This represented a watershed for ESG adoption. PRI has garnered more than 2,900 signatories from asset managers and institutional investors.[11] The launch of PRI and the nascent investment framework of ESG put this approach firmly on the radar for investment managers, leading to a significant uptick in the growth of assets.

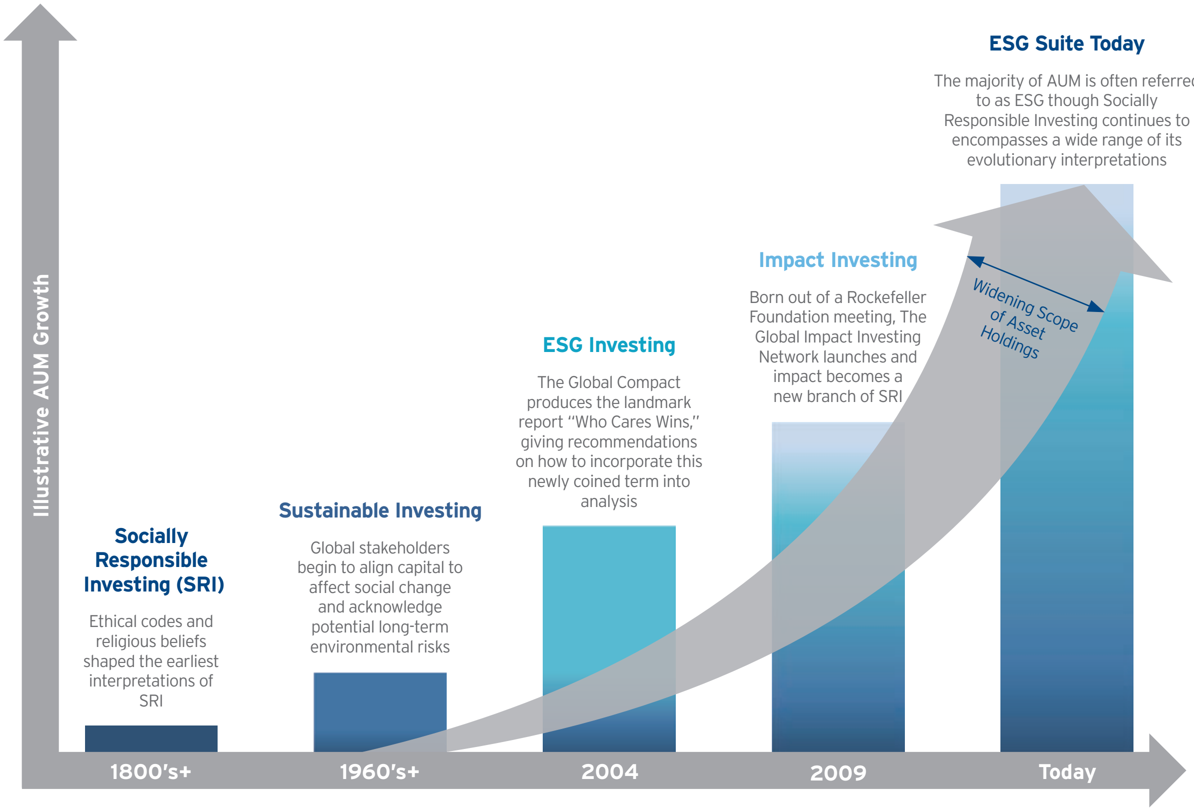
In 2009, the Global Impact Investing Network was launched, and ***impact investing*** became a new branch of consideration, along with socially responsible, sustainable, and ESG investing.[12] In addition to values-based financial allocations, these specific investments aim to create an impact on society that would not otherwise occur. Manufacturing this non-financial return is the primary focus of these funds. Impact investing has further propelled the umbrella set of SRI AUM with the World Economic Forum estimating that $1 trillion of assets will be committed to impact investing by 2020, an estimate that implies annual growth of +$250 billion.[13]

Chart 1.3 lays out a timeline of the milestones in the evolution of ESG and puts the recent growth of impact investing and growth of ESG today into perspective. The acceleration is clear with assets estimated at over $30 trillion.

The majority of this AUM is often categorized as ESG, though the broader term Socially Responsible Investing continues to encompass the wide range of its evolutionary interpretations. The language and definitions remain variable and often concepts and terms overlap. The absence of definitional clarity to help tie these considerations directly to products has recently given rise to regulatory efforts to both protect investors and facilitate the channeling of capital to "sustainable" investment initiatives—a catchphrase that tries to encompass the range of ESG and SRI investing approaches.

10 "Who Cares Wins: Connecting Financial Markets to a Changing World", The Global Compact, 2004, https://www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf
11 "Evolution of ESG", Hermes Investment Management, CityWire, May 11, 2018, https://citywire.co.uk/wealth-manager/news/evolution-of-esg/a1116486
12 Ibid
13 "UN Sustainable Development Goals", UN PRI, November 2017, https://www.unpri.org/sustainable-markets/sdgs

Chart 1.3: Key Milestones and AUM Growth in Socially Responsible Investing's Evolution



Source: Citi Business Advisory Services

"What has changed over the last 10 years is that ESG is now rooted in investment, not separate from it." — EMEA Investor

"ESG is a trend that won't stop. In the very near term, people might batten down that hatches, but the trend towards ESG is unstoppable." — NAM Hedge Fund

"ESG is an idea that has been beaten to death over the last 40 years. For now the shift is to be more aware of a broader sense of responsibilities." — NAM Investor

"Previously if you were trying to 'do good', someone else could buy the sectors you were excluding and outperform you. That isn't the case anymore." — NAM Asset Manager $500 billion - $1 trillion AUM

Current Regulatory Considerations & Evolving Global Frameworks

As always, understanding the regulatory landscape is of vital importance to addressing any opportunity and ESG is no exception. This is however a vast topic with varying interpretations and different implementations at the sectoral, regional, and global levels, so we will restrict our focus here to the impact of ESG-focused regulation and frameworks on the investment industry.

EU Becomes the Global Leader in Investment-Related ESG Regulation

Many policymakers and regulators were already beginning to think about how to shift capital flows towards sustainable investment before the recent pandemic, in part because of estimates about the costs that would accrue to governments as they sought to deal with the fallout from climate change and other related issues. Faced with now ballooning budget deficits as a result of the COVID-19 Crisis, this interest in linking capital to a broader set of "sustainable" goals has become an even more important concern.[14] Initiatives and programs promoting favorable tax treatment and/or more lenient capital requirements to encourage capital flow are fragmented however and there is considerable variance globally.

14 "Government Bailouts are Beginning: We're Keeping Track", John Detrixhe, Quartz, March 17, 2020, https://www.economist.com/briefing/2020/03/19/governments-are-spending-big-to-keep-the-world-economy-from-getting-dangerously-sick

European regulators are taking the lead on legislation that could assist in managing the risks from climate change, natural disasters, environmental degradation, and social issues. Regulators in Europe have been working hard to increase the transparency and accountability of ESG investments. For example, in the European Union, the Disclosure Regulation which comes into effect in 2021 is intended to create a level playing field for ESG products and services. This is critical for investors because it makes certain disclosure requirements *mandatory* for any firm that markets their product as sustainable or environmental, including pensions, insurers, financial advisors, and individual portfolio managers.

Additionally, managers have to be able to justify their investments from an environmental or sustainability perspective if they wish to continue to label their funds as an ESG product. This latter requirement is intended to prevent "greenwashing", the re-branding of previously non-ESG products as being ESG-compliant. The objective is to reduce barriers to investing in ESG products by making it easier for investors to compare fund performance against more standardized metrics, with the goal being that investors do not find it is "disproportionately burdensome to check and compare different financial products".[15]

Asia is also starting to make strides in its regulatory regime, helping to make its maturing markets more attractive to capital as its investment management industry grows. For example, in May 2020, the Chinese Central Bank announced its decision to remove "clean utilization of fossil fuels" from a list of projects that could be classed as eligible for green bond financing, explaining that the decision was taken to "align to international standards."[16] China and Europe are also in talks on a joint "green task force" that would address shared sustainable finance taxonomies and further improve global regulatory disclosure standards.[17]

Interpreting and Aligning ESG Requirements around Fiduciary Duty

One of the significant variances in regulatory views around ESG investing has emerged around differing interpretations of how this approach fits within a definition of fiduciary duty. Some jurisdictions consider integrating ESG considerations to be a core part of the fiduciary role based on their view that these risks may affect the *future* value of assets held in portfolios. Conversely, others believe that elevating ESG as its own unique investment consideration might negatively affect *current* returns, thus jeopardizing potential asset growth and being out of line with the responsibility to act in the end investors' best financial interest.

The former CIO of the largest public sector pension in the world, the Japanese Government Pension Investment Fund (GPIF), Hiro Mizuno, who was a major force in the growth of ESG adoption in Asia, has been famously vocal noting that if investors or managers are creating value for a client for 20 to 30 years then "failing to take these [ESG] issues into account is against our fiduciary duty".[18]

Many pensions share Mr. Mizuno's perspective and see ESG issues as inextricably linked to their fiduciary duty. This is true even in the United States, a region seen by many as lagging in the ESG space. Large public plans like the Washington State Investment Board, CalPERS, and New York City Teachers have taken actions that emphasize ESG concerns. Other U.S. public pensions are less sure and cited the challenge of balancing long-term considerations and the potential of a fiduciary breach against ongoing concerns about whether or not an ESG focus is a negative for portfolio returns.[19]

Whereas public plans in the U.S. are balancing the pros and cons of how to incorporate ESG into their concept of fiduciary duty, private pension plans are often less forward leaning on ESG integration given the interpretation of fiduciary duties imposed by the corporate Employee Retirement Income Security Act (ERISA)[20] and the Department of Labor (DoL) 2018 clarifications that instruct corporate plans to "not too readily treat ESG factors as economically relevant."[21]

These cautionary notes may actually evolve into outright restrictions given a recently announced proposal from the Department of Labor that would instruct fiduciaries not to invest in ESG vehicles if they determine that the underlying investment strategy seeks to subordinate return or increase risk for non-financial objectives. Survey participants suggest that this could have a "chilling effect" on ESG's adoption in the United States.

15 "Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Text with EEA relevance)", Eur-Lex, June 22, 2020, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32020R0852
16 "China to stop green bond financing for 'clean coal' projects", Christian Shepherd and Don Weinland, Financial Times, May 29, 2020, https://www.ft.com/content/253f969c-37e0-42cd-9cdf-e06a5262fffe
17 "China and EU to Form Taskforce on Green Taxonomies", Responsible Investor, June 19, 2020, https://www.responsible-investor.com/articles/china-and-eu-to-form-taskforce-on-green-taxonomies
18 "Why ESG Investing is a Fiduciary Duty of Asset Managers", Bayani S. Cruz, The Asset, https://esg.theasset.com/ESG/39129/why-esg-investing-is-a-fiduciary-duty-of-asset-managers
19 "Public Pensions Forced to Play Defense on ESG", FundMap, https://www.fundmap.com/news/public-pensions-forced-to-play-defense-on-esg-investments/?pdf=45279
20 "Financial Factors in Selecting Plan Investments, A Proposed Rule by the Employee Benefits Security Administration on 06/30/2020", US Federal Register, June 30, 2020, https://www.federalregister.gov/documents/2020/06/30/2020-13705/financial-factors-in-selecting-plan-investments
21 "Field Assistance Bulletin No. 2018-01, Department of Labor, https://www.dol.gov/agencies/ebsa/employers-and-advisers/guidance/field-assistance-bulletins/2018-01

The DoL's proposal is for a new investment duties rule that would clarify previous guidance on ESG investing. The proposal is designed, in part, to make clear that ERISA plan fiduciaries may not invest in ESG vehicles when they understand an underlying investment strategy of the vehicle is to subordinate return or increase risk for the purpose of non-financial objectives: "the duty of prudence prevents a fiduciary from choosing an investment alternative that is financially less beneficial than an available alternative."[22] The proposal acknowledges that ESG factors can be pecuniary factors, but only if they present economic risks or opportunities that qualified investment professionals would treat as material economic considerations under generally accepted investment theories. The DoL's proposed amendment of ERISA is worth quoting at length because of its potential significance:

"Public companies and their investors may legitimately and properly pursue a broad range of objectives, subject to the disclosure requirements and other requirements of the securities laws. Pension plans covered by ERISA are statutorily-bound to a narrower objective: management with an 'eye single' to maximizing the funds available to pay retirement benefits. Providing a secure retirement for American workers is the paramount, and eminently-worthy, 'social' goal of ERISA plans; plan assets may not be enlisted in pursuit of other social or environmental objectives."[23]

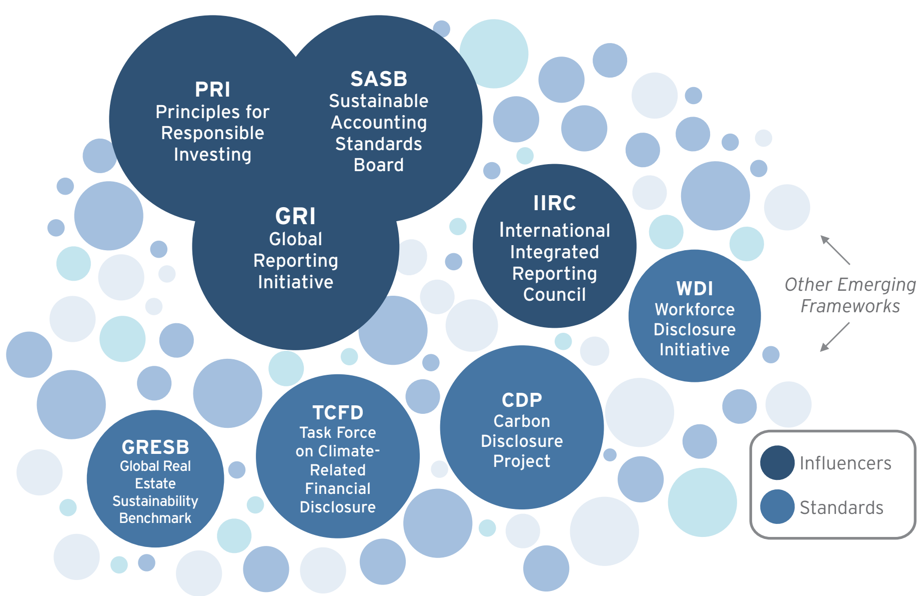
However, as the Harvard Law School Forum for Corporate Governance argues, even if approved the amendment may, ironically, further the development of the ESG investment infrastructure: "if implemented, the new rules may spur further demand for comparable, decision-useful ESG data to help satisfy the burden imposed by the DoL to justify the inclusion of ESG factors in private-sector retirement plans."[24]

A Growing Web of Voluntary Global Frameworks

Alongside the formal regulatory initiatives outlined above to help clarify and codify ESG metrics, there has been a rapidly shifting web of *unregulated* international frameworks. A number of non-governmental organizations are encouraging many asset owners, managers, and corporates to voluntarily adopt standards, e.g., around ESG reporting and stewardship codes. The largest of these are the UN-backed Principles for Responsible Investment (PRI), Sustainable Accounting Standards Board (SASB), and the Global Reporting Initiative (GRI), as illustrated in Chart 1.4.

These voluntary international frameworks are beginning to serve several functions. First, they can create a potential blueprint for future legislative actions, and in the interim they begin to fill in some of the white space left by government regulators. Accordingly, many asset owners and asset managers see voluntary compliance with well-known frameworks as a way to get ahead of requirements which may become mandatory in the future.

Chart 1.4: Standards and Influencers in the Voluntary Reporting Framework Universe



Source: Citi Business Advisory Services

22 "Financial Factors in Selecting Plan Investments, A Proposed Rule by the Employee Benefits Security Administration on 06/30/2020", US Federal Register, June 30, 2020, https://www.federalregister.gov/documents/2020/06/30/2020-13705/financial-factors-in-selecting-plan-investments

23 "Financial Factors in Selecting Plan Investments, A Proposed Rule by the Employee Benefits Security Administration on 06/30/2020", US Federal Register, June 30, 2020, https://www.federalregister.gov/documents/2020/06/30/2020-13705/financial-factors-in-selecting-plan-investments

24 "DOL Proposes New Rules Regulating ESG Investments", Martin Lipton, Wachtell, Lipton, Rosen & Katz, Harvard Law School Forum for Corporate Governance, July 7, 2020, https://corpgov.law.harvard.edu/2020/07/07/dol-proposes-new-rules-regulating-esg-investments/

Furthermore, as the number of signatories and adoptees grows, these frameworks are beginning to shape new norms among the peer set of asset owners and pensions. For example, in 2006 when the UN-backed Principles of Responsible Investing (PRI) were launched, the goals were adopted by 63 investment companies (asset owners, asset managers, and service providers) with $6.5 trillion in AUM. Today, it boasts over 3,000 signatories representing $85 trillion in AUM and momentum is clearly growing. While it took over a decade for the number of signatories to the PRI to reach 2,000 in November 2018 by May 2020, less than 18 months later, it had risen by more than 50% to 3,109[25] and 72% of the total number of signatories today are investment managers.[26]

Institutional investors are navigating an interconnected and complex web of exposures when it comes to these mandatory and voluntary guidelines, as they often hold concentrated ownership positions in large numbers of countries and are subject to the influences of both formal regulation, and societal pressure to adopt voluntary frameworks. Survey participants suggest that understanding where each may overlap or inform the other is an increasing burden.

To combat this complexity and ensure their compliance with the variety of standards and frameworks across regions, asset owners (and investment managers) may, as they did with Europe's data privacy rules (GDPR), eventually consider a "gold-plating" approach, adhering to the strictest standards and applying them across the entirety of their portfolio.

Adoption is already being assisted and accelerated by the mutual reinforcement of voluntary frameworks. For example, the Financial Stability Board's (FSB) Taskforce on Climate-related Financial Disclosures (TCFD) that develops voluntary climate-related financial risks disclosures for use by companies, is being touted by the UK Government that recently set out its expectation for all listed companies and large asset owners to disclose in line with the TCFD recommendations by 2022.[27] This follows the U.N. PRI's move to make TCFD-based reporting mandatory for its signatories this year.[28]

"It doesn't matter how skeptical I am about the return potential for ESG. If 51% of the market starts to price according to ESG, then it's right." — European Asset Manager <$500 billion AUM

"If a regulator or jurisdiction is going to do something about [ESG], it is going to affect your investments so you need to understand it. Staying ahead of regulation is becoming increasingly important." — EMEA Investor

"Sustainable investing will be about frameworks and what works for you and what you care about. That isn't homogenous for all investors. So yes, there will be more standardization but there are also differences." — Wealth Manager

"Ultimately, there will be more ESG standards. We'll be measured on the way we invest, the way we engage, and anything else that can be measured." — Wealth Manager

Large Institutional Asset Owners Drive ESG Adoption

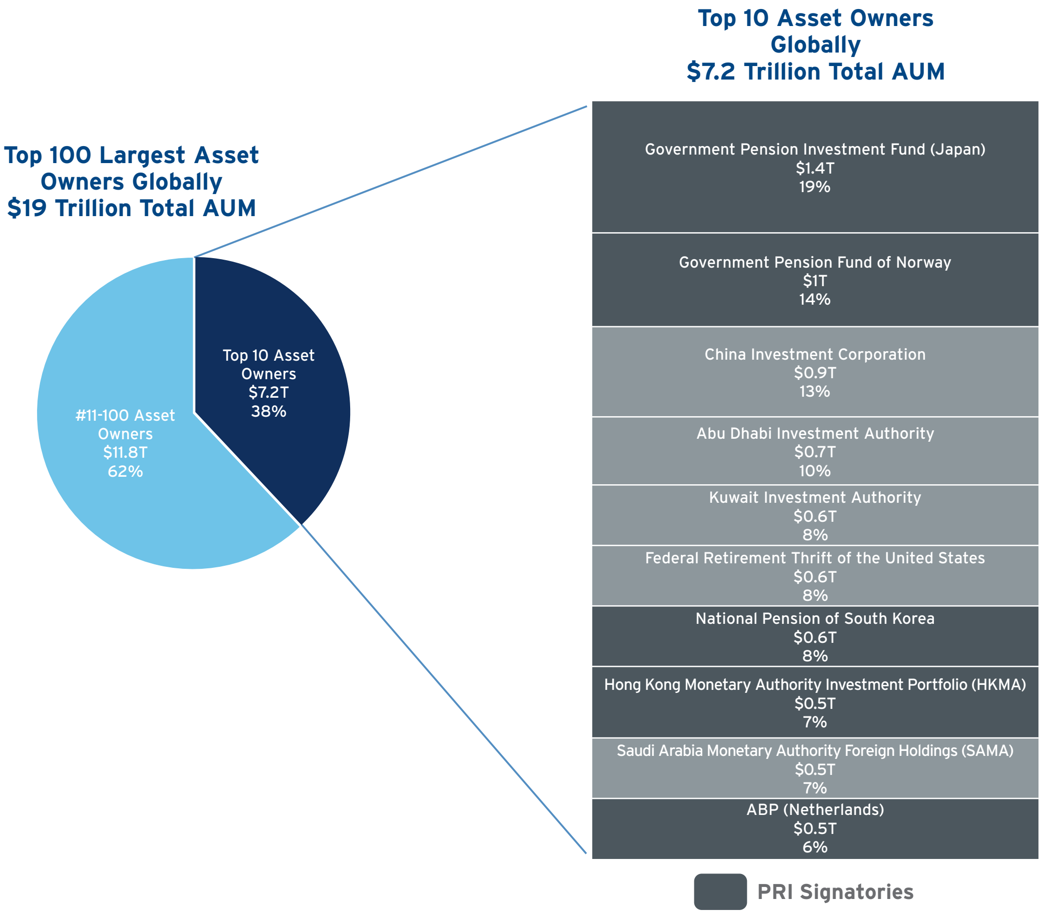
Major institutional asset owners around the world have been the dominant force promoting a focus on ESG investing. The two largest asset owners in the world—Japan's GPIF and Norway's Norges—are U.N. PRI signatories as are half of the top 10 institutional investors globally. These market leaders have explicitly committed themselves to ESG principles and collectively account for $3.9 trillion in asset as shown in Chart 1.5.

Even in the U.S., despite regulatory concerns cited earlier, institutional investors, including U.S. public pensions, are actively incorporating ESG and account for nearly 50% of all ESG institutional investment globally according to the U.S. Forum for Sustainable and Responsible Investment (SIF).[29] Chart 1.6, taken from Callan Institute's 2019 ESG Survey of 89 U.S. institutional investors, shows how outside of corporate pensions that are bound by ERISA considerations, nearly half or more of U.S. institutional investors are incorporating ESG factors into their investment decisions.

The interest of global sovereign and public pension funds in each aspect of the E, S, and G landscape reflects a natural alignment between their longer investment horizons – driven by the multi-generational profile of their members – and the time frame needed to implement and evaluate the results of ESG approaches. Moves to increase this alignment can be seen across the world.

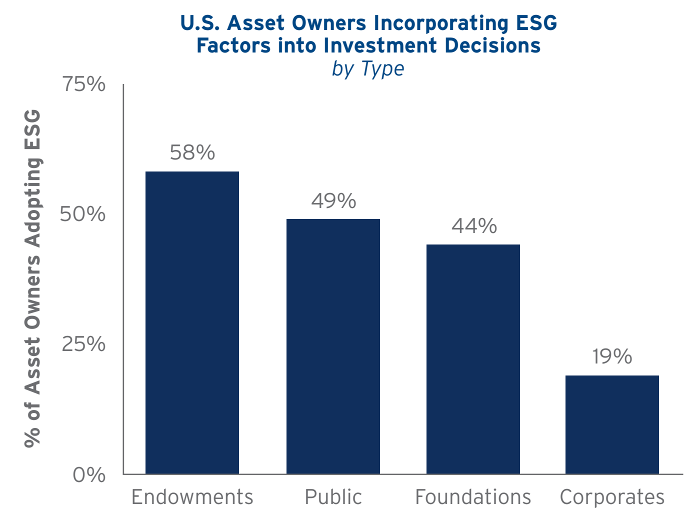
25 "Signatory Directory", Principles for Responsible Investment, https://www.unpri.org/signatories/signatory-resources/signatory-directory
26 Ibid
27 "Green Finance Strategy: Transforming Finance for a Greener Future", HM Government, July 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf
28 "TCFD-based reporting to become mandatory for PRI signatories in 2020", UN PRI, February 18, 2019, https://www.unpri.org/news-and-press/tcfd-based-reporting-to-become-mandatory-for-pri-signatories-in-2020/4116.article
29 "Report on US Sustainable, Responsible, and Impact Investing Trends", US SIF, 2018, https://www.ussif.org/files/Trends/Trends%202018%20executive%20summary%20FINAL.pdf

Chart 1.5: Half of Top 10 Asset Owners are UN PRI Signatories



Source: Citi Business Advisory Services' analysis based on data from the Thinking Ahead Institute's Asset Owner 100, https://www.thinkingaheadinstitute.org/en/Library/Public/Research-and-Ideas/2019/11/AO100_2019_Survey and the UN PRI signatory directory, www.unpri.org

Chart 1.6: Categories of Asset Owners Driving ESG



Source: "2019 ESG Survey", Callan Institute, 2019, https://www.callan.com/wp-content/uploads/2019/09/2019-ESG-Survey.pdf

In 2016, CalPERS, the largest public pension fund in the United States, rolled out their five year plan for governance and sustainability considerations across their investment portfolio.[30] It was also around this time that the world's largest pension, Japan's $1.3 trillion Government Pension Investment Fund (GPIF) announced its plan to increase its allocation of equities to socially responsible and environmentally-focused investing from 3% to 10%.[31] And in 2019, 50 financial institutions, primarily pension funds and insurers in the Netherlands, signed the Climate Agreement and have committed themselves to reporting on the climate impact of their investments from 2022.[32]

These asset owners are well positioned to influence the future direction of companies. Collectively they own more than 50% of the equity across 10% of the world's largest companies; and in half of the world's largest companies, the three largest shareholders—typically large public pensions—own more than 50% of the firm's shares.[33] This ownership concentration in combination with many of these leading asset owners prioritizing ESG considerations, as reflected in commitments such as becoming PRI signatories, is adding serious heft to the demand for ESG aligned investment products.

Asset owners have additionally been joining forces to influence corporate behavior to collectively increase their influence over a wider range of E, S, and G issues.

- As early as 2016, six of the world's largest institutional investors – Canadian Pension Plan Investment Board (CPPIB), Ontario Teachers' Pension Plan in Canada, ATP and PGGM in the Netherlands, Singapore's GIC and New Zealand's Superannuation Fund – announced a $2 billion initial investment into their newly-launched Long Term Value Creation Index, which includes nearly 250 companies that are in the top tier of corporate governance scoring, meet high financial standards and generate a threshold amount of return on equity (ROE) criteria.

- In 2017, a group of investors banded together to form The Climate Action 100+, an organization that today cites more than 450 investors with over $40 trillion collective assets under management.[34] This organization seeks to the world's largest corporate greenhouse gas emitters take the necessary action on climate change. In its inaugural climate change risk report in 2019, CalPERS highlighted its assessment that 20% of its $180 billion equity portfolio faced material financial risks due to climate change and stated that being a global investor came with significant responsibility to utilize engagement as a tactic to change corporate behavior.[35]

These and a host of other sustainability efforts by major institutional asset owners highlight the global groundswell of interest in more deliberate and collective action around environmental, societal, and governance issues, and illustrate the impetus for growth around the world in ESG-aligned investment products.

"There is a need to allocate savings more long-term to productive investment strategies and the key is to keep the complexity down to a minimum. Taking ESG into perspective, clearly we want to make sure that the investments we are putting into our portfolio are going to be sustainable, reliable, and deliver returns over that time." — EMEA Investor

"ESG reflects our responsibility to our investors. But it's both leadership and a fund reflection. On a fundamental level, we share the belief of our investors when they say what they want and we collaborate together. They play a role, and we play a role." — EMEA Investor

Growth in ESG-Aligned Assets under Management

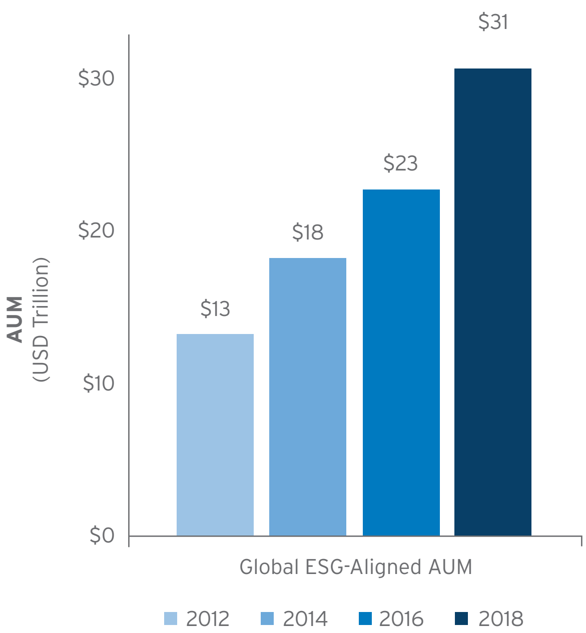
Determining the exact amount of the world's assets being managed via ESG investing is a somewhat debatable topic. At the highest level, many cite the Global Sustainable Investment Alliance's (GSIA) figures. Their analysis presented in Chart 1.7 shows rapid growth with total AUM increasing from $13 trillion in 2012 to $31 trillion in 2018.

GSIA only publishes their estimate every 2 years, however, and this figure was from the end of 2018. Moreover, their total includes assets where investment teams reportedly consider, but may not direct investments using ESG principles. Section II will explore how important this distinction is in more depth.

Another GSIA report is not due out until the spring of 2021. The growing emphasis on ESG in our survey interviews over the past 2 years seems to indicate a significant acceleration of interest since their last report. This perception is backed up by the somewhat limited data points available that focus exclusively on ESG funds.

30 "CalPERS adopts first-ever ESG policy plan", Annabelle Ju, Secondaries Investor, August 17, 2016, https://www.secondariesinvestor.com/%EF%BB%BF-calpers-adopts-first-ever-esg-policy-plan/
31 "CSR: Pension Funds Turn Up ESG Dial", Helen Avery, Euromoney, August 3, 2017, https://www.euromoney.com/article/b144mx79fm2bw1/csr-pension-funds-turn-up-esg-dial
32 "Fifty financial institutions sign Dutch climate goal agreement", Sunniva Kolostyak, European Pensions, July 11, 2019, https://www.europeanpensions.net/ep/Fifty-financial-institutions-sign-Dutch-climate-goal-agreement.php
33 "Owners of the World's Listed Companies", OECD, 2017, http://www.oecd.org/corporate/owners-of-the-worlds-listed-companies.htm
34 Climate Action 100+, https://climateaction100.wordpress.com/about-us/
35 "The Importance of Corporate Engagement on Climate Change", CalPERS, December 2019, www.calpers.ca.gov/docs/corporate-engagement-climate-change.pdf

Chart 1.7: Global ESG AUM Growth



Source: 2012-2018 Global Sustainable Investment Alliance annual review surveys, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

According to such reporting, sustainable funds attracted assets at record levels in 2019: Inflows into European funds dedicated to sustainable investing surged to +$132 billion and a growing number of funds with climate-dedicated mandates were launched.[36] Net flows into open-ended and exchange-traded sustainable funds available to U.S. investors totaled +$20.6 billion, nearly four times the previous annual record set in 2018 according to analysis from Morningstar's review of 300 funds.[37]

Notably, to be considered within this Morningstar analysis, funds needed to demonstrate a significant emphasis on ESG. The figures did not include those that employ only limited exclusionary screens or the ballooning number of funds that only consider ESG factors in a limited way as a part of their security selection.

This need to clarify the fund universe in such precise terms is a sign of how the commitment to ESG is often at odds with the expression of ESG in investor portfolios.

ESG as a Sidecar to the Investment Process

While ESG has been a growing consideration in the investment process, there remains a significant gap between many of the public commitments being released by investment managers to align their portfolios to ESG criteria and the reality of how this is being accomplished. Cerulli Research estimates that 88% of total assets being managed in the public markets are affiliated with a signatory of the U.N. PRI, but this stands in stark contrast to a 2019 review of product documentation and fund prospectuses that found that only 4.5% of funds affiliated with PRI signatories explicitly cited ESG criteria as part of their investment process.[38]

This mirrors the wide differences reported in total ESG AUM due to differing interpretations and methodologies — some estimates are $12 trillion and some are closer to $30 trillion. Our bottom-up analysis of funds explicitly listed as ESG products provides a number closer to $3 trillion. While significantly lower than the GSIA headline figure, it is important to note that even the smallest $3 trillion estimate puts assets explicitly being managed under ESG mandates on par with the size of the entire hedge fund industry.

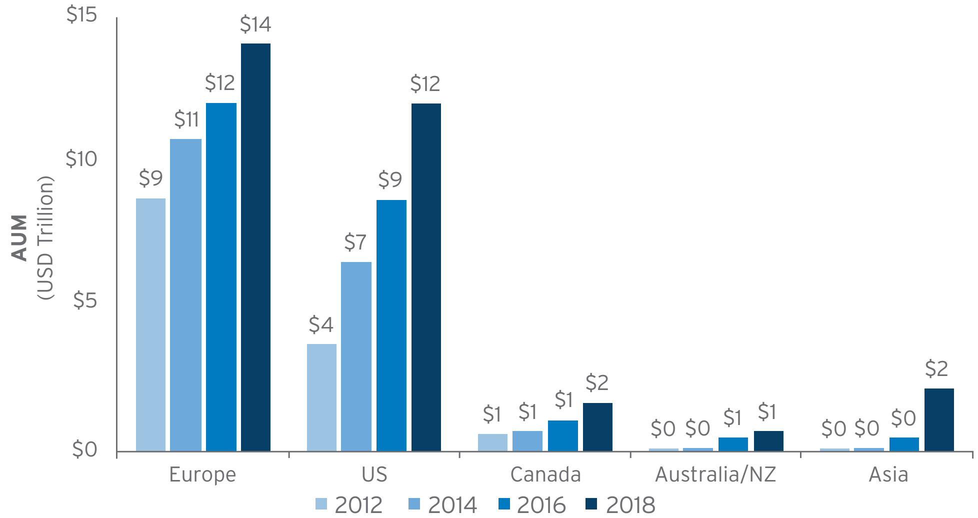
Disparities clearly reflect the phenomenon of "green-washing" wherein existing funds are recast as considering ESG, but where there is no discernible change in the underlying investment process. This allows firms to market themselves as offering ESG products to benefit from the growing interest in such products. In 2019, Morningstar identified more than 250 funds in Europe which had been relabeled 'sustainable' from previously being 'traditional', and which represented an estimated 10%-20% of the European sustainable fund universe.[39]

Breakdown of Global AUM

Regionally, interest in ESG investing is still very uneven. According to GSIA, this regional variation is driven by a mix of industry maturity, regulation, and cultural factors.[40] Europe registers the highest level of interest in ESG investing with $14 trillion AUM in 2018, but the U.S. is not far behind at $12 trillion and has been growing more quickly. Between 2012 and 2018, European assets increased by +56% whereas U.S. AUM grew by +200%. While significantly smaller, Asian interest is increasing the most rapidly. These figures are detailed in Chart 1.8.

36 "European ESG Funds Pull in a Record $132 Billion in 2019", P&I, January 31, 2020, https://www.pionline.com/esg/european-esg-funds-pull-record-132-billion-2019
37 "Sustainable Funds Flows in 2019 Smash Previous Records", Jon Hale, Ph.D., CFA, Morningstar, January 10, 2020, https://www.morningstar.com/articles/961765/sustainable-fund-flows-in-2019-smash-previous-records
38 "Asset Managers Say They're Into ESG. Their Product Descriptions Say Otherwise", Amy Whyte, Institutional Investor, November 14, 2019, https://www.institutionalinvestor.com/article/b1j1161j66t61g/Asset-Managers-Say-They-re-Into-ESG-Their-Product-Descriptions-Say-Otherwise
39 "Surge in Funds Rebranding as Sustainable", Elizabeth Stuart, Morningstar, April 21, 2020, https://www.morningstar.co.uk/uk/news/201590/surge-in-funds-rebranding-as-sustainable.aspx
40 "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

Chart 1.8: Global ESG AUM Growth by Region



Source: 2012-2018 Global Sustainable Investment Alliance annual review surveys, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

European Asset Owners Lead the Way on ESG

Europe dominates the ESG AUM landscape with $14.1 trillion at the end of 2018. A 2019 global study found that Europe was the dominant region globally for ESG integration in the investment process, and that the combined forces of increased regulatory pressure for corporate disclosure alongside Europe's leadership around climate change were greatly contributing to sharpening investor perceptions and preferences around sustainability.[41] Environmental funds are still the single largest themed category however, and despite representing a relatively small total share, they dominate both in terms of number of funds and total assets.[42]

ESG adoption and leadership by Northern European asset owners has historically been strong, and they continue to actively evolve their practices. For example, in Norway, Norges, the world's largest sovereign wealth fund that derives its base assets from petroleum extraction, plans to drop oil and gas stocks from its portfolio as it prepares for a shift away from fossil fuels and move towards sustainable investing.[43]

APAC ESG AUM Growing Rapidly, From a Smaller Base

The ESG story in Asia is unfolding at the sub-regional or national level and there is significant variation. Japan is the world's third largest center for sustainable investing after Europe and the U.S. As noted throughout this section, Japan's GPIF has led much of the regional gain in ESG aligned AUM in recent few years, but other countries are acting to narrow the gap. In Australia, a recent survey from 'Responsible Investment Association Australasia' that included 125 Australian investors with a combined AUM of A$1.7 trillion ($1.1 trillion), concluded that allocations to impact strategies in Australia could potentially grow to A$100 billion over the next five years from A$19.9 billion at the end of 2019.[44] In India ESG-linked assets are estimated to grow from $30 billion at the end of 2019 year-end to $240 billion over the next 10 years.[45]

Singapore has announced intentions to establish itself as a hub for green finance in the region,[46] and in China, new regulations are set to come into force this year that will make disclosure of environmental factors mandatory for Chinese listed corporations and primary bond market issuers. China's regional ESG leadership ambitions can also be inferred from the rise in the number of PRI signatories in China growing from just 7 in 2017 to 33 in 2019. In particular, many are looking to see how much this emphasis on ESG principles translates into China's vast One Belt One Road initiative.

41 "Europe leads institutional investors' embrace of ESG", Hazel Bradford, P&I, September 4, 2019, https://www.pionline.com/esg/europe-leads-institutional-investors-embrace-esg

42 "European Responsible Investing Fund market 2019: A focus on "tagged" sustainable funds", KPMG, June 2019, https://assets.kpmg/content/dam/kpmg/lu/pdf/lu-en-European-Responsible-Investment-Fund-2019.pdf

43 "Europe leads the $31tn charge on sustainable investing", Richard Henderson, Financial Times, June 1, 2019, https://www.ft.com/content/fef1a4fc-8354-11e9-b592-5fe435b57a3b

44 "Australian Impact Investor Insights, Activity and Performance Report 2020", Responsible Investment Association Australasia, 2020, https://responsibleinvestment.org/wp-content/uploads/2020/06/Benchmarking-Impact-2020-full-report.pdf

45 "ESG Investing Scenario in India", Yes Bank, December 2019, https://www.yesbank.in/pdf/esg_investing_scenario_in_India#:~:text=In%20India%2C%20ESG%20investing%20has,in%20the%20next%2010%20years

46 "ESG investment starts to gain a foothold in China", Fiona Reynolds, Nikkei Asian Review, January 7, 2020, https://asia.nikkei.com/Opinion/ESG-investment-starts-to-gain-a-foothold-in-China

North America's ESG Growth Has Been Relatively Slower, Focused on Governance:

Though its level of interest in ESG investing is rising, proportionately investors in the U.S. have been slower to adopt ESG than in other regions, particularly when measured against the overall size of its investment pool. Moreover, much of the interest cited around ESG from U.S. investors tilts in a different direction than in Europe. Rather than a focus on climate change and environmental issues, U.S. investors focus more extensively on governance issues, especially around disparities such as executive to worker pay ratios and gender balances on boards and in management suites.

In part, this helps to explain why debate about whether ESG is a separate approach to investing at all often originates from U.S. market participants. Governance factors are more commonly seen as a part of existing financial models, particularly compared to environmental considerations. In a 2019 study by CoreData Research, that measured engagement with various ESG strategies on a scale of 1 to 10, North America had the lowest score of 3.6, versus a global average of 4.2.[47] Only 22% of U.S. public plans even mention the term 'ESG' or 'responsible investing' in their annual reports, websites, or other public documents, compared to 78% of their global peers.[48]

There are, however, signs that this situation may be changing. According to a recent 'Global Sustainable Fund Flows' report by Morningstar, while U.S. investment managers account for less than 10% of sustainable funds and 14% of total sustainable assets globally, the region accounted for 23% of global flows in Q1 2020 or +$46 billion of net inflows.[49] Survey participants cited growing social anxiety in the U.S. around income and racial inequality as a result of the COVID-19 crisis, and many speculated that this may work to shift the region to a more dispersed ESG focus and away from as heavy an emphasis on G factors.

Highlights from Other Areas around the World:

While ESG-linked AUM totals from other regions are just beginning to grow, there does appear to be significant interest.

- According to a 2019 Natixis ESG survey, 85% of Latin American investors want to be able to allocate to funds that line up with their values, and 63% of investors consider their investments as an opportunity to make a positive social impact. Further, 54% of the institutional investors surveyed say they are currently incorporating ESG factors into their investment process.[50]
- Sustainable investing in Sub-Saharan Africa is also seen as having a niche foothold at present, anchored in the region's largest investment market, South Africa. Regulations in that country require that pension fund investments include ESG considerations in their portfolio, and in 2017 the Johannesburg Stock Exchange launched a green bond segment.[51]

"In Europe it would be a non-starter to not be an ESG player, but in Asia it is still in the nascent stage. There is a lower competition in Asia and probably a chance to be ahead of the curve." — APAC Asset Manager <$500 billion AUM

"In northern Europe, ESG has been in vogue a long time as well as in Australia and Canada. It's newer in the US and is more headline noise. Millennials are more consumed with ESG so we'll see how it plays out. I think it's a trend that will continue and will grow to a certain percent of the market." — NAM Asset Manager $500 billion - $1 trillion AUM

"The amount of capital inflow into highly ESG-rated stocks over the last few years has been huge. You can either ride the momentum or be a contrarian and trade the mean reversion but that has to be over a multi-year horizon. At this point it is a religious argument." — APAC Investor

Having reviewed the path toward today's understanding and growth in ESG investing and examined how an expanding network of governmental, NGOs, and voluntary networks are drawing in some of the world's largest investors and investment managers, Section II will now examine how ESG is being realized across the set of existing investment strategies, and start to explore why many of those approaches are simply managing headline risk and not truly utilizing investor capital in a manner that may drive meaningful change.

47 "Europe leads institutional investors' embrace of ESG", Hazel Bradford, P&I, September 4, 2019, https://www.pionline.com/esg/europe-leads-institutional-investors-embrace-esg
48 "US public pension funds lag on climate", Scott Kalb, Top1000Funds, February 28, 2020, https://www.top1000funds.com/2020/02/us-public-pension-funds-lag-on-climate/
49 "There's Ample Room for Sustainable Investing to Grow in the U.S.", Jon Hale, Ph.D., CFA, Morningstar, May 14, 2020, https://www.morningstar.com/articles/984776/theres-ample-room-for-sustainable-investing-to-grow-in-the-us
50 "Latin America has the Greatest Global Demand for ESG Investments", Natixis, August 5, 2019, https://www.im.natixis.com/latam/research/latin-america-has-the-greatest-global-demand-for-esg-investments
51 "Sustainable Investment in South Africa", Akshar Sewkuran, Ethical boardroom, April 19, 2019, https://ethicalboardroom.com/sustainable-investment-in-south-africa/

Section II: Current ESG Investments Focus on Managing Headline Risk

The techniques used to invest funds with an ESG lens are just emerging. Early efforts have focused on broad brush approaches that look to redress the headline risk of having companies with poor ESG records in the portfolio. These investment strategies either look to exclude companies, or integrate ESG alongside a wide array of other financial considerations in determining the proper portfolio weighting of a security.

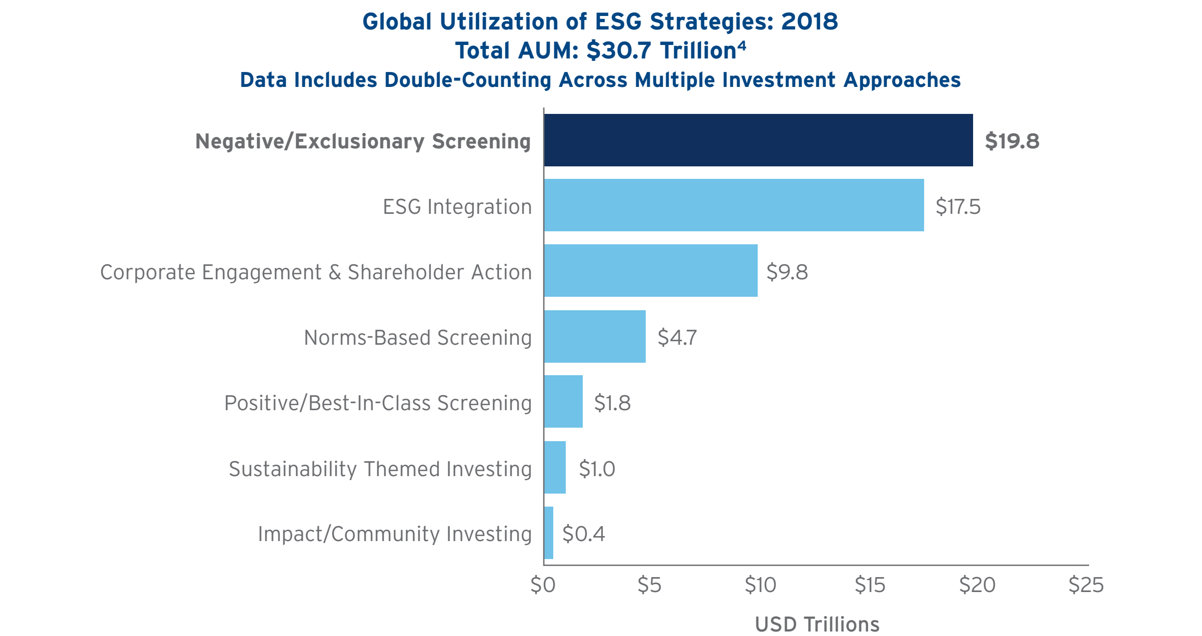
There are several issues with these approaches. They do not tie the allocation of investment dollars to specific behaviors that the investment manager is looking to highlight, and thus the effectiveness of these investments to incentivize actual change in corporate behavior is uncertain. The data approach used to "score" companies is murky and many survey participants questioned its usefulness. The way in which investment managers incorporate ESG into their organizations is also highly divergent, and in some models, there are other groups beyond the investment teams focused on ESG and shaping firm policy on how ESG gets reflected in portfolios, potentially undermining either the financial return or the ESG signal.

Strategies that engage companies more directly – stewardship and impact funds – may be more effective in highlighting desired ESG behaviors and soliciting behavioral change, but the measures used to evaluate their success often focus on actions taken as opposed to outcomes achieved. Moreover, of the approaches in use today, these strategies currently attract the smallest amounts of AUM.

Negative Screening Dominates Early Investment Efforts

The approach to ESG investing that currently draws the widest participation is negative screening, a technique being applied to $19.8 trillion or 60% of the $30.7 trillion of ESG-aligned AUM in 2018 as listed by GSIA. This pool of assets has grown by nearly a third between 2016 and 2018.[1] Its dominance can be seen in Chart 2.1.

Chart 2.1: ESG Investing Approaches: Negative Screening



Source: "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

1 "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

Negative screening centers on the exclusion of individual companies or entire industry sectors from a fund's investible universe, based on the category's perceived creation of an undesirable environmental, social, or governance outcome. Traditionally, these sectors have included areas such as fossil fuels, tobacco, and arms manufacturing. Negative screening approaches reflect ESG's roots as described in Section I and represent an evolution of the SRI methodology. It marks the easiest and least quantitative approach to aligning a portfolio.

However, despite its widespread adoption, survey participants noted that negative screening is the most simplistic, and potentially least effective way for investors to signal to companies what behaviors they would like to see change. By withholding funds altogether and opting to not be a shareholder, investors are giving up the opportunity to engage the company on their goals.

Moreover, they noted that the predominance of this strategy has often tainted the wider ESG dialog. Many of the companies being excluded from a portfolio may have generated significant risk-adjusted returns for investors. This has resulted in an ongoing perception issue for ESG investing that it is about "doing good" rather than "doing right" in terms of fulfilling the fiduciary duty to pursue the best possible financial return.

To reduce perceptions that these strategies simply address headline risk and that they can negatively impact portfolio returns, attempts to introduce more quantitative rigor to the approaches are emerging. These include creating more sophisticated exclusionary screens by isolating company exposures around specific revenue streams, linked to discrete activities to understand how their behavior impacts the company's overall operations. Investors report using analytics and screens provided by MSCI, RepRisk, or other third-party providers to set different thresholds around the permutations of impact-exposure combinations. More sophisticated screening can also facilitate a cross-sector view of company exposures by, for example, analyzing how participation in a certain supply chain exposes a company to an undesirable theme.[2]

While increased analysis may provide more justification and precision to negative screening strategies, it cannot redress issues about how such exclusions can limit the effectiveness of a portfolio. Increasing awareness about the limitations of the negative screening methodology is driving investment managers to use data in more focused ways within an evolving evaluation framework, and approach ESG assessment more scientifically.

"More than 50% of the economy is based on carbon so it is not practical to say you are going to avoid carbon." — APAC Asset Manager $500 billion - $1 trillion AUM

"I'm a little skeptical. Everyone has been marketing it and there is also some concern of regulating it. I'm still convinced that it is a key pillar, but the way it is being done is a concern." — Global Asset Manager >$1 trillion AUM

"The biggest problem with ESG is the greenwashing. It's like going to church on Sunday, getting your conscious cleared, then committing crimes on Monday to Friday." — Global Asset Manager >$1 trillion AUM

Emergence of ESG "Scoring" Provides New Investment Input

Rather than simply choosing to forego certain investments, other ESG investing techniques attempt to quantify a company's ESG profile and create a relative ranking of companies. ESG scoring approaches have emerged to help guide the integration of these factors into the broader science of financial analysis.

One immediate benefit of this shift in approach is that it enables managers to invest in high performing companies within sectors that may have been historically shunned by the ESG community, but that were not expressly prohibited. Survey participants cited sectors like energy, mining, and timber as examples.

The path to having ESG data inputs is not straightforward, however. Survey participants raised many concerns about existing data providers.

Originally company-specific ESG data was sparse. Data providers relied almost exclusively on corporations to self-report on their activities and objectives. Such inputs were usually extracted from firms' annual voluntary corporate social responsibility reports and then used to measure various E, S, and G considerations. This methodology tended to favor larger firms that could afford to hire resources to understand the language and focus areas influencing their ESG perception and to use these criteria to skillfully communicate their messaging.

2 "Demystifying Negative Screens: The full implications of ESG Exclusions", Schroders, December 2017, https://www.schroders.com/getfunddocument/?oid=1.9.2890163

Data providers extracting the inputs and translating them to ESG scores have also been hesitant to disclose their exact methodologies, considering it proprietary information. Many survey participants expressed concerns that data providers may rely on a mechanical "check the box" approach to extracting numbers and language from a company report. They worried that data providers do not perform any independent assessments to test the veracity of the data nor hold the companies accountable to how well they fulfill their stated goals. Interviewees worried that the resultant scores may thus reflect the quality of the company's communication and messaging as much as the underlying reality of their actions and behaviors.

Traditionally, ESG data providers delivered an aggregate rating for a company that represents a combined assessment of all the individual E, S, and G considerations. Having a single blended score to rate a company may be appealing in its simplicity, but survey participants pointed out that distilling variables as disparate as carbon emissions, the number of women on the board, and the labor practices of partners across a company's supply chain into a single number makes little sense.

Chart 2.2 illustrates this process whereby the data vendor ingests the data that the company chooses to supply, and using their opaque proprietary methodology creates an E-, S-, and G-score that then gets combined into a blended "ESG" score which they then sell as part of the overall industry and sector rankings.

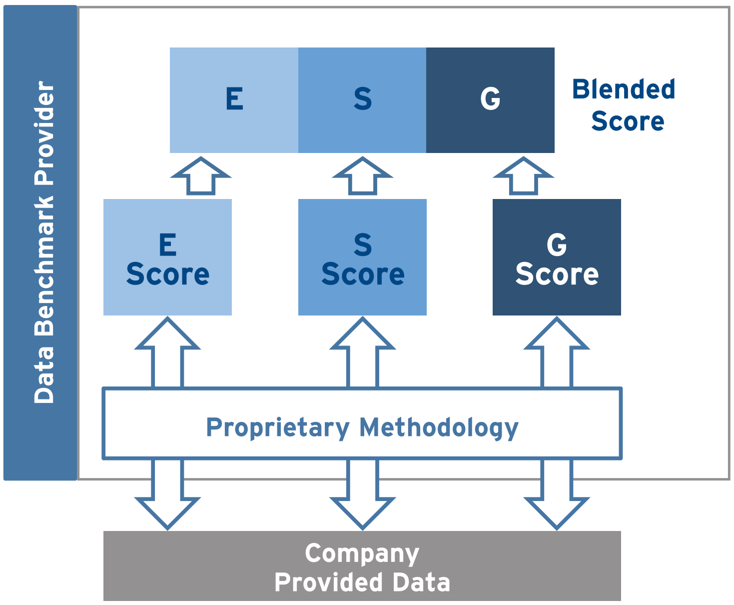
While a step away from exclusion based on company perception, this blended score approach offers managers little reliable insight. Survey participants noted that even apples to apples comparisons of like companies in like sectors may not be reliable due to the variability and incompleteness of the unverified data inputs and the fundamental incomparability of many of the issues. Despite these concerns however, utilization of these ESG scores underpin the majority of ESG integration approaches in use today.

"We're now integrating ESG scores into our investment processes. The problem is the low reliability of the ESG data providers." — APAC Asset Manager <$500 billion AUM

Integration of ESG Scores into Traditional Investment Analysis

Rather than just excluding companies and sectors to reduce risk, integration strategies look to enhance financial returns by also considering a company's ESG scoring and by choosing investments based on the combination of their financial and ESG variables. This expanded approach to analysis is seen helping to select companies with a better long-term risk profile.

Chart 2.2: Conceptual Model of Current ESG Scoring



Source: Citi Business Advisory Services

Overall, integration is the second most popular technique being utilized in ESG investing and this approach influences over half of the assets being deployed under the ESG umbrella. As shown in Chart 2.3, integration ranks just behind negative screening. Assets controlled by proponents of the integration approach grew strongly between 2016 and 2018, registering a +30% CAGR in the period.[3]

ESG Integration Layers New Variables into Factor-Driven Portfolio Construction

A range of investment strategies have emerged that use the ESG score as an input. There is considerable variation in the manner by which ESG elements are utilized to inform the weighting of the securities in a manager's investment portfolio. Yet, underlying the approach are some basic similarities. Nearly all of the portfolios apply consideration of ESG variables to a traditional capital-weighted universe and proceed to overweight or underweight companies based on a combination of their financial factors and their ESG score.

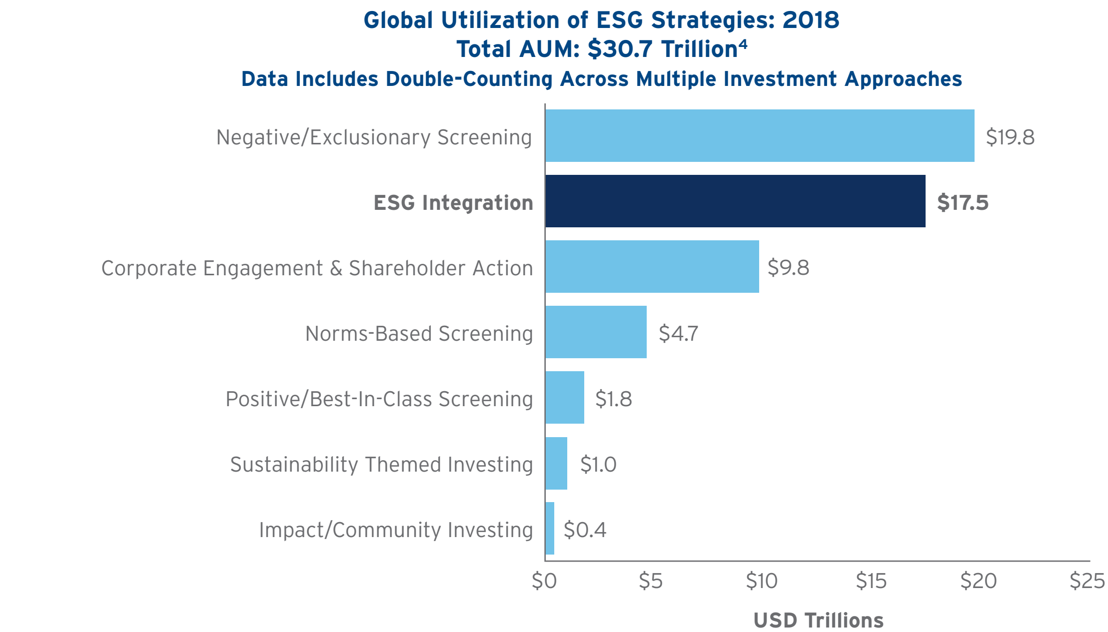
To understand the differences in integration approaches, we will step back for a moment and review how traditional financial analysis has evolved without any specific focus on ESG. This is a topic that we have covered at length in our past Industry Evolution surveys.

As noted in past reports, more and more portfolios are looking through the broad asset class allocation to focus on the financial factors that inform portfolio construction and management. Survey participants have spoken at length in our past reports about how they use a combination of such factors in their investment models, looking to accentuate certain types of exposures and control others. We have presented this concept via a construct we call the "factor cube".

There are three main types of financial variables considered as part of the factor cube.

- *Allocation factors* inform the make-up of the holdings in the portfolio and consider the risks associated with the specific geography, sector, or industry that the portfolio will target.
- *Risk factors* focus upon the various sensitivities that can influence asset prices including exposure to company risks (equity risk), concerns about the ability to pay (credit risk), and economic risks such as vulnerability to interest rate changes and inflationary pressures.
- *Style factors* come in two varieties. Fundamental style factors look at the inherent attributes of the investment such as value, growth, quality, duration, and low or high beta. Technical factors look at the market activity to identify risks such as momentum or volatility.[4]

Chart 2.3: ESG Investing Approaches: ESG Integration



Source: "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

3 "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

4 "New Approaches to Active Management & The Need for Manufacturing Flexibility in an Era of Asset Class & Factor Investing", 2017 Industry Evolution report, Citi Business Advisory Services, October 17, 2017, https://www.citivelocity.com/cv-content-web/geo/alerts/equity/EA59e6472b498ec73537495f000.pdf

Financial models tend to identify the cluster of these risks most relevant to the investment strategy and evaluate each security that makes up the portfolio through these lenses. The outcome of that analysis informs the investment team about which of the securities in the capital-weighted universe they may want to overweight and which may warrant an underweight allocation. The goal of the exercise is to outperform the relevant benchmark.

At times, the investment manager may choose one of these lenses and elevate it above the other factors to tilt a portfolio to provide a more exaggerated exposure to that particular variable. This is a common approach taken to design smart beta strategies.

Having level-set on how traditional financial analysis has evolved, it is now possible to illustrate the various approaches that investment managers are taking to integrate ESG scores.

Differentiating ESG Integration Approaches

Based on inputs offered by survey participants, we have been able to synthesize the ESG integration space down into three models, each of which weights the ESG score differently. As a result, the influence of the ESG scoring on the composition of the portfolio ranges from strategies that provide little weight to the ESG variable to more targeted approaches that isolate certain E, S, or G exposures.

Chart 2.4 lays out these three approaches to ESG integration:

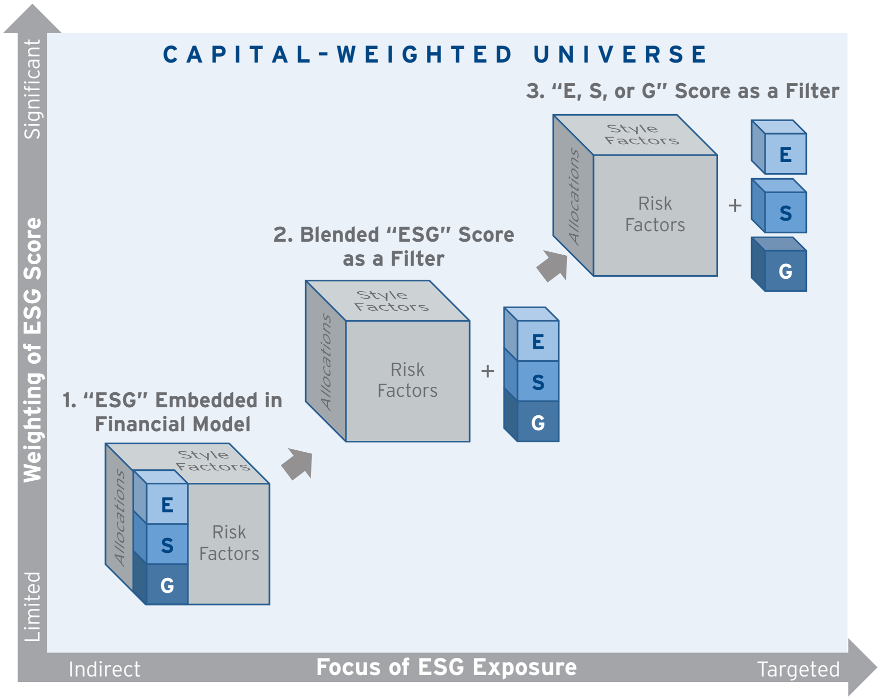
"ESG" Score as a Risk Factor: The first approach to ESG integration is embedding ESG in the existing financial model. Using the ESG score in this way as an additional *risk factor* is the most common integration method used by managers, and represents the vast majority of integration AUM. In this method, managers examine the ESG score alongside equity risk, credit risk, interest rate risk, and inflation risk. In one sense, approaching the analysis in this manner uses ESG scoring as an indicator of how much *regulatory* risk a company may face in the future.

As simply one risk among many that determine the security weighting, the overall impact of the ESG score on portfolio allocation may be quite muted in this approach, as other factors may end up having much more influence on how the company gets ranked in the financial model.

However, investment managers can still assert that they are considering the importance of the ESG score because it is a factor in their risk model. This method allows managers to reassure investors and manage the headline risks associated with ESG, but it is not a material driver of their overall investment strategy. As a result, there is, at best, only indirect delivery of ESG exposure.

"ESG" Score as a Filter: The second type of integration approach elevates the ESG score and considers it separately from the financial model, putting ESG considerations on par with financial considerations. Managers pursuing this approach often market their products as "ESG" tagged funds. These approaches typically use traditional financial modeling but then run the securities ranking that results from this analysis through a separate ESG filter.

Chart 2.4: Varying Approaches to ESG Integration



Source: Citi Business Advisory Services

In a sense, this can be thought of as tilting the portfolio and makes these products similar to those in the smart beta category. In this instance, the manager tilts to the portfolio to ESG strength or weakness similar to how they might tilt a portfolio to momentum.

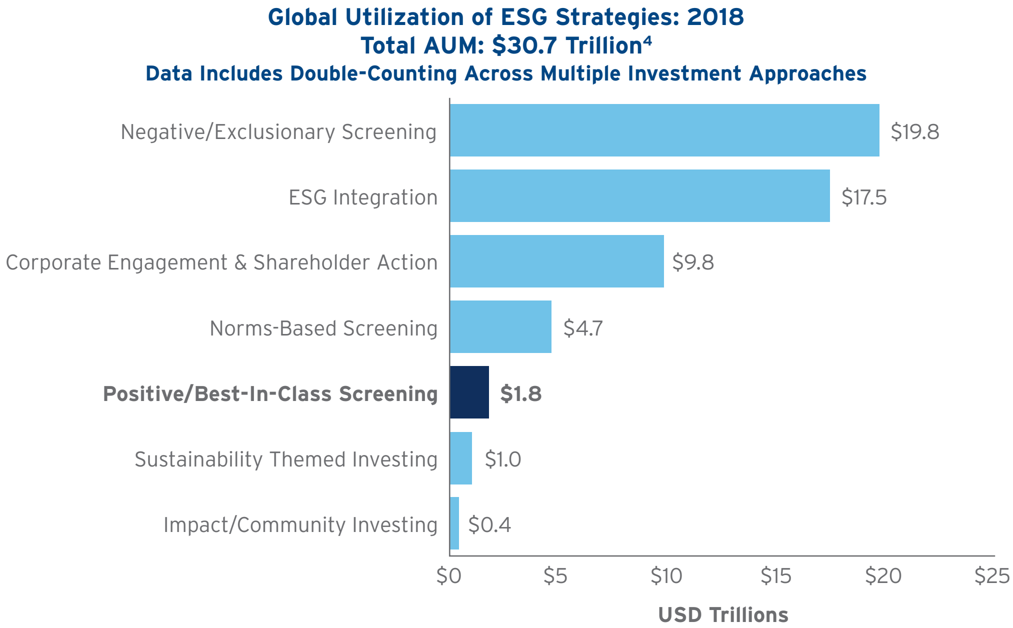
Since the ESG score is separated from the other factors, the weighting becomes a more important variable with much greater influence and the resultant portfolio provides a more targeted exposure to ESG than simply embedding ESG with other risk factors.

This second approach is still evolving, and there are number of variations emerging as managers look to refine how they use ESG as a filter.

- *Positive Screening:* Some strategies use the ESG score to identify "best in class" companies and overweight those where the ESG score is the highest, eliminating securities that might otherwise have simply been under-weighted. As Chart 2.5 shows, positive screening is small compared to the less sophisticated approach of negative screening AUM, but it is growing quickly. Between 2016 and 2018, strategies deploying this technique saw AUM increase by 125% to $1.8 trillion.[5]
- *ESG Momentum:* Another class of strategies track changes in the ESG score for companies over time and isolate those that demonstrate the most improvement. These strategies often supplement the blended ESG score from recognized data providers, with additional data sources from a growing set of specialty data providers that are leveraging the AI toolkit and alternative data sources to identify "pre-financial" datasets. These are inputs drawn from outside information able to provide insights on a company ahead of official, typically annual, company sustainability reports. For example, TrueValue Labs has created a climate momentum signal to identify companies that are lowering their greenhouse gas emissions.[6]

E, S, or G Score as a Filter: While using the ESG score as a filter provides more ESG exposure for the portfolio than simply using ESG as a risk factor, the blended score is still a relatively blunt means of measuring ESG exposure. In recognition of this concern, there are a growing set of strategies emerging that separate out either Environmental, Social, or Governance scores to create a more targeted portfolio tilt.

Chart 2.5: ESG Investing Approaches: Best-In-Class/Positive Screening



Source: "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

5 "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

6 "Climate Momentum: Truvalue Labs' Greenhouse Gas Emissions Signal and Decarbonization Rates", TrueValue Labs, 2020, https://insights.truvaluelabs.com/white-paper/climate-momentum

Using the most widely cited data providers for this exercise is a challenge. The number of securities for which data providers separate out the components of their blended score into discrete E, S, and G scores is limited, and due to the lack of off-the-shelf third party options, many managers pursuing this approach are forced to supplement information from official data providers with more bespoke data inputs to derive their own proprietary E, S, or G filters. This creates issues similar to what is seen in the smart beta space where a product may be tagged as delivering a specific tilt, but the definition of how the investment manager defines that tilt may be vague. Two funds delivering "G" exposure may thus have completely different criteria they use to determine "G".

While this approach provides the most targeted ESG exposure in the integration category, it requires a more knowledgeable investor to be able to pinpoint the type of risk that they are looking to address. Depending on its areas of strength or weakness, a single company might be weighted differently depending on whether the lens used is E, S, or G. For example, a technology company may score well in the environmental filter, but could be underweighted in social focused funds due to a perceived lack of effort in combatting hate speech. By utilizing E, S, and G filters managers can target specific companies that align with their values or mitigate a specific risk.

Each of these strategies can be delivered in an actively managed, discretionary approach or systematically via a quantitative approach that measures and weights various financial and ESG inputs. While integration allows managers to measure and control their ESG exposures to some extent, there are still numerous questions about its effectiveness both in terms of providing meaningful views of a company and about the ability of capital allocated in this manner to influence desired ESG behaviors from corporations.

"When we look at a manager we see how they have integrated ESG into their process and if they have added it as a factor. It's about how ESG might enhance alpha. ESG factors are increasingly explaining the dispersion in performance." — Global Asset Manager >$1 trillion AUM

"ESG is just another part of investing—it's not bull market or bear market. ESG is a style or factor exposure that we all know exists, and there are ways to "buy that" directly. Products that are consistent and deliver upon the philosophy that they were supposed to will survive, and those that weren't sound in their structure will go away." — Global Asset Manager >$1 trillion AUM

"ESG becomes a non-topic because it's standard. The survivors will have fully integrated it into everything they do. It will become a standard expectation and deliverable. I made a statement to our product people that we will no longer launch a product in EMEA that doesn't have ESG fully embedded in it." — Global Asset Manager >$1 trillion AUM

Effectiveness of Integration Strategies to Influence ESG Behaviors is Uncertain

While ESG integration is the most commonly used technique after negative screening and, depending on the implementation chosen, can deliver best of breed companies or those showing the most improvement in their ESG posture, there are still some questions as to the effectiveness of the approach.

Interviewees highlighted three main areas of concerns: risks that investment managers can claim an ESG focus without significantly altering their existing investment approach; worries that the ESG score itself is not a useful measure and thus distorts any analysis based on this measure; and uncertainty about whether the integration methodology is effective as a tool that allows investors to signal to companies the behaviors that they believe to be most risky to long-term profitability. Many survey participants were concerned that funds utilizing integration methodologies are looking to simply *price* in the degree of ESG (or E, S, or G) risk that the company poses to its portfolio, not *manage* those risks.

Integration Can Blur into Greenwashing

The repositioning and re-labeling of traditional investment funds to visibly include ESG factors or filters in their investment process is in many instances seen as an attempt to satisfy asset owner demands. Asset owners have committed themselves to elevating ESG in the formulation of their portfolio and they are thus looking for managers to incorporate ESG concerns into their analysis. For many firms, "incorporate" is the over-arching objective.

As firms race to offer ESG products, some are rebranding existing funds to market themselves as ESG-aligned without substantive modifications to the underlying security selection or screening process. This is leading to growing concerns about "greenwashing", prompting the European regulators to pursue new rules around disclosure.

To reiterate a point made in Section I—in 2019 alone, Morningstar identified more than 250 funds in Europe that had been repurposed from traditional to sustainable, representing an estimated 10% - 20% of the European sustainable fund universe.[7] This trend seems unlikely to peter out in the near future. Out of the $30.7 trillion AUM self-categorized as aligned to the GSIA principles, a bottom-up analysis shows that only about 10% (less than $3 trillion) actually position their products as dedicated ESG-focused funds. More than half of those dedicated ESG-focused funds are held by retail investors, an audience that may not be in a position to assess the validity of their claims. This is shown in Chart 2.6.

Even in these ESG-tagged strategies, the connection between the ESG score and the capital allocation is generally not observable. A large part of this limitation derives from the fact that using "an ESG score" at all is overly simplistic, both conceptually and in its implementation. As a result, firms are seldom able to infer the motivations behind the allocation.

ESG Scoring Approach Unable to Provide Clear Basis of Comparison

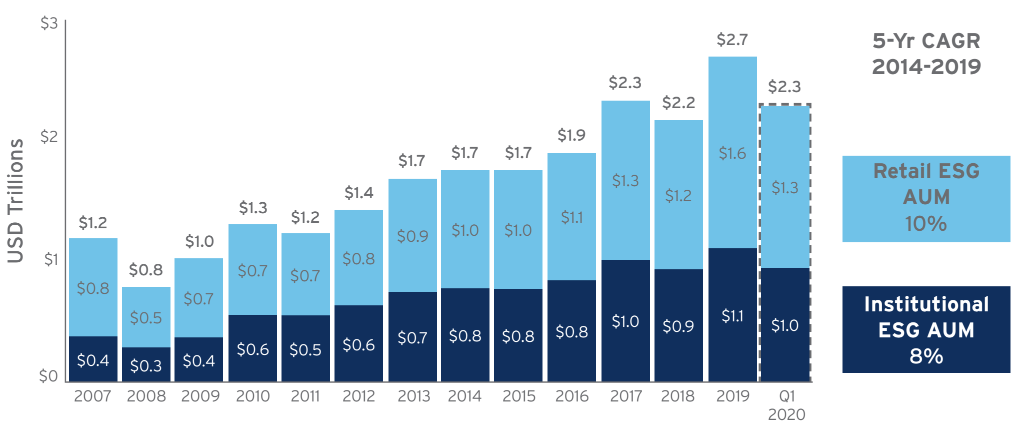
Survey participants noted two key issues with the way that ESG scoring is used in integration strategies today. The first relates to how ESG scores are used to compare companies in the same universe. Integration approaches use companies' ESG scores as the basis of comparisons in the same way as analysts use a credit rating to inform their security selections. Even the phrase "ESG rating" makes one think of a credit rating when in fact the two are very different.

Credit ratings work because they are answering a single, focused question: what is the risk that this company may not be able to pay its debts? There is one specific risk being measured. The company's financial debt obligations are a known quantity so the question can be addressed simply by modeling its financial ability to pay based on the amount of debt that it carries and the revenues it generates. Companies that are likely to be able to pay are rated higher than companies that are less likely to be able to pay. Using a credit rating to filter a bond universe is thus a clear indicator on the relative risk of companies in regard to their level of credit risk.

An ESG rating is fundamentally different. There are three different *categories* of risk embedded in the score and within each category are a myriad of individual risks—each of which may have repercussions on a company's ability to operate but none of which are described in measurable terms. The rating tells the investor nothing about the specific risks nor the size of the risks. This makes it impossible to actually model whether the company will be able to redress the risks and continue its business operations. In essence, the ESG rating today simply notes whether the company acknowledges that it is aware of its risks and whether or not they have a plan to address them. It offers no measurable way to assess that plan or its impacts.

The second issue with today's ESG scores are that there is not a sufficient amount of transparency to understand what the score is really based upon. There is too much ambiguity about the scoring methodology and not enough look-through to individual variables. Two companies could have exactly the same blended score, but their business operations could be creating risks in completely different areas. One may have governance challenges while the other has environmental issues. Moreover, even if two companies have identically poor E scores one may be due its carbon footprint while the other is pursuing questionable land use practices. Ratings as they are formulated today give no information to make this assessment.

Chart 2.6: ESG-Tagged Fund AUM



Source: Citi Business Advisory Services' analysis based on proprietary data subscriptions to eVestment and ISS Market Intelligence SimFund

7 "Surge in Funds Rebranding as Sustainable", Elizabeth Stuart, Morningstar, April 21, 2020, https://www.morningstar.co.uk/uk/news/201590/surge-in-funds-rebranding-as-sustainable.aspx

Moreover, the way that ESG scores are created give a false sense of equivalency. The ESG score of an oil company cannot be assessed against the ESG score of a technology company because of the nature of their business. Many key performance indicators that inform the materiality of ESG concerns are industry or context specific. Providers of ESG scoring may or may not be making industry-specific adjustments in their methodologies, but the lack of transparency makes it hard to determine.

This is why outside of the investment sphere, ESG proponents are moving towards analyzing ESG risks through frameworks like the SASB Materiality framework that identifies industry-specific key performance indicators (KPIs) to allow for meaningful comparisons of companies' sustainability risks across sectors and sub-sectors.[8]

While the scores that most investment teams are using to integrate ESG into their investment thesis are one issue, survey participants also noted that the way that investment managers position ESG within their organizational construct may also be a concern as some of these models may undermine the effectiveness of the ESG integration approach.

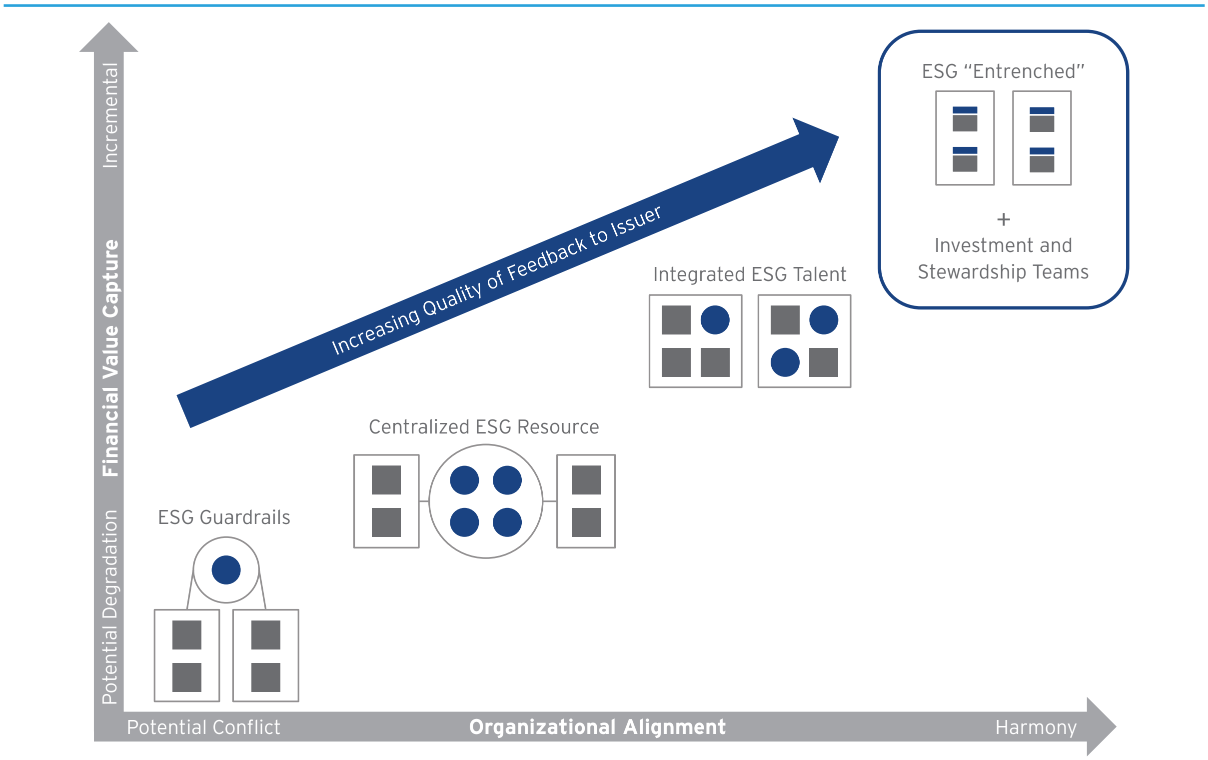
Issues with where ESG Responsibilities Sit in the Investment Management Organization

While many managers have either built ESG-focused teams from scratch or significantly increased the size of their existing units[9], very few organizations have pursued a model that integrates these resources into the teams running the integrated financial models, enabling those teams to own the end-to-end process of ESG analysis and security selection.

There are several models around how investment managers have chosen to position ESG within their organizations. These are highlighted in Chart 2.7.

- **"ESG Guardrails":** In this approach, the ESG team is set up as a separate unit charged with overseeing the organization's collective implementation of ESG investing. The team performs a policing role analogous to a risk management department, sitting separately from the investment teams and monitoring whether investment decisions follow the organization's agreed stance on ESG considerations and methods. Its decision power is expressed only through the ability to veto portfolio allocations. This approach creates a tendency to be cautious in the application of ESG findings and favors strategies that exclude certain securities with headline risk altogether. Even if investment teams are not specifically prohibited from investing in certain securities, having these units in place can often have the same effect as exclusion by inhibiting investment teams from choosing exposures to securities that might carry such headline risk.

Chart 2.7: How Asset Managers are Integrating ESG into their Investment Analysis



Source: Citi Business Advisory Services

8 "Why is Financial Materiality important?", Sustainability Accounting Standards Board, July 27, 2020, https://www.sasb.org/standards-overview/materiality-map/
9 "ESG investing sparks race in tech and hiring at asset managers", Attracta Mooney, Financial Times, August 10, 2019, https://on.ft.com/3bYkYsK

- **"Centralized ESG Resources":** Other organizations have established ESG units as centers of excellence that offer a centralized resource to serve the entire investment organization, across asset classes and sectors. Modeled after the approach many organizations have utilized to embed big data and new AI analytical capabilities within the investment organization, such a group contributes data, themes, analyses, and ESG insights and viewpoints to the firm's broad set of investment teams. This approach works well for organizations looking to build a passive product set that would create a rules-based approach to product formulation, but the model may be less effective for more discretionary investment portfolios since such units have no direct pathway to influencing the inclusion of their views. They are often viewed as simply another input alongside many others, and they have no direct power, either negative (via a veto) or positive, over the final capital allocation.

- **"Integrating ESG Expertise":** Just as the centralized big data resource model evolved into a hub and spoke model in many organizations, ESG units are following a similar trajectory. Rather than just having the central ESG team to act as a resource, for those sectors deemed most relevant, ESG expertise is being more directly established to support specific investment pods. For example, certain organizations may choose to hire environmental sustainability experts to work alongside investment staff in commodities and energy-focused investments. Enlisting sector experts able to add new insights to an investment area has been successful in beginning to meaningfully integrate more relevant ESG lenses into the investment and portfolio construction process.

- **"Entrenched ESG":** In this model, there is a merging of the ESG and the investment expertise with many firms also building investment and stewardship teams to enhance corporate engagement, as we shall explore in the next section. Those with a deep ESG understanding become an integral part of the investment team. ESG analysts develop independent investment theses based on ESG criteria and time series, (e.g., of a firm's carbon footprint over time). When placed into an investment team pursuing an integration approach, the ESG analyst's proposals are reviewed side by side with ideas put forth by other analysts. For ESG dedicated products, this approach would elevate ESG analysis to become a third investment approach on par with quantitative or fundamental investing. The ESG investment team would have their own data, drivers, models, and perspectives. Given the trajectory of ESG that we lay out in Sections IV and V, having these ESG analysts and embedding them throughout the investment organization may become the preferred approach in coming years. As such, demand for this type of analytic skillset may increase sharply.

While the latter two organizational models may achieve a greater degree of internal alignment and contribute to greater value generation, there is a groundswell of opinion that shareholder activism and engagement are also needed to affect meaningful ESG change and allow investment managers to move beyond addressing the headline risks.

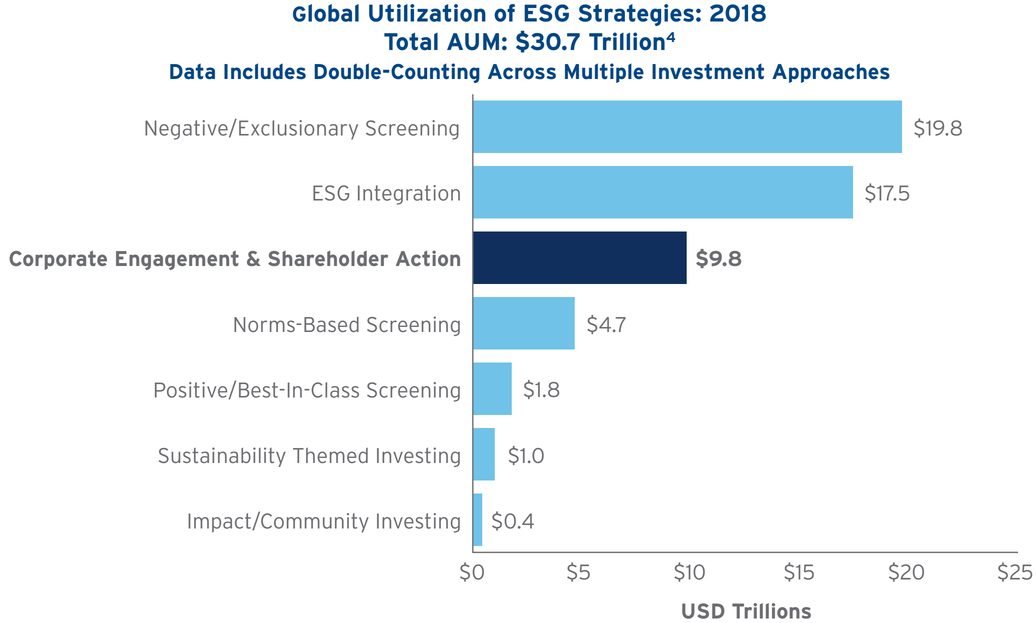
"There is an element of ESG that allows the mid-tier and bigger firms to comprehensively integrate it as there is more infrastructure/technology needed." — NAM Asset Manager <$500 billion AUM

"We're also leveraging our equity analysis in the ESG work—there's a large, complex data science effort behind it. The ESG scoring system that would come out of that would be very difficult to replicate elsewhere." — Global Asset Manager >$1 trillion AUM

Stewardship and Shareholder Engagement Influence ESG Behavior More Directly

Beyond negative screening and integration, there are other ESG-focused investing techniques that engage companies more directly. The first of these that we will examine is stewardship and shareholder engagement. In this approach, investment managers use the ownership rights associated with their equity holdings to table and vote on shareholder resolutions designed to encourage companies to recognize and address ESG risks in their business operations. Proponents of this approach account for a limited slice of AUM compared to negative screening and integration approaches, as illustrated in Chart 2.8.

Chart 2.8: ESG Investing Approaches: Corporate Engagement



Source: "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

Stewardship requires a significant depth of analysis, understanding and ongoing engagement with the target company, and as asset owners demand more from both their active and passive managers, asset managers are rapidly growing the teams and dedicating resources to support these engagement efforts. For example, the number of people on stewardship teams across the 31 largest investment managers globally *doubled* in just three years (between 2017 and 2020).[10] Further, while stewardship has been a focus for asset managers with extensive equity holdings, fixed income managers are also beginning to recognize they have the ability to influence company boards and are now starting to dedicate resources to this type of engagement.

How these stewardship resources are positioned in the organization can exacerbate the issues around the integration of ESG insights into investment portfolios discussed in the prior section. In most cases, stewardship units are being set up to manage the *firm's* corporate engagement and are facing off with the management of companies where the firm in aggregate owns a significant exposure to those companies. Without proper communication and coordination, this creates a risk wherein the stewardship team is pushing one agenda with the company at the same time that one or more investment teams may be putting on trades in their portfolios that are based on investment theses that would conflict with that larger engagement strategy.

In other instances, individual investment teams are engaging companies held in their portfolio directly to push for specific types of behavioral changes. These requests may diverge from those being pushed at a firm-wide level and create inconsistent messaging to portfolio companies. If communications coming from multiple parts of the same investment management organization appear uncoordinated and at odds, the portfolio company may choose to hold off on making meaningful change, citing the investment manager's lack of agreement as a signal that there is no clear mandate to address certain areas of concern.

For many investment managers, the procedural hierarchy and relationship between these stewardship units and the investment teams are seen as vague or defined more by politics than efficiency, and few organizations have designed processes to ensure clear lines of communication and appropriate responsibility. As firms come to consider the optimal organizational model to support their ESG strategies and aspirations, survey participants expect that the quality of the linkages between the teams involved in investment and stewardship will become more important and that this will be an area that will require prioritization and collaboration to design effectively.

10 "Jobs Bonanza in Stewardship and Sustainable Investing Teams", Attracta Mooney, Financial Times, March 8, 2020, https://www.ft.com/content/2714da14-c12d-46b2-8ecf-9aba3f665fdf

Shareholder Resolutions' Shift to an ESG Focus: Beyond generalized corporate engagement, using the ownership of shares to suggest and vote on corporate resolutions is a more direct means of influencing behavior. Knowing which elements of E, S, or G are most important to the investor base is a critical element of effective stewardship as this will influence the types of resolutions being sought, and provide the baseline about how effective a steward the investment manager is being of the asset owners' funds. Chart 2.9 shows how different E, S, or G related topics have trended with regards to shareholder resolutions.

Two of the most striking features of this chart are that in just four years the level of overall shareholder support of diversity disclosure measures has increased from around 12% (in 2015) to 44% (in 2019) and that gender pay equity disclosure has gone from 7% to 26%. These increases reflect a clear shift in voting trends. Whereas traditional shareholder activism typically related to the financial interest of shareholders, and were often focused on unlocking value frozen in the corporate structure, the new active ownership model emerging around ESG issues relates to the interests of broader range of stakeholders, including employees, suppliers, and the wider community.

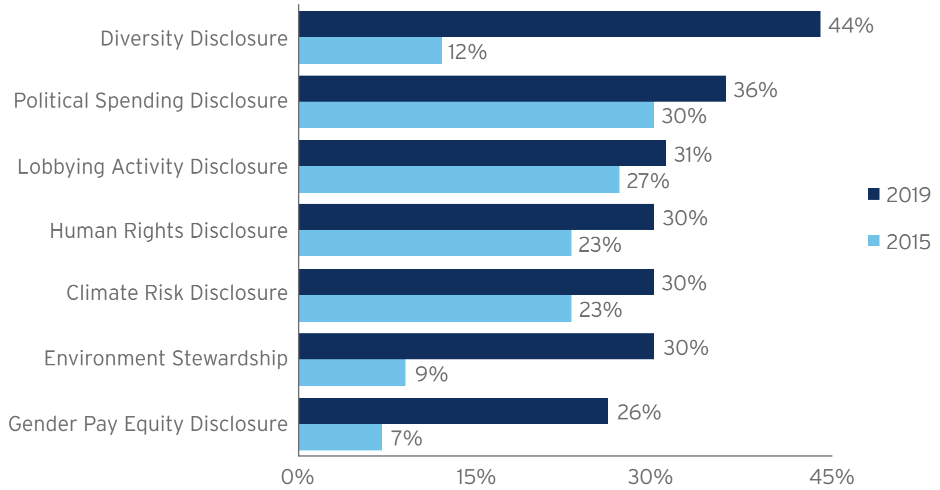
Shareholder resolutions around ESG are starting to create changes in corporate behavior and act as a lightning rod for these issues. For example, shareholder proposals have recently encouraged Starbucks' to both move away from single use plastics and provide unadjusted pay gap data. They have also helped encourage Verizon's commitment to increase its renewable energy goal from 2% to 50% and conduct a child risk assessment to help keep children safe from certain groups online.[11]

Passive funds are also being affected by this evolution of responsible ownership and engagement. Some of the industry's largest players have started to publicly acknowledge that the sizable ownership stakes might be extremely influential in changing issuer behavior. In Q1 2020 BlackRock announced that sustainability would be its new standard for investing and publicized a roadmap of engagement priorities that would drive its investment stewardship efforts—including thousands of engagements with over 1,700 companies in which they invest globally.[12]

Measuring the effectiveness of stewardship funds is also a point of concern across survey participants. While the examples of above point out specific improvements in company behavior tied to stewardship initiatives, these are always presented in an anecdotal manner. Many stewardship funds try to show their value by reporting on the number of shareholder resolutions they helped to shape and the number of votes that they took on behalf of their shareholders. While an interesting data point, these metrics provides little insight as to the effectiveness of those resolutions or votes. This has prompted many participants to push for a more activist approach.

Understanding Active Ownership vs. Activism: Stewardship and shareholder engagement is the practice of active ownership, rather than *activism*. Active ownership means working with the company's existing management and governance structures to encourage targeted incremental change aligning to their chosen ESG principles. In contrast, *activists* are typically looking to change the direction of management – typically by changing its composition – or the corporate or capital structure, in order to unlock financial value. It is episodic, focused on making an unlock event happen and for the financial benefit of other shareholders, rather than ongoing and more gradual and being focused on the sustained welfare of a wider group of stakeholders.

Chart 2.9: Increased Focus on ESG Considerations in Shareholder Resolutions 2015-2019



Source: "ImpactBase Snapshot", ImpactBase, April 2015, https://thegiin.org/assets/documents/pub/ImpactBaseSnapshot.pdf

11 "Proxy Preview 2020 Shows Jump in ESG Shareholder Proposals as SEC Prepares to Restrict Shareholder Rights", GlobeNewswire, March 19, 2020, https://www.globenewswire.com/news-release/2020/03/19/2003481/0/en/Proxy-Preview-2020-Shows-Jump-in-ESG-Shareholder-Proposals-as-SEC-Prepares-to-Restrict-Shareholder-Rights.html

12 "BlackRock Releases 2020 Stewardship Priorities for Engagement with Public Companies", BlackRock, March 18, 2020, https://www.blackrock.com/corporate/newsroom/press-releases/article/corporate-one/press-releases/stewardship-priorities

However there are signs of an interesting overlap emerging between the two approaches: ESG activism. In the same way that groups of shareholders with a shared specific financial goal can come together to bring more pressure to bear collectively than individually, this can also be focused on specific ESG outcomes and the deliberate triggering of events to ensure these goals.

ESG "activist" funds are typically focused on driving specific types of outcomes and are often carried out by specialists in specific sectors, though several traditional hedge fund activists are also now beginning to adopt a sustainability focus in their corporate engagement. For example, in 2018 Jana Partners aligned with the state pension fund CalSTRS to encourage Apple's board to address the potential negative effects on children of using its devices for extended periods. Similarly, Trian Partners engaged issuers like GE, DuPont, and Danone encouraging them to promote workplace diversity, adopt supplier codes of conduct, and reduce emissions and waste.[13] However, despite its growth and the publicity it attracts, stewardship and shareholder engagement strategies still represent a niche approach at present and account for only a small amount of the overall AUM in ESG funds.

Impact Funds Focused on Non-Financial Returns

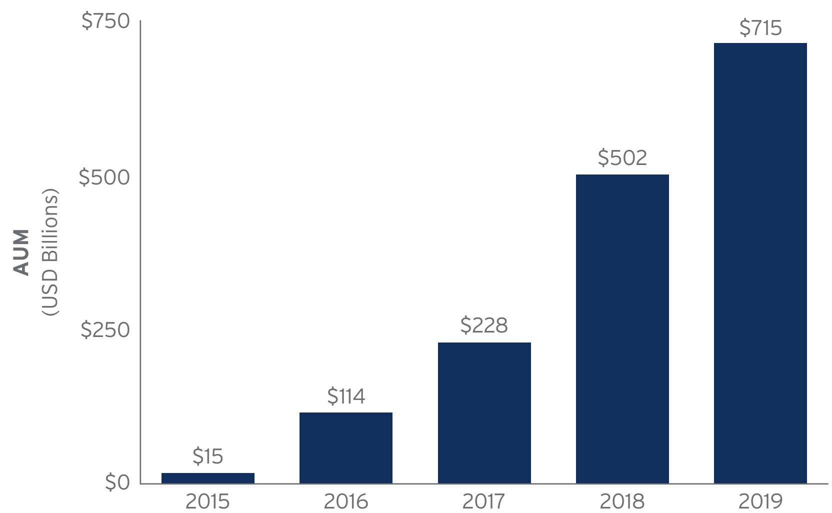
Truly dedicated impact funds remain a small part of the overall ESG market, though the idea of "impact" investing is often conflated with the larger sustainable investing movement. While impact investors do seek market rate financial returns, they are generally looking for a specific E, S, or G outcome as well and almost always require details of that outcome to be documented. The measurement of such outcomes often tie back directly to larger objectives like the United Nations Sustainable Development Goals (U.N. SDGs).

Impact funds are in the early stages of developing dedicated frameworks to measure "outputs and outcomes" alongside traditional financial return metrics. Dedicated impact investing funds have grown significantly in recent years, with the Global Impact Investors Network (GIIN) sizing the total market at approximately $715 billion in 2019, as shown in Chart 2.10.

Firms are also beginning to coalesce around a core group of Impact Measurement and Management frameworks. Survey participants noted that the UN SDGs, the GIIN's Iris reporting tools, and the Impact Management Project's five dimensions of impact convention are some of the most valuable frameworks through which to report the impact effects of their capital allocations.

Further, survey participants observed that some investors specifically seek out these funds because it is often not possible to generate the level of impact they are looking for through traditional equity allocations. Because of the level of reporting precision required, and ownership influence needed to drive these specific outcomes, a significant proportion of impact investing happens *outside* listed equities.

Chart 2.10: Impact Investing AUM



Source: The GIIN Global Annual Impact Investing Survey, www.thegiin.org, Publication Years 2016-2020, for 2015-2019 AUM estimates

13 "Hedge Fund Activists Pivot to ESG", Amy Whyte, Institutional Investor, January 23, 2020, https://www.institutionalinvestor.com/article/b1k0ztq7n2wc6d/Hedge-Fund-Activists-Pivot-to-ESG

The extent of this may surprise some: a 2019 survey of impact investing managers found that only 21% used public equities in their impact strategies.[14] Of those that do, 89% will select issuers that have a positive societal impact through their goods and services (e.g., firms that have a mission to provide food or medical services to underserved communities).

Impact investing's influence may be widening. Investors across the larger universe of sustainably-aligned assets are looking to better understand the impact that their investments have on the climate, society, and other discrete objectives that often also tie to larger UN SDG themes. True impact investors remain a distinct market segment focused on being highly intentional with their capital and directing it toward outcomes that may not otherwise be achieved without their specific allocation.[15] However, many more investors are beginning to want their portfolios to reflect some of impact investing's known characteristics such as providing dedicated reporting on E, S, or G-related outcomes tied to their portfolio.

Today's wide range of investment strategies employed around ESG have still largely been focused on managing the headline risk associated with holding particular investments. But in 2020, the narrowness of this focus was rapidly exposed by the COVID-19 pandemic. This forced recognition that current ESG investment approaches may not adequately address a much wider set of systemic risks and that the shortfalls of existing strategies may require a wholesale re-design of how ESG investing is done. Survey participants made a compelling case over the course of our interviews as to why this may occur. Indeed, the industry may look back on the COVID-19 crisis as a tipping point in ESG adoption and strategy.

"I think funds that are focusing on impact investing have a direct appeal to clients for issues that they want to help with. We have a low carbon bond fund which has gathered assets because it has delivered in terms of performance and not because it is a low carbon fund." — APAC Asset Manager $500 billion - $1 trillion AUM

"This industry was a poor steward of capital. ESG is a problem solver in some sense." — Global Asset Manager >$1 trillion AUM

"We're not moving to activist management, but active ownership and engaging on behalf of the fund in a very explicit way with companies. It goes beyond broad ESG, and incorporates their SDG goals, and changes the ways issuers report back." — EMEA Asset Manager <$500 billion AUM

14 "2020 Annual Impact Investor Survey", Hannah Dithrich, Dean Hand, Noshin Nova, and Sophia Sunderji, Global Impact Investing Network, June 11, 2020, https://thegiin.org/research/publication/impinv-survey-2020

15 "Investors look to understand impact beyond impact investing", Zoe Whitton, Citi Research, August 25, 2020, https://www.citivelocity.com/rendition/eppublic/documentService/dXNlcl9pZD1QdzRERjg2aWFuVSZlbWFpbF9zZW5kX2lkPTIxMDcxNjM1OTk/cGFyZW50X2RvY19pZD1TTC0xNzUyMzQyJmRvY19pZD0xMDE5ODgwJnBsYXRmb3JtPTY5JnZlbmRvcj1DaXRpIFZlbG9jaXR5#/

Section III: COVID-19 Intensifies Focus on Effectiveness of Capital Allocation to Mitigate Pre-Financial Risks

The COVID-19 pandemic has brought with it a new awareness about the breadth and variety of risks that can influence asset values. The speed, extent, and origin of the risk from the "S" set of concerns rather than "E", where climate change has been the most widely discussed ESG focus in recent years, has created a whole new dialog and sense of urgency around systemic risks.

Corporate access to capital, the relative cost of such capital, and transition plans on how companies will deploy funds to enhance their sustainability profile are already impacting banking relationships in key sectors as lenders look to reduce such risks to their portfolios. COVID-19 experiences are expanding such considerations and more focus on how societal risks might affect capital decisions is anticipated.

Asset owners are re-examining their approach to managing ESG risks in their portfolios as well. Recent experience has shown that systemic events result in cascading effects that existing risk models are not well-suited to either identify or address. Survey participants expressed a growing awareness that non-financial risks may upend portfolios at any time, not only because of the interconnectedness of the global economy and the vulnerabilities this creates during systemic risk events, but also because of the ability of digital engagement channels to amplify the voices of stakeholders and impact a company's social license to operate based on how the firm responds to shifting values and mores.

The view that pre-financial risks linked to ESG are primarily a threat to long-term asset valuations is changing quickly. Asset owners are beginning to expand their definition of responsible asset ownership to better manage and mitigate not just financial risks in their portfolios, but pre-financial risks as well before they can cause financial impact.

In turn, this is driving a re-evaluation about the efficacy of current approaches to ESG investing. For many asset owners, there is a growing awareness that investment products to date offer an ability to simply manage the *headline risk* around ESG. How ESG factors are considered in the investment process and the ways in which these concerns are expressed in investment portfolios may not provide a clear enough signal to companies about behaviors that concern investors. Nor does the current way in which investor capital is deployed within portfolios provide the right incentives for companies to change such behaviors and allow for asset owners to measure the tangible reduction of risks that such behavioral changes may create for their portfolios.

These realizations are expected to push asset owners to seek enhancements to the investment process so that investment dollars can be targeted in a manner that highlights to companies where they need to amend their business practices in order to mitigate pre-financial risks before they can severely impact portfolio value.

COVID-19 Highlights Disruptive Potential of Systemic Risks

Survey participants widely noted that the COVID-19 crisis highlighted the interconnectedness of supply chains and high degree of interdependence in modern economies. The vulnerability of companies to a systemic risk event originating outside the financial economy became painfully clear almost overnight and many were blindsided by the speed and scale of the change in the outlook for firms, sectors, and entire countries.

Whereas climate change is a systemic risk that has long been expected to play out in slow motion over many years, the current pandemic swept across the world in real time and infected the entire global economy in a matter of weeks. This brought immediate and stark attention to a different type of systemic risk encapsulated under the United Nations' Sustainable Development Goal 3 (SDG3) – health and well-being – a topic that had not been on many people's radar with goals targeting an improvement date of 2030.[1]

Rather than speculating on how a systemic risk that could unfold over the next 10-20 years might affect various sectors and geographies, as has been the case with climate change, the world experienced the upheaval of a global event in real-time, with recent events helping to illustrate how quickly the established order can be upended. The financial outlook for entire industries, sectors, and geographies suddenly changed.

One lesson that survey participants drew from this experience was that in these systemic events, the drivers of company valuation can move well-beyond the narrow set of financial factors typically used to assess companies and extend to encompass a much wider set of considerations as a result.

1 "Goal 3: Good health and well-being", United Nations Development Programme, https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-3-good-health-and-well-being.html

Financial Calculations Changed Abruptly in Response to COVID-19

The COVID-19 Crisis prompted a rapid re-assessment of the foundational elements that inform financial valuation.

- Rather than evaluating the relative competitiveness of a firm's products and services, investors and those engaged in the financial sector had to focus on more fundamental considerations such as a company's ability to manufacture its products or reach its buyers. Border closures and lockdowns temporarily froze or broke supply chains and rendered normal physical interaction and transactions impossible. The dependence of firms on the wider economic and social infrastructure, and their reliance on the physical movement of capital, goods, and materials became very clear.

- Additionally, the quality of a company's relationship with its set of stakeholders also came to the fore through the crisis. Today's digital and social media platforms enable a broad community of stakeholders to influence societal perceptions about a company and amplify their concerns in a manner that can threaten a company's societal license to operate—allowing the voices of those stakeholders to be widely heard, and make visible a company's treatment of its employees, suppliers, customers, and wider community. The treatment of employees has been a particular focus through the crisis and illustrates the increasing importance of the intersection between corporate values and social values. The pandemic has both highlighted and exacerbated societal inequalities, and the contentious issues simmering around them. Companies are increasingly unable to separate themselves from these societal concerns.

These developments exposed how powerful influences that originate outside the company's control can become in shaping the overall perception of their organization, its reputation, brand, and ultimately its valuation. There may be variable lags to the impact, and some impacts are lasting while others may prove transitory, but the risk of these negative effects to both companies and portfolios is becoming more apparent.

The Emergence of Systemic Capitalism

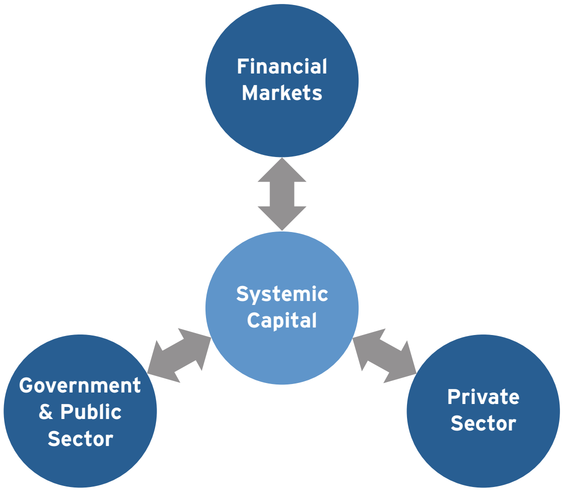
The view that this broad set of ESG risks must be more fully considered and accounted for in portfolios is also being encouraged by many national responses to the crisis. Some governments are taking the opportunity to attach "green strings" to their provision of aid to companies, directing the behavior of firms towards furthering a sustainable agenda, addressing externalities, and thereby contributing to an increase in an economy's long term systemic resilience.

For example, on 27 May the European Union unveiled a €750 billion ($826 billion) recovery proposal in response to the crisis and EU officials communicated that 25% of the stimulus package would be set aside for climate friendly measures such as building renovation, clean energy technologies, low carbon vehicles, and sustainable land use.[2] Similarly, the Swedish government's injection of capital into their flagship airline SAS came with conditions forcing them to quickly decrease their emissions in line with the Paris Agreement and reduce the environmental impact of the aviation industry.[3]

Other types of social requirements are also being linked to the extension of aid. In the U.S. CARES Act, the government allocated $500 billion for large business enterprises, but companies that accepted funds had to agree to forego stock buybacks for the term of the loan plus one year and provide full transparency and submit to oversight on how they utilized the capital. They additionally would receive fully refundable tax credits if they kept employees on the payroll or offered paid furlough.[4]

These packages mark the emergence of a more inclusive and sustainable model of "systemic capitalism" that repositions economic decisions in a framework that requires a much wider focus than simply pursuing business goals for profit maximization. As presented in Citi's Global Insights Report *"Systemic Capitalism: Building a Sustainable Future Post-COVID 19"*, this view of how capitalism is evolving reflects a recognition of the growing overlap and connections between the public, private, and financial sectors that have traditionally looked at their responsibilities as separate or largely independent. The concept is illustrated in Chart 3.1.

Chart 3.1: Systemic Capital as Connective Tissue



Source: Citi Business Advisory Services

2 "Europe Charts a Course for Sustainable Recovery from COVID-19", Joel Jaeger, World Resources Institute, June 2, 2020, https://www.wri.org/blog/2020/06/europe-charts-course-sustainable-recovery-covid-19

3 "SAS Awarded $500 Million In Aid With Environmental Strings Attached", Linnea Ahlgren, Simple Flying, June 15, 2020, https://simpleflying.com/sas-additional-aid-environmental-strings/

4 "What's Inside the Senate's $2 Trillion Coronavirus Aid Package?", Kensley Snell, NPR, March 25, 2020, https://www.npr.org/2020/03/26/821457551/whats-inside-the-senate-s-2-trillion-coronavirus-aid-package

This move away from exclusively corporate capitalism—where the Friedman doctrine prioritizes the social responsibility of businesses' maximizing—is being driven not only by governments and wider company stakeholders but also by the companies themselves. For example, in May 2020, 155 companies from 34 sectors, with a combined market capitalization of over $2.4 trillion, headquartered in 33 countries and representing over 5 million employees, signed a statement urging governments around the world to align socioeconomic recovery measures with climate science to build resilience against future shocks.[5]

> ***"There is going to be a new normal for reinventing capitalism. It is not what have you done for shareholders, but the view and responsibility for employees, suppliers, clients, etc. especially when it comes to "S" of ESG." — Global Asset Manager >$1 trillion AUM***

> ***"For years, the bulk of the focus of ESG has been on climate but there a lots of other factors. A health crisis that has spread across the world so quickly plays into a lot of the other ESG factors. We could see a large ESG demand increase." — Global Asset Manager >$1 trillion AUM***

> ***"We'll be thinking about the E- and S-side of things but even more so on the G-side of things as we emerge from the crisis and work out where the world is. There will be a lot of firms who will be assessed in terms of Governance success or failure." — Global Asset Manager >$1 trillion AUM***

> ***"I don't think anything is going to stop ESG. Not even a pandemic. The commercial momentum behind their solutions isn't going to slow down." — Global Asset Manager >$1 trillion AUM***

COVID-19 Crisis Intensifies Banks' Focus on ESG Risks in Corporate Capital Allocation Decisions

Major investment banks are also helping to drive the shift towards systemic capitalism as they increase their consideration of intangible risks, and find ways to incorporate a broader set of societal concerns into their financing and lending decisions—factors that had previously sat outside the corporate valuation framework. This is already beginning to affect access to capital in certain industries, and there is a clear expectation that this will expand to a wider set of companies, sectors, and geographies in the coming years.

The underlying ESG considerations are becoming a critical area of engagement between banking organizations and their corporate clients. Below we explore their growing impact on corporate valuation and capital.

Intangible Assets Increasingly Influence Banks' Evaluation of Companies

Historically company value was primarily tied to physical assets and accounting methodologies grew up around this paradigm, but this model has been put under increasing strain as economies have evolved from being manufacturing-led to services-based.

Originally intangible assets were a miscellaneous catch-all category for items not captured under tangible assets. In 2018, just 16% of the value of companies in the S&P 500 was accounted for by tangible assets, such as real estate and equipment, while intangibles were 84%. This is almost exactly the inverse of the situation 25 years prior.[6] As GDP moved from being dominated by goods to being dominated by services, an increasing proportion of companies' value resides in intangibles such as intellectual property, brand value, etc.

With this structural decline in companies' ratio of market value to book value, accounting practices are having to evolve to better account for non-physical assets. This is beginning to pave the way for better identification, quantification, and consideration of the risks associated with intangible assets, and ultimately more precise and dynamic company valuation.

ESG Considerations Impact the Valuation of Tangible and Intangible Assets

At the same time, as it becomes apparent that ESG considerations can, and increasingly do, directly influence the valuation of both tangible and intangible assets, the accounting profession is also working to define the key performance indicators that can help to inform and measure material ESG risks across industries and sectors.[7] SASB's development of standards and metrics are a clear step in this direction, particularly with regards to the valuation of intangible assets.[8]

5 "Over 150 global corporations urge world leaders for net-zero recovery from COVID-19", Sophie Grant, Matthew Hunter, and Sarah Savage, Science Based Targets, May 19, 2020, https://sciencebasedtargets.org/2020/05/18/uniting-business-and-governments-to-recover-better/

6 "$21 trillion in U.S. intangible assets is 84% of S&P 500 value – IP rights and reputation included", Bruce Berman, IP CloseUp, June 4, 2019, https://ipcloseup.com/2019/06/04/21-trillion-in-u-s-intangible-asset-value-is-84-of-sp-500-value-ip-rights-and-reputation-included/

7 "Why is Financial Materiality important?", Sustainability Accounting Standards Board, https://www.sasb.org/standards-overview/materiality-map/

8 "Investors & SASB", Sustainability Accounting Standards Board, https://www.sasb.org/investor-use/

Progress in this area is being closely watched, particularly as the COVID-19 crisis illustrates that the ESG risks faced by companies, industries, and even governments are not always slow-acting or exclusively long term in nature. This realization that ESG considerations can be a key factor in the valuation of a company, sector, or industry is often referred to by bankers as "materiality" and encompasses the idea that non-financial activities can have a direct impact on a firm's financial performance.

Such impact is already being seen in corporate financing decisions from the valuation of the company's assets and liabilities, to its ability to generate revenue, to its cost and availability of capital.[9]

ESG Risks Impact Firms' Access to Capital

One of the key mechanisms by which company valuation is affected by ESG is capital provision. Corporate access to capital, via direct lending or equity and debt financing, is being impacted as banks reconsider the materiality of E, S, and G risks for specific sectors. This is most evident in industries related to climate change, guns, and marijuana.

One example of this trend can be seen in a recent report from S&P Global Ratings that suggests that access to capital may become more difficult for oil and gas companies who fail to meet environmental goals.[10] This may happen through banks dropping out of revolver and credit syndications as they look to reduce their direct and brand exposure to companies perceived as polluters; or as signatories to the UN's PRI visibly align their capital to the stated investing goals.

Another way this effect is felt is via poor sustainability performance narrowing the range of willing capital providers, constraining access to capital, and thereby pushing up its price through a reduction in its supply. Researchers at Harvard Business School and the London Business School, looking at 8 years of data across 49 countries, found a link between better sustainability performance and superior stakeholder engagement, and found that those firms which engaged their breadth of stakeholders more effectively were significantly more likely to have greater access to financing and fewer capital constraints.[11] They also found that companies with strong sustainability strategies were more transparent and better at communicating their ESG plans and performance, helping build trust and reducing the perception of risk.

Scrutiny Extending from the Companies to their Banks

Wider public scrutiny is also extending from the corporations to the banks that fund and support those organizations. Such transparency is in turn prompting banks to align themselves more closely with the values of the societies they operate within. For example, in the U.S., all the banks publicly known to be providing credit facilities and term loans to private prison companies CoreCivic and GEOGroup cut their ties over the course of 2019.[12] Similarly, many banks are declining to do business with civilian gun manufacturers.

This is adding to the pressure felt by those companies and in some cases is forcing them to restructure to avoid the perception of an unfavorable ESG rating in one part of the company infecting unrelated businesses in another. A clear example of this is American Outdoors which announced that it would separate its gun manufacturing business from the rest of its outdoor gear business, citing changes in the "economic, investing, and insurance markets".[13]

Emerging Relationship between Capital Costs and ESG Risk Perceptions

The issue may extend beyond simply access to capital for a firm since in many cases the *cost* of capital that they are able to access may go up based on their perceived political, regulatory, consumer, or societal risk. Banks are increasingly sensitive to any potential business practice that might affect the sustainability of a sectors' or company's revenues or operations. To address that concern, they may look to build in a higher risk premium and increase the cost of capital for both current operations and the financing of future production capacity and/or R&D.

Studies show that the cost of capital is higher for firms and industries with greater ESG risks.[14] For example, in a four-year study from the beginning of 2016, MSCI found that companies with high ESG scores tended to enjoy a lower cost of capital than companies with poor ESG scores, and that this result held in both developed and emerging markets. In the MSCI World Index the average cost of capital for the quintile with the highest ESG scores was 39bps lower than the bottom quintile, and as shown in Chart 3.2 below, the differential was even more pronounced in emerging markets. Moreover, the study showed that in developed markets companies with lower ESG scores experienced a reduction in their cost of capital *as their MSCI ESG rating improved*.[15]

9 "Materiality Matters: Targeting the ESG Issues that Impact Performance", Scott Bennett and Emily Steinbarth, Harvard Law School, May 10, 2018, https://corpgov.law.harvard.edu/2018/05/10/materiality-matters-targeting-the-esg-issues-that-impact-performance/

10 "S&P sees tight access to capital for energy companies not addressing ESG", Jodi Shafto, S&P Global, February 6, 2020, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/s-p-sees-tight-access-to-capital-for-energy-companies-not-addressing-esg-56962288

11 "Two Ways Sustainability Drives Access to Capital", Lauren Turner, Network for Business Sustainability, September 12, 2016, https://www.nbs.net/articles/two-ways-sustainability-drives-access-to-capital?rq=Two%20Ways%20Sustainability%20Drives%20Access%20to%20Capital

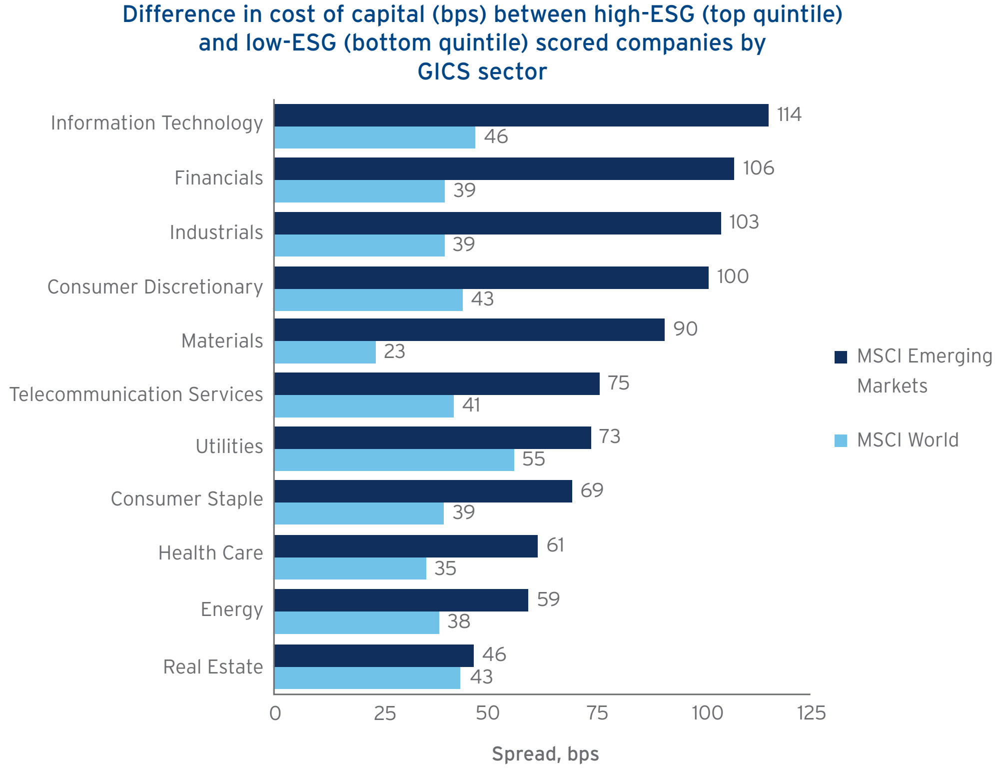
12 "Core Civic Prepared for Private Prison Ban", Matt Blois, Nashville Post, November 14, 2019, https://www.nashvillepost.com/business/area-stocks/article/21097574/corecivic-prepared-for-private-prison-ban

13 "American Outdoor to Spin Off Smith & Wesson Firearms Business", Reuters, November 14, 2019, https://www.reuters.com/article/us-american-outdoor-divestiture/american-outdoor-to-spin-off-smith-wesson-firearms-business-idUSKBN1XN2QT

14 "Capital costs rise on sustainability concerns", James Mills, Petroleum Economist, October 4, 2019, https://www.petroleum-economist.com/articles/corporate/finance/2019/capital-costs-rise-on-sustainability-concerns

15 "ESG and the cost of capital", Ashish Lodh, MSCI, February 25, 2020, https://www.msci.com/www/blog-posts/esg-and-the-cost-of-capital/01726513589

Chart 3.2: Cost of Capital Higher For Firms With Greater ESG Risk



Source: "ESG and the Cost of Capital", Ashish Lodh, MSCI, February 25, 2020, https://www.msci.com/www/blog-posts/esg-and-the-cost-of-capital/01726513589

The results from the MSCI study were also backed up a meta-study of 200 papers by ESG data and analytics provider Arabesque examining the inverse relationship between financial returns and sustainability[16]: 90% of the studies saw an inverse relationship between sustainability performance and the cost of capital[17]. Another important aspect of this link – stability of earnings – is examined in a 2015 white paper by Breckenridge Capital Advisors which found a pronounced difference in net income volatility between the hundred highest ESG rated companies in the S&P 500 and the broader S&P[18]. This was particularly stark during the financial crisis in 2008, which may point to a high ESG rating being seen as a proxy for quality or good management in general. In a similar vein, MSCI found that companies with the highest MSCI ESG ratings experienced three times fewer dramatic share price falls in the period from January 2007 to May 2017 than companies with the lowest ratings[19].

The mounting evidence for the existence of these relationships is giving rise to examples of *direct linkage* of financing to ESG performance. In the first three quarters of 2019, ESG-linked loans increased to $71.3 billion, more than double the comparable period in 2018[20]. Specific examples of direct ESG linkage include Austrian cellulose fiber maker Lenzing group that has issued a Schuldschein bond whose coupon steps up or down contingent on a change in its ESG rating; and utility company Iberdola that has signed a five year syndicated credit facility that links the credit margin to its targeted greenhouse gas emissions[21].

In a fixed-income ESG paper, Fidelity cites a study highlighting 106 cases between July 2015 and August 2017 where environmental and climate concerns resulted in a rating impact, and another study showing that companies with low ESG scores have a greater probability of a downgrade. Whether the relationship is coincident or causal, the existence of the linkage is directly playing into lending and financing decisions[22].

16 "From the Stockholder to the Stakeholder", Gordon L Clark, Andreas Feiner, and Michael Viehs, Arabesque Partners, March 2015, https://arabesque.com/research/From_the_stockholder_to_the_stakeholder_web.pdf
17 "Evaluating the Relationship Between ESG and Corporate Fixed Income", Riley Clubb, Yoshi Takahashi, and Pete Tiburzio, Breckinridge Capital Advisors, 2016, https://mitsloan.mit.edu/sites/default/files/2018-10/Breckinridge_Capital-Report-2016.pdf
18 Ibid
19 "2020 ESG trends to watch", Linda-Eling Lee, Ric Marshall, and Meggin Thwing-Eastman, MSCI, January 2020, https://www.msci.com/documents/10199/02f6473f-6fd8-aa8f-be72-443196478ec3
20 Ibid
21 Ibid
22 "The impact of ESG investing in corporate bonds", Claudio Ferrarese and Joe Hanmer, Fidelity International, July 2018, https://page.ws.fidelityinternational.com/rs/829-LMV-001/images/ESG%20White%20Paper%20FINAL.pdf

The United Nations PRI Initiative's analysis of reports directly relating to sustainability and fixed income also concluded that ESG factors can be correlated with credit quality, and that cost of capital is, on average, about 20% higher for firms with poor environmental performance relative to their peers. Impacts are not just linked to environmental concerns. Relative differences in the quality of employer/employee relations were found to explain as much as 42% of a firm's spread over U.S. treasuries[23].

Implications of Linkage between ESG Risks and Capital Costs

All of these data points underscore a key consideration– the markets seem to assign less risk to companies with better ESG credentials, and thus require less compensation for providing them with capital. This suggests that a company's adherence to desired ESG behaviors can be motivated by rational self-interest and that acting in accordance with ESG principles does not need to be motivated by a belief in the values underlying those principles.

As visible and active management of ESG risks becomes an increasingly key factor in access to capital and the terms on which that capital is accessed, company management teams are finding that they are being pressed on how capital will be utilized, especially in ESG sensitive sectors. In some areas the funding model which is emerging is one of targeted capital provision where capital is supplied for specific projects and comes with constraints on its use.

The need to preserve access to capital, and the potential competitive advantage that represents, is motivating some companies to actively develop and communicate a transition agenda, and to upgrade their assets and practices to signal their alignment with ESG principles.

Banks are developing advisory services to help companies formulate and manage such plans, broadening the scope and depth of their relationships. Their motivation to help clients directly address and manage material ESG risks also reflects their concern about protecting capital already provided.

Banks provided around $654 billion in financing to fossil fuel companies in 2018[24]. An analysis by the Financial Times' Lex team, cited by Citi's Alex Miller, concluded that meeting the terms of the UN's Paris Agreement to limit global warming to 2 degrees centigrade would wipe out about $360 billion from the value of the biggest 13 oil companies, well over one sixth of the enterprise value, and meeting a stricter 1.5 degree target would more than double that to nearly $890 billion[25].

In the face of such statistics, advising companies on ESG risks to help ensure they maintain an ability to repay loans, maintain covenants, and preserve the value of existing tangible and intangible assets is becoming a key part of the role of bankers.

"ESG companies aren't necessarily better than other companies but they are able to attract more capital than others." — EMEA Investor

"With all this change happening, there is a different tradeoff to be made. You get to redeploy capital in a way that might be forward-looking, and decide who you keep in business. The market has decided that heavy carbon-based fuels don't have a long-term story so cost of capital has risen." — Global Asset Manager >$1 trillion AUM

Evolving View of Responsible Asset Ownership Creates Pressure to Revise Risk Management Approach

While ESG has major implications for the shape and direction of banking, asset owners have a different, and arguably wider, set of responsibilities to fulfill. They see ESG-related risks to the assets held in their portfolios through a variant lens. Their understanding of what it takes to manage such risks is evolving and reshaping their view of responsible asset ownership

Asset Owners Seek to Better Understand and Manage Portfolio Risks

Survey participants widely noted that asset owners have been assessing how well their existing risk models understand and anticipate financial risks that may impact their portfolio. In addition, they have started to question their methodology for considering systemic risks, including those linked to ESG, and may need to revise that approach based on lessons learned during the recent COVID-19 crisis.

Today, asset owners interviewed for our surveys describe managing their portfolio risks at two levels— first by understanding how much of the value of the assets held in their portfolio might be impacted based on various market move scenarios (value-at-risk or VaR) and then how well diversified the exposures are in their portfolio to help insulate their portfolio returns from excessive volatility (factor risk budgeting).

23 "Corporate Bonds: Spotlight on ESG Risks", Principles for Responsible Investing, 2013, https://www.unpri.org/download?ac=35 and "Evaluating the Relationship Between ESG and Corporate Fixed Income", Riley Clubb, Yoshi Takahashi and Pete Tiburzio, Breckinridge Capital Advisors, 2016, https://mitsloan.mit.edu/sites/default/files/2018-10/Breckinridge_Capital-Report-2016.pdf

24 "Banks continue to pile on fossil-fuel finance", Shashank Pattekar, International Banker, January 15, 2020, https://internationalbanker.com/finance/banks-continue-to-pile-on-fossil-fuel-finance/

25 "Moral Money: Trouble for Toyota; Australia's missing carbon price", Richard Henderson, Billy Nauman, Gillian Tett, and Patrick Temple-West, Financial Times, February 5, 2020, https://www.ft.com/content/bbed799c-47a3-11ea-aeb3-955839e06441

As discussed at length in our Industry Evolution 2020 report, *"Real World Health and Economic Crises Rock the Investment Management Industry"*, the performance of VaR calculations have come under increased scrutiny in recent years as there has been a higher-than-expected occurrence of multi-sigma "black swan" events. These events that statistically should only be happening every few thousand years (at best) have been happening with a much higher frequency in practice.

Chart 3.3 depicts the daily returns for the S&P 500 from April 2007 through April 2020. In a normal distribution, a five standard deviation move should happen once in 1,744,278 observations,[26] or once in 6,921 years of trading day observations.[27] Though difficult to see, in this dataset alone, there are nine observations of greater-than-five standard deviation losses (-6.57%) and seven of greater-than-five standard deviation gains (+6.62%).[28]

Survey respondents noted that outcomes so out of line with statistical probability may show a foundational issue with the way that the industry constructs risk models. Most portfolios are built around the view that risk tends to fluctuate within +/- 1 standard deviation in about ~68% of modeling outcomes and within +/- 2 standard deviations in about ~95% of outcomes. Recent market activity indicates that tails may be more prevalent (fatter) than previously believed.

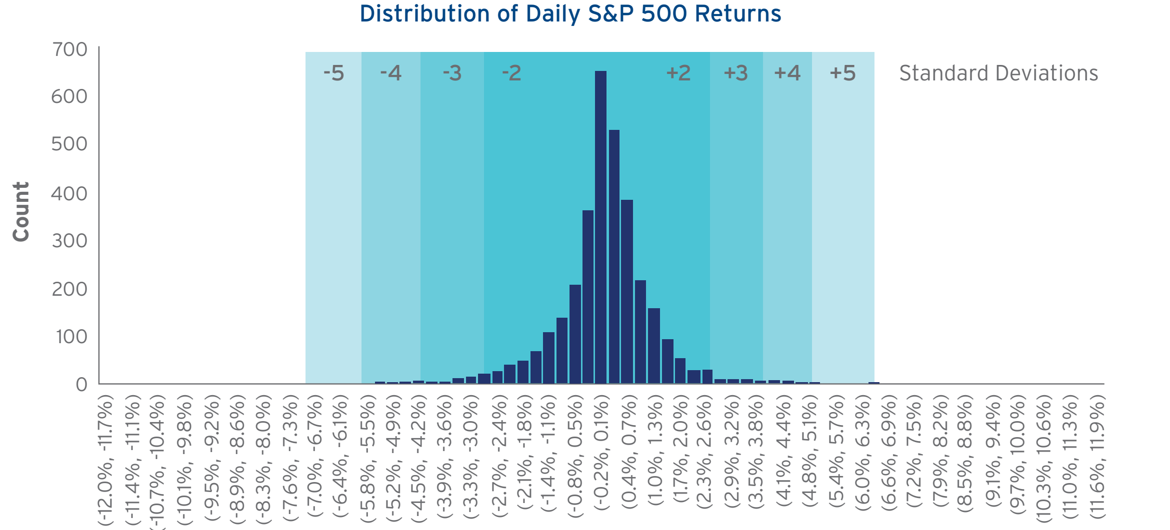
Interviewees suggested that part of the reason for this may lie in the way that the industry defines financial factors and uses those definitions to model non-financial risks. Asset owners divide up the different types of financial risk factors that they believe can impact their portfolio and budgets them in order to ensure adequate diversification. As discussed in Section II, portfolio risk budgets typically encompass allocation considerations (e.g., geography and sector), risk factors (e.g., interest rate sensitivity, equity risk, credit risk, inflation), and style exposures both fundamental (e.g., value, growth, duration) and technical (e.g., momentum, volatility).

In many ways, this process has become significantly more powerful in recent years. Survey participants point toward the emergence of new risk technologies that can crunch through the difficult modeling of these risk factors in a timeframe that allows the view of the portfolio risks to be actionable rather than backward looking.

An improved ability to model and act on risk exposures does not necessarily translate into an improved ability to anticipate how those risk factors may behave, however, particularly not in extreme stress situations. Survey participants spoke at length about how correlations moved to one for both risk and safe haven assets during the March 2020 sell-off.

Short-term events like the initial pandemic sell-off showed how risk models may miss certain types of market dislocations. Longer-term considerations too have proven difficult for risk models to digest. The prolonged period of Quantitative Easing and unprecedented levels of government intervention to support markets has been one such scenario widely discussed over the past decade. Challenges posed by real economy risks, particularly those linked to ESG, emerged during the recent COVID-19 crisis as another area of concern.

Chart 3.3: Measuring Risk and Tail Risk



Source: Citi Business Advisory Services' analysis based on data from "S&P 500 - 10 Year Daily Chart", MacroTrends.net, https://www.macrotrends.net/2488/sp500-10-year-daily-chart

26 Standard Deviation, Wikipedia, May 1, 2020, https://en.wikipedia.org/wiki/Standard_deviation
27 1,744,278 divided by an average of 252 trading days in a year.
28 Citi Business Advisory Services based on Macrotrends S&P 10-year Daily Chart, www.macrotrends.net

Concerns about How Existing Models Handle Pre-Financial Risks

Several survey participants discussed their views about how existing risk models are failing to adequately capture the real economy influences that can affect the valuations of financial assets, but that are not financial in nature. Many worried that the methodology for considering real economy risks may be contributing to this issue.

To incorporate the risk from pre-financial considerations in existing models, most investors attempt to break them down, or translate them into existing *financial* risk factors. For example, climate change is not looked at as a separate risk factor, but insofar as it is explicitly considered, it is looked at in terms of how it relates to credit risk, sector risk, geographic risk, etc. To use an analogy, one might say that this approach is good for understanding the trees in the forest, but fails to account for the density and expanse of the forest.

Interviewees noted that one of the learnings coming out of the pandemic is that this second-order approach works to compartmentalize risks in an unrealistic way. Using just a sector lens can illustrate this point. Since the pandemic is a communicable disease, it might reasonably be expected to impact healthcare and travel-related industries, but the concerns about falling commercial real estate prices in urban centers and the industries tied to those properties; the collapse in demand for agricultural goods due to restaurant closings and the networks of companies impacted by this situation; and the increase in demand for video-conferencing platforms and laptop computers as individuals shifted to work-from-home arrangements; and the subsequent benefit to firms associated with these services was harder to anticipate. No financial risk models would have captured these cascading effects.

What asset owners learned is that systemic risks create clusters of such cascading affects that in turn spur other clusters of cascading affects. Existing financial risk models are inadequate to derive an understanding of how a combination of these real economy risks may impact a portfolio, and the financial factors they track may be ill-suited to be used by asset owners to diversify their exposure to and hedge and manage such risks when they emerge. The idea that pre-financial risks can have overwhelming impacts on financial portfolios prompted many asset owners to discuss a growing need for a new risk management lens. Defining what that new risk lens might entail is working to expand the concept of responsible asset ownership.

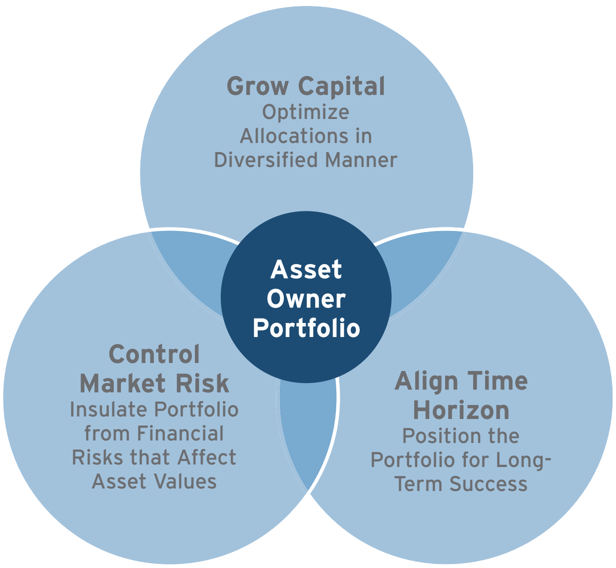
Evolving Concept of Responsible Asset Ownership

Based on our series of interviews over many cycles and the language that asset owners have used to describe their fiduciary duty, we have constructed a model that illustrates the prevalent view of responsible asset ownership as described to us by our survey participants.

This mission can be encapsulated by three core principles: 1) to grow the base of the capital entrusted to them over time and to achieve the optimal level of risk-adjusted returns through judicious asset allocation and diversification; 2) to protect the portfolio from excessive market risks and volatility in order to preserve its ability to generate returns and 3) to maintain an appropriate alignment between the holdings in the portfolio and its required investment horizon. This model is illustrated in Chart 3.4.

Conversations held as part of our 2020 surveys that occurred while the industry was in the thick of the March-April volatility began to surface a growing sentiment among asset owners that there are potentially new principles that may need to be added to this responsible asset ownership model.

Chart 3.4: Three Original Principles of Responsible Asset Ownership



Source: Citi Business Advisory Services

Manage Systemic Risks: Even before the crisis, efforts to understand portfolio values at risk due to climate change were underway. The U.N. Environment Programme Finance Initiative (UNEP FI) conducted a pilot with 20 institutional investors throughout 2018-2019. They tested a "Climate Value-at-Risk" (CVaR) model for listed equities, corporate debt, and real estate under several future scenarios. They considered both the physical and the transition risk of climate change across a range of temperature pathways. The study found the following:

- Investors face as much as 13.16% of risk from the required transition to a low-carbon economy (equivalent to an approximate portfolio value loss of $10.7 trillion for the largest 500 investment managers);
- "Green" profits in a 2°C world are significant – approximately $2.1 trillion;
- Low-carbon technology opportunities help offset risk; and
- Governments' delay in enacting climate policies that reduce greenhouse gas (GHG) emissions will come at a cost of $1.2 trillion.[29]

Just as efforts to get investors to incorporate a more forward looking model to measure and understand the impact of a systemic climate risk event were gaining speed, a systemic health risk came along and provided a real-time example of how quickly value can be destroyed, and an ongoing case study on what types of systemic risk factors become paramount in such circumstances. These are highlighted below:

- *Ability to ensure production:* The risks of not being able to access required materials or intermediate goods to be able to operate in an event that is disrupting normal trade movement was highlighted to a surprising degree during the COVID-19 crisis. An additional risk of companies being pressed into suspending their normal operations to change their focus and produce emergency goods to support government supply chains also emerged as a new type of concern.

- *Access to capital:* In the earlier stages of the crisis the normal flow of capital from banks was disrupted as institutions scrambled to build buffers against the prospect of potential defaults, to ensure their own business continuity, and enable them to be able to meet future and possibly urgent capital demands from their client companies. The increased role played by central banks and governments in direct response to the crisis helped alleviate some of these risks, but also introduced a new dimension of political risks to the flow and provision of capital.

- *Ability to distribute:* Restrictions imposed by governments on the movement of people, goods, and even capital, and direct intervention in the workings of certain sectors and businesses in order to protect the country and its citizens, radically limited the ability of many business – and even whole sectors - to operate. The speed, extent, and duration of these moves was driven by politics much more directly and to a far greater degree than many would have expected. The severity, breadth, and unpredictability of the economic impact of different government responses in different countries to the same systemic event made market access, production, and distribution even more problematic for international firms.

- *Access to infrastructure:* Much of the discussion around climate change impacts has focused on how key infrastructure may be incapacitated in climate-effected zones, but the COVID-19 Crisis highlighted new types of infrastructure concerns that may become more common in a systemic event. These include reduced utilization of public transportation due to health risks that limit the ability and willingness of workers to reach their job sites; unequal access to broadband and internet having an impact on diversity and social inequality; challenges around ensuring safe workplaces creating liability concerns (e.g., spacing requirements to meet social distancing, HEPA filters, elevator access, stairwells, plane seating). Each of these situations emerged as determinants about how rapidly and safely companies could begin to resume normal operations and had implications for what that resumption of business might entail and thus what the economic prospects for recovery might portend.

All of these factors underscore an emerging view from asset owners about how difficult it is to anticipate what aspects of daily life might shift dramatically in a systemic risk event and how those changes might have profound implications on the value of assets in their portfolio. Finding a way to manage systemic risks that may be pre-financial by nature but that affect the financial value of assets held in asset owner portfolios may thus be seen as a fourth dimension of responsible asset ownership. This, along with the fifth dimension, aligning to stakeholders, is illustrated in Chart 3.5.

Align to Stakeholders: The COVID-19 Crisis also cast a spotlight on how inter-connected the human eco-system that companies and governments operate within has become and how the "societal license" to operate is a growing influence on company and asset valuations. This trend is prompting asset owners to extend their view of stakeholder alignment and expand their concept of fiduciary responsibility. These considerations form another type of pre-financial risk that has the potential to impact the financial value of assets.

29 "Institutional Finance Update: Investors Decisions Impact Climate Change, and Climate Risks Impact their Portfolios", SDG Knowledge Hub, May 20, 2019, https://sdg.iisd.org/news/institutional-finance-update-investors-decisions-impact-climate-change-and-climate-risks-impact-their-portfolios/

Chart 3.5: Five Principles of Responsible Asset Ownership

Source: Citi Business Advisory Services

Friedman's views of capitalism, that emphasize the interests of corporate shareholders, have had an outsized influence on corporate governance and decision-making and have helped to fuel market rallies for many years, but the platform for those outside the shareholder community to transmit their views and relay their concerns has been transformed in that period due to the internet, social media, and a growing number of venues for digital engagement.

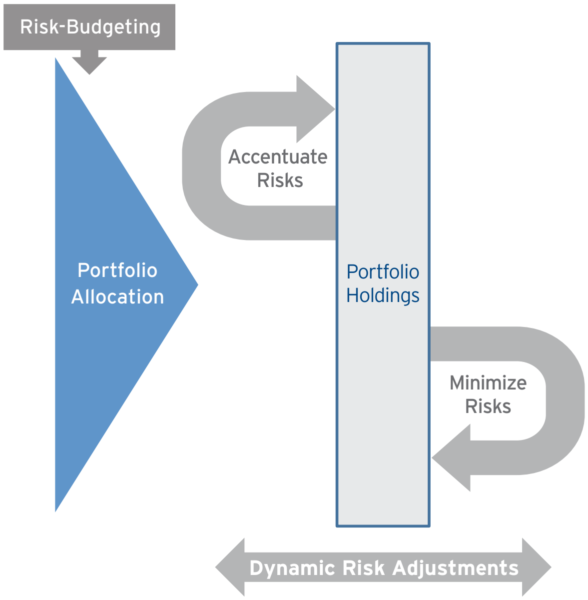
This accessibility is creating a new environment in which the implicit consent that gives a company its license to operate can be quickly eroded. A misalignment with their broader set of constituents can have a significant and immediate impact on a company's sales, brand, talent strategy, and overall financial outlook. Two groups in particular are beginning to have increased influence in this regard.

- *Consumer demands:* The power and assertiveness of the consumer has grown considerably, driven by a combination of technology and societal changes. Technology can be used to quickly create a much broader awareness of issues among consumers, and to organize boycotts and protests that can materially affect the economic prospects of a company and erode long-term brand value. The views of vocal consumers and sections of society are amplified by social and other digital media, and the perceptions and values represented by these groups are an increasingly important influence.

- *Worker welfare:* Similarly, worker welfare has become a key factor for firms to manage. As economies develop from being manufacturing-based to services-based, the importance of human capital increases due to the integral role that employees play in the creation and maintenance of intangible assets (e.g., intellectual property and brand, customer experience, innovation). Actions that put a company into conflict with employees' values risks putting them at a competitive disadvantage as morale and productivity declines. Ultimately skilled and mobile talent migrates to firms with a mission and working environment better aligned with their values, and potential new hires become wary about companies that have seen a significant flight of talent or that have been party to high profile employee complaints.

The growing influence of these constituencies is even influencing how shareholders engage. The lens through which they now evaluate their investment holdings is shifting to include a values-filter. Actions are being re-assessed and survey participants discussed growing pressures to operate in a more "socially-aware and responsive" manner. This is particularly true for institutional asset owners that are embracing the view that ensuring such alignment helps protect the value of assets in their portfolio.

Chart 3.6: Traditional Portfolio Construction & Management



Source: Citi Business Advisory Services

Management of Portfolio Risks Requires both Financial and Pre-Financial Considerations

As asset owners' improve their ability to define and understand the impact of pre-financial risks on the financial value of their assets, they are beginning to develop strategies to better manage those types of risks. This marks an evolution of dynamic risk management done today in asset owner portfolios.

Today, asset owners initially create a broad risk budget that allocates the types of exposures they want to maintain in their portfolio (policy portfolio) and then they dynamically manage their aggregated set of holdings to ensure that the guardrails around these risk categories are not breached. If an over-exposure to one type of risk factor emerges, asset owners will seek to minimize that risk, and if too many holdings begin to offset each other and erode a desired exposure, they will take steps to accentuate that risk and increase their exposure. These dynamic adjustments ensure that the policy portfolio remains in force. This process is illustrated in Chart 3.6.

As awareness and understanding of the pre-financial risks in their portfolios grows, asset owners are developing an expanding set of options to address these risks. Interviewees highlighted three components of this strategy:

- *Identify materially relevant holdings:* First, asset owners need to understand what holdings in their portfolio might be vulnerable to pre-financial risks. Some assets may be impacted by E considerations whereas others might be impacted by S or G considerations. Identifying those portfolio holdings that represent material risks and understanding what type of risk they represent is the starting point to better managing such risks.

- *Dynamically track materiality:* Measurements of "materiality" are becoming more readily available and asset owners are increasingly able to access data that allows them to evaluate their material exposures in a timely and actionable manner. As ESG organizations and regulators push for greater amounts of transparency, this type of tracking should become even easier. Industry specific key performance indicators (KPIs) that enable specific and widespread evaluation of pre-financial risks are already beginning to lay the foundation for comparisons between companies, sectors and industries.[30] New types of AI-driven ESG data vendors offer dynamic materiality scores that show how a company's relative ranking changes over time against its peers and across a whole slew of these materiality measures.

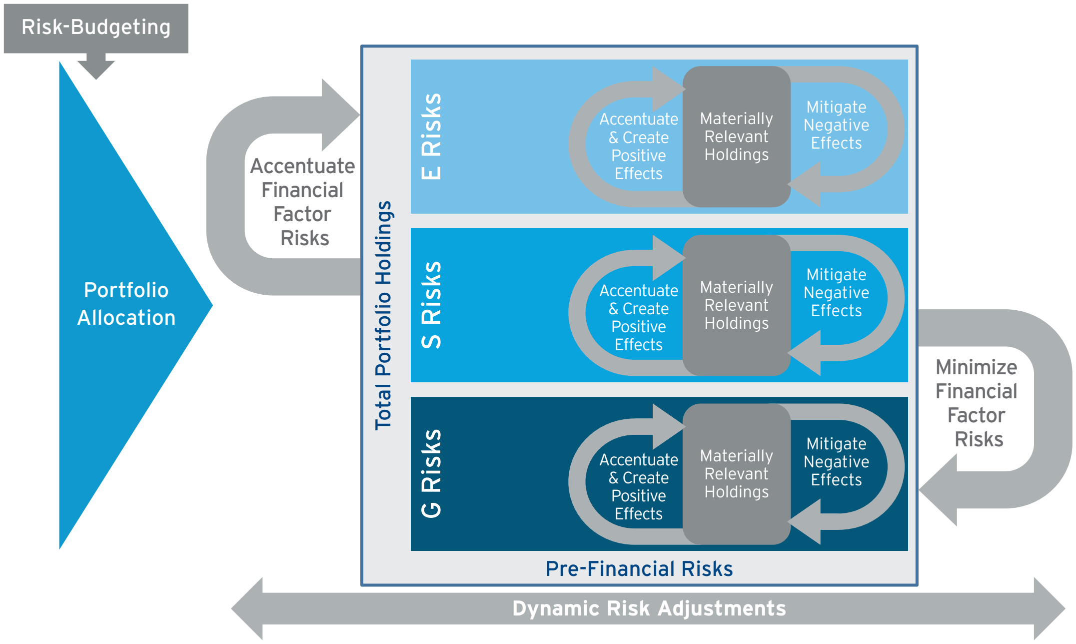
- *Deploy capital to mitigate material pre-financial risks:* Knowing where material risks sit in the portfolio allows asset owners to identify strategies to mitigate such risks. There are two aspects to such risk mitigation that asset owners can pursue through effective deployment of their capital.

  The first is to allocate capital to investment strategies that reward or incent companies to change their *negative* behaviors and reduce the likelihood of those firms contributing to material pre-financial risks. Given the link between perceived ESG risk and both the access to and cost of capital discussed earlier in this section, this approach can help to bring pressure to bear on company management by rewarding those that make such improvements to the detriment (and deterioration in share value) of those that do not make such improvements.

  The second is to pursue *positive* outcomes by identifying new projects or funding cleaner technologies in the primary market that can help a previously low scoring company or asset operator transition to a less detrimental operating model by creating new, more desirable paths for them to run their business. This is known as "additionality".

30 "How An Italian Energy Company Revolutionized Sustainable And Impact Investing in Structured Credit", Bhakti Mirchandani, Forbes, October 14, 2019, https://www.forbes.com/sites/bhaktimirchandani/2019/10/14/how-an-italian-energy-company-revolutionized-sustainable-and-impact-investing-in-structured-credit/#ecb9f2445137

Chart 3.7: Dynamic E-, S-, and G-Risk Assessment within Portfolio Construction & Management



Source: Citi Business Advisory Services

Dynamically managing their set of pre-financial E-, S-, and G-risks within the portfolio while simultaneously ensuring that the overall portfolio continues to broadly align to policy benchmark guidelines may become the emerging approach to responsible risk management for the asset owner community. This is illustrated in Chart 3.7.

Current Investment Management Approaches Fail to Address Expanded View of Responsible Asset Ownership

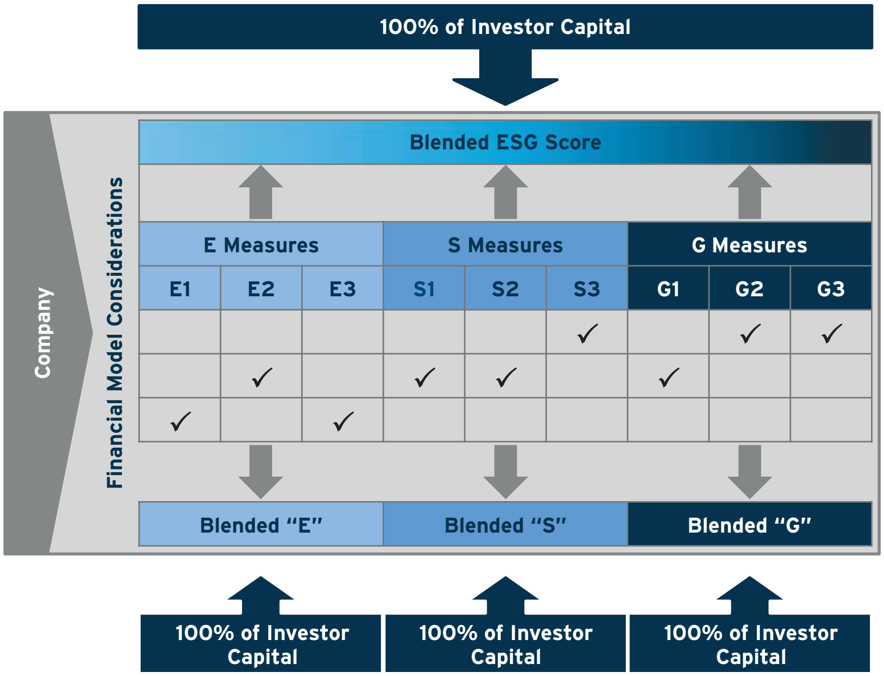
A gap is opening up between asset owners and investment managers as the current approaches used to address pre-financial ESG risks are ill-suited to the expanding view and goals of responsible asset ownership. Beyond simply achieving financial goals and managing financial risks, asset owners are increasingly likely to look to their investment managers to utilize the capital they are allocated to also more directly incent companies to mitigate pre-financial risks.

The challenge for the industry is that existing investment approaches – even ESG-focused strategies – are structurally unable to meet the demands of this expanding view of ownership. The three main investment approaches discussed in Section II each fail in this regard as discussed below:

- *Negative screening:* Choosing to exclude certain assets from the portfolio may reduce a subset of downside risks for the asset owner, but this approach may actually *increase* systemic risk by shifting the investor base for those securities to other asset owners that may not press to mitigate the company's pre-financial risks, thus enabling them to continue to attract capital without the corresponding pressure to address low KPIs in materially critical areas. Moreover, the continued ability of these companies to operate without shareholder pressures to enhance business operations means that the eco-system up and downstream from the company are also less incented to change their behaviors. While an effective public relations strategy, negative screening is actually the strongest example of why current investment approaches are focused on only managing headline risk and not driving meaningful change.

- *Integration approaches:* Current integration approaches that incorporate ESG within the traditional investment analysis framework by including ESG as an additional factor or filter fail to adequately tie the allocation of capital to specific enough E-, S-, or G-KPIs. Chart 3.8 shows how capital is allocated in integration approaches today. Measures of how a company's business operations align to a specific types of E-, S-, or G-risk gets aggregated into either a blended E-, S-, or G-score, or more commonly, get bundled into a composite ESG score. Funds designed to invest based on these aggregated scores fail to provide a discrete enough signaling mechanism to allow the connection between the investment being made with the asset owner's capital and the desired change in E-, S-, or G-behavior, and thus these investment approaches fail to mitigate any specific pre-financial risks. For example, an investor may invest into a fund exclusively focused on "E", but the companies held in that fund would not be able to discern from this investment whether the underlying asset owners are looking for them to reduce risks associated with climate change or whether they looking to improve the sustainability of resources used by the company by promoting clean water or green agricultural practices.

Chart 3.8: Allocation of Investor Capital in Current Integration Approach



Source: Citi Business Advisory Services

- *Stewardship*. Designed to be the most direct form of engagement in today's ESG investing toolkit, stewardship still falls short of tying investor's capital allocation to a specific set of desired KPI improvements that may work to mitigate non-financial risks. Communication between the investment manager and the companies they allocate capital to as part of the strategy is more direct than in other approaches as the investor's positioning as a shareholder gives them a voice, but the measurements of success tend to focus on the extent of engagement, not the effectiveness. Requests are not tied or measured by improvements in specific pre-financial E-, S-, or G-KPIs. This makes the approach at best only partially effective as a route to the reduction of pre-financial risks.

To properly understand and address these non-financial risks in investment portfolios, and to model their interplay with the traditional set of financial risks, new metrics will be required alongside new approaches to deliver the targeted exposure and management of these pre-financial risk exposures via investment products. Section III explores how this shift in industry approach may evolve.

"In the current scenario, we need to think about the social license. Look at the impact of this lockdown in terms of social imbalance, you can't just make money in a lockdown." – EMEA Asset Manager $500 billion - $1 trillion AUM

"Understanding ESG risk is fundamental to the assessment of a company." – NAM Asset Manager <$500 billion AUM

"We think of ESG as a factor. It doesn't add anything as of total return, but it does help with the risk profile and can reduce the risk profile while maintaining the return. It is about looking at the risk-adjusted return for ESG." – Global Asset Manager >$1 trillion AUM

"You can make the argument that carbon reserves is a risk in your portfolio. Whether it's a priced in risk or unpriced risk is a return question. People will throw out things that can be a risk, but the question is, is the return worth the risk? If the risk is worthwhile, you will take the risk." – NAM Hedge Fund

Section IV: Phase 2A–Redesigning Equities Investing with an ESG Lens

As asset owners grapple with an expanding view of what it means to run a responsible portfolio, their need for investment products that will help to *mitigate* pre-financial risks, not just address headline ESG risks, is likely to grow. This need for a more action-oriented portfolio may require investment managers to re-think how they consider E-, S-, and G-data and upgrade their integration methodology to better tie capital allocations to desired behavioral changes in areas related to pre-financial risks. Part of that evolution in approach is likely to be the development of a more robust set of E-, S-, and G-linked key performance indicators (KPIs) that can be used to monitor how the companies in a portfolio score over time. This would begin to represent a new type of non-financial portfolio return.

Development of such measures might set the stage for a more revolutionary change in approach. Survey participants for several years have spoken about ESG as offering both a financial and "values"-based focus. With the development of measurable non-financial return streams, it may be possible to actually extend the efficacy of such investments and create dual return products. Measuring both the financial return and the improvements in pre-financial risks associated with ESG could lead to a whole new category of dual return investment options.

While these new funds may start out focused on "green chip" stocks that offer the best possible financial and non-financial returns, a more holistic set of offerings that offer a range of ESG Value, ESG Core, and ESG Growth strategies may emerge. Inherent in this shift is the opportunity for investment managers to reinvent active management, and develop new portfolio construction approaches that meet investors' needs as well as demonstrate new dimensions of expertise.

Data to Measure Pre-Financial Risk Not Widely Available

As discussed in Section II, ESG data has historically been supplied by issuers through corporate sustainability reporting, generally published annually by a dedicated team seeking to highlight the best of the firm's achievements. Nearly 86% of companies in the S&P 500 now produce sustainability reports, up from just 20% in 2011, according to the Governance & Accountability Institute.[1]

Traditional ESG ratings providers and longstanding incumbents in the space have used this company-generated data, collecting and standardizing inputs to generate some of the early blended ESG scores that dominated a "check-the box" approach to ESG integration.

Survey participants were quick to point out the commonly acknowledged flaws within this layer of the ESG data ecosystem. Self-generated reporting allowed issuers to offset weakness in one E, S, or G category with high scores in another, the methodology heavily favors large cap companies with dedicated reporting teams, and scoring firms provide only limited visibility into underlying drivers of rating changes. Further, several participants shared that this type of mainstream scoring data was of little added value in terms of increasing their own asymmetric information advantage that could be incorporated into the investment process to better understand pre-financial risks.

Increasingly, investment managers and FinTech companies are solving for these issues by cultivating new, alternative data sources that *originate outside of the issuer*. These efforts aim to triangulate on pre-financial data and risks that may ultimately have financial implications.

Understanding ESG Alternative Data

Around 80% of today's ESG data is in text form, and natural language processing and artificial intelligence have begun to make meaningful contributions to interpreting the growing and vast amounts of information being generated about issuers on non-financial issues.[2]

To feed the industry's appetite for insights related to pre-financial risk and ESG-related effects, a number of data and analytics providers have emerged. Using AI and algorithms to scour sources, such as social media, news, trade associations, and non-governmental organizations, they provide investors with insights into a growing array of pre-financial and systemic risks. These offerings are becoming increasingly timely and sophisticated, incorporating new technology, such as sensors and advanced imagery, and using more traditional data in new combinations.

1 "Flash Report: 86% of S&P 500 Index® Companies Publish Sustainability / Responsibility Reports in 2018", Governance & Accountability Institute Inc., May 16, 2019, https://www.ga-institute.com/press-releases/article/flash-report-86-of-sp-500-indexR-companies-publish-sustainability-responsibility-reports-in-20.html

2 "Alternative Data delivers insights for Sustainable Investing", Parabole, 2019, https://www.parabole.ai/wp-content/uploads/2019/05/ESG-Data-Sheet.pdf

- During the recent Coronavirus Pandemic, TruValue Labs developed a Coronavirus Monitor which captured data on systemic and non-financial risks obtained from 100,000+ public sources. The monitor tracked the relative prioritization of these risks and their change over time. For example, it noted that social categories dominated during April and May, reaching over 60% of total volume of signals in March.[3]

- ESG data and reporting provider Measurabl provides granular sustainability data and reporting about commercial real assets to various stakeholders including owners, tenants, and capital markets participants. To provide more frequent data about buildings' energy consumption, data is captured at the meter level and integrated with data from utility companies to create a more complete picture of energy usage.[4]

- Satellite data evolved from the early days of "counting cars in parking lots", and providers now layer together imagery with various other signals to offer insights.[5] The Oxford Sustainable Finance Program is advancing "spatial finance", bringing together geospatial capabilities and financial analysis, through new asset-level datasets combining geospatial imagery with climate change scenarios and various stress tests.

These and other emerging alternative data approaches are beginning to underpin a new, more holistic view of a company or issuer—one that notably does not require their direct participation or disclosure in shaping investors' and investment managers' perspectives.

Companies Lose Control of Their ESG Narrative

This proliferation of information *about* issuers, as opposed to *from* issuers, is becoming more impactful as ESG data providers translate the noise of data generated into more meaningful investment signals. Accordingly, companies are losing control of their own ESG narrative. Survey participants expect that issuers may find it increasingly challenging to shape their own sustainability stories, especially as ESG data providers continue to improve the value of insights that they are able to generate off of a firms' data exhaust.

For investment managers to benefit from the potential of these data sets, investment professionals will need to understand how new data can be leveraged to identify systemic and stakeholder alignment risk. Analysts will have to develop more sophisticated models, with a focus on identifying connections between the new data sources that are being gathered and downstream financial and non-financial outcomes.

Investment professionals will also have to map the emerging data against businesses' value chains and broader stakeholder universes—from sourcing raw materials through delivering products to end customers—and track both beneficial and detrimental outcomes that are the products and by-products of their business operations.

The broader view of the interplay between these non-financial risks and these ever-expanding alternative data sources is captured in Chart 4.1. The left of the chart highlights how a company may be vulnerable to systemic risks across the company's supply and distribution eco-system including the impacts of climate change on the infrastructure they rely on (or own) and their ability to access liquidity to facilitate operations. The right side of the chart illustrates the risks emerging from stakeholders. Examples of these risks include shareholders, employees, and consumers, who collectively govern a business's societal license to operate.

This wide-ranging set of risks can have financial and non-financial consequences for a business in today's environment. Alternative data is informing risks of all types, and allowing investment managers to begin to assess these risks and ESG-related effects from multiple angles.

- **Bottom-up:** Company-specific data exhaust will allow for insight into not only the products and services sanctioned by the company but also into the unintentional by-products of each business's operations. All of this data may be evaluated for its effects. Further, each business's announced sustainability and social goals can be tracked and evaluated to see how they compare to the actual business operations and broader shared goals as defined in the emerging ESG frameworks.

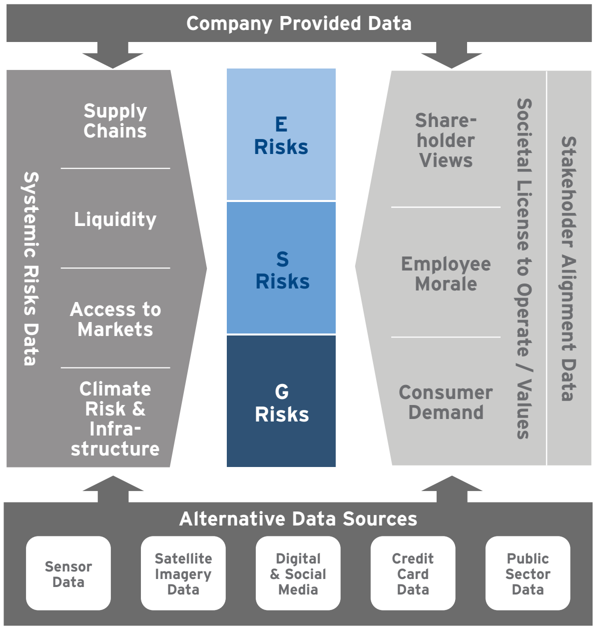
- **Top-down:** In parallel with the issuer-specific areas of focus identified in the bottom-up efforts, non-financial signals will also be identified and assessed. Investment managers will look at the entire eco-system that the company operates within—physical and virtual—to understand sentiment and spot signals around pre-financial risk trends as well as financial risk trends.

Pre-Financial Risk Translated to Key Performance Indicators (KPIs)

This expanded understanding of Pre-financial E-, S-, and G-risks, introduces the opportunity to develop more precise metrics and measurement around the achievement of an investors' desired E-, S-, or G-effects, which in a financial sense relate to their risk mitigation objectives.

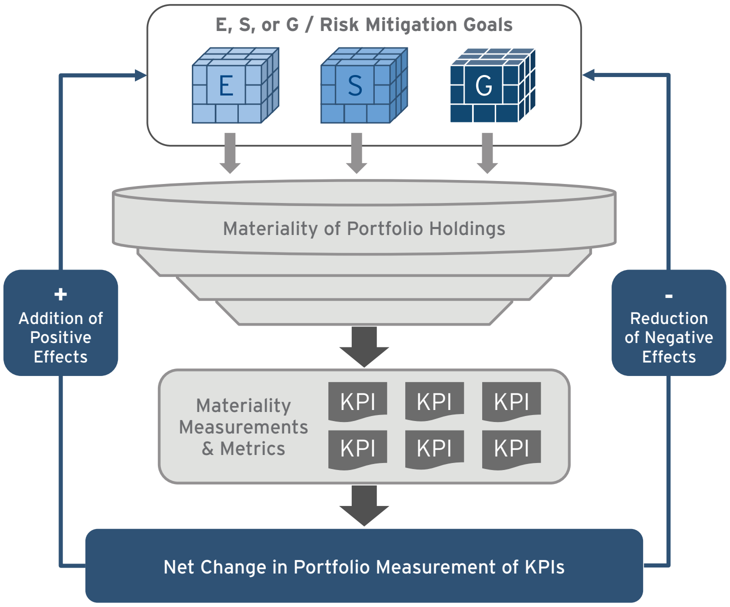
3 Coronovirus ESG Monitor, https://coronavirus.truvaluelabs.com/
4 Measurabl, https://www.measurabl.com/how-it-works/
5 "Stock Picks from Space: Investors are using real-time satellite images to predict retailers' sales. Is that cheating?", Israel G. Vargas, The Atlantic, May 2019, https://www.theatlantic.com/magazine/archive/2019/05/stock-value-satellite-images-investing/586009/

Chart 4.1: Stakeholder Alignment and Systemic Risk



Source: Citi Business Advisory Services

Chart 4.2: Benchmark Creation Uses New KPIs



Source: Citi Business Advisory Services

Chart 4.2 illustrates how these new data insights drive the portfolio allocation and design process. From the top, asset owners will prioritize risk mitigation goals. This is likely to go beyond the "ESG" or even "E", "S", or "G" level and to a more granular objective against something that can be specifically measured. For example, a portfolio may focus on reducing greenhouse gas (GHG) emissions. This would likely only be a focus for companies that meaningfully contribute to GHG emissions—sectors and individual issuers where these emissions are material.

For each of these companies, direct and indirect GHG emissions can be measured as well as the net emissions across the portfolio. Period-over-period changes can be captured across the set of companies in the portfolio. A product offered by an investment manager focused on this key performance indicator (KPI) can track both the increase in positive effects and the reduction of negative effects across their portfolio and report that net change back to the asset owners. To ensure an effective feedback loop throughout this KPI creation process and determine whether or not the issuer is meeting the KPI, pre-financial risks may need to be continually measured, compared, and tracked, rather than assessed at a single point in time.

As noted back in Section I, some of these KPIs are already being defined for specific industries through common frameworks such as from the Sustainability Accounting Standards Board (SASB) or through the United Nations Sustainability Development Goals (SDGs). Survey participants see the marrying of these emerging measures with methodologies to track non-financial returns as an area of significant innovation for the investment management industry.

KPIs that Can Be Measured, Compared and Tracked

As trends emerge around a KPI showing increasing positive effects and/or falling negative effects over time, the net changes might become a new set of portfolio metrics that can be monitored on their own, alongside traditional financial returns. This would allow investment managers to move from merely prioritizing an ESG-related goal to actually reporting and being assessed on their ability to deliver a portfolio that creates meaningful change.

Sourced from new data, management of this risk might be able to move from being backward looking to being addressed in real-time. Portfolio assessment would then become more dynamic and holdings would be able to be managed actively as issuer behavior changes relative to these risks.

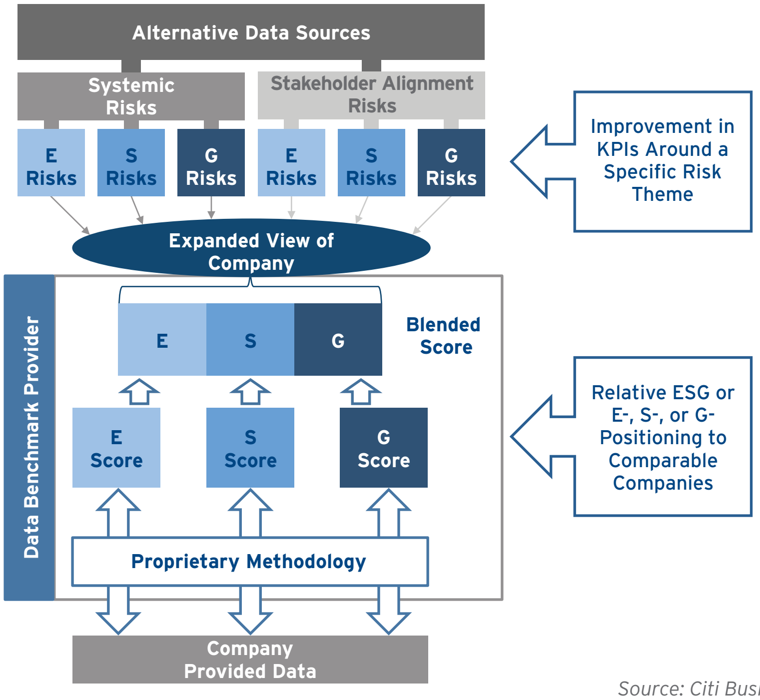
Additionally, "what-if" analyses could be developed to identify companies with opportunities to make notable improvement to their non-financial metrics, helping to guide stewardship discussions between asset owners, asset managers, and company management.

Many of these KPIs operate as "pre-financial" predictors as in the recent case of Wirecard in Germany. To the layperson, the company suddenly unraveled in June 2020 over fraudulent revenues and a missing $2 billion.[6] However, to those that were tracking ESG signals derived from alternative data, indicators starting flashing about Wirecard's business ethics as far back as 2015, and, according to Truvalue Labs, a November 2018 class action lawsuit saw the company fall to rank in the 14th percentile of business ethics against their peer set in Consumer Finance, a measure that showed 86% of companies in their peer set performing better than Wirecard.[7] If investors had been tracking business ethics as a non-financial KPI, this event would have garnered attention and likely some action that might have triggered investors to push the company on its activities and protect the firm's capital.

Expanded View of a Company

The net result of increasing awareness of pre-financial risks and KPIs to measure and track performance is seen by survey participants as leading to a richer view of a company, as illustrated in Chart 4.3. Investment managers and investors will be able to build out a more nuanced understanding of both the pre-financial risks and ESG-related outcomes that a company is generating, as well as how that company is positioned relative to its peers.

Chart 4.3: Expansion of Non-Financial Company KPIs



Source: Citi Business Advisory Services

6 "How Wirecard Went from Tech Star to Bankrupt," Paul J Davies, The Wall Street Journal, July 2, 2020, https://www.wsj.com/articles/wirecard-bankruptcy-scandal-missing-$2billion-11593703379

7 "Wirecard AG: Tremors before "The Big One": Timely ESG signals warned investors", Eliot Caroom, Truvalue Labs, June 29, 2020, https://truvaluelabs.com/wp-content/uploads/2020/06/Wirecard_Insolvency_Research_Brief_-2.pdf

"ESG in the future will be an example of a big data exercise. The next version of ESG is less backward-looking and more forward-looking. More forward-looking data frameworks can go in to huge amounts of data that is not publicly available or published by the index providers." — Global Asset Manager >$1 trillion AUM

"All ESG data is neither extra-financial nor non-financial—we would think it is very financial as long as you're looking at the appropriate time horizon." — EMEA Asset Manager $500 billion – $1 trillion AUM

"We're still finding it difficult to measure sustainability and ESG but we're working heavily on this. We're pouring our AI efforts into this." – EMEA Asset Manager $500 billion – $1 trillion AUM

E-, S-, or G-Themes Move from Post-Financial to a Pre-Financial Filter

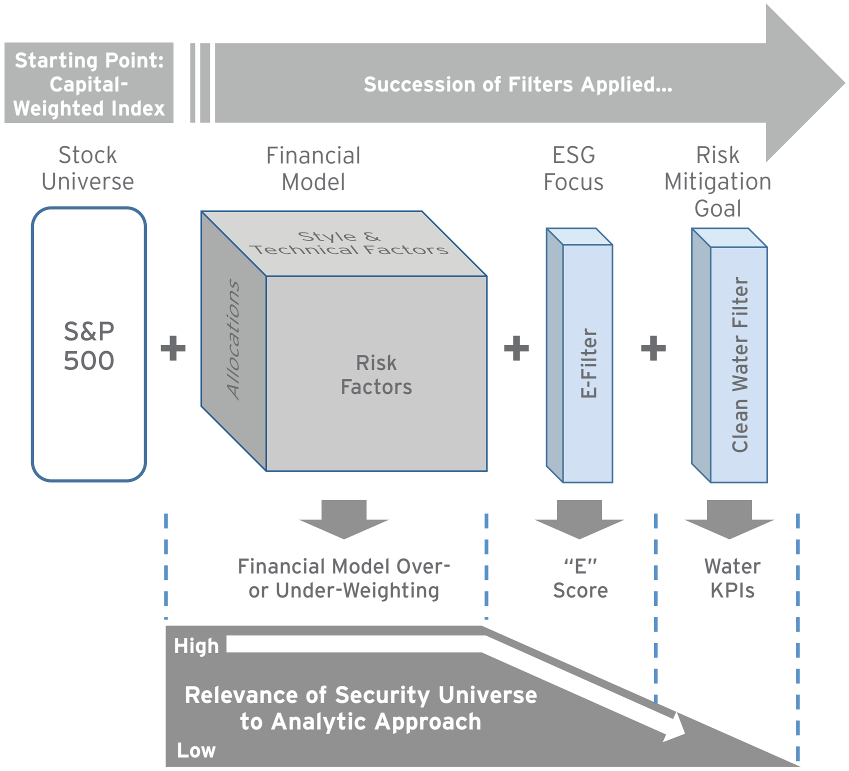
The current integration approach to investing fails to send a clear message to management teams inside issuers about their investors' non-financial priorities; moving the focus on ESG earlier in the process and using themes linked to clear KPIs to select the security universe may help to improve signaling to company management and enhance the effectiveness of investment funds to deliver pre-financial risk improvements.

ESG at the End of the Security Selection Funnel

As discussed in Section II, the current state of ESG integration operates either as a peer to other risk factors in the investment model or is used as a filter to adjust the over-weighting or under-weighting signals generated by traditional financial models. In most instances, the ESG score or the "E", "S", or "G" score is being applied to existing stock universes that are primarily determined by a company's market cap weighting. This is displayed in Chart 4.4.

Using the example illustrated in that diagram, it becomes clear that filtering the results of the financial model by the "E" factor means that the stock universe becomes less relevant. Only a sub-set of the companies in the S&P 500 would have business models that might have a material effect on the environment. Tilting the portfolio towards an "E" filter is thus only partially effective in measuring the companies in the stock universe. Moreover, this approach dilutes the ability of investors to reduce "E" risks in the portfolio since the tilt does little to inform the underlying companies about what aspects of "E" risk matter and what behaviors they would like to see improve.

Chart 4.4: Relevance of Stock Universe In Current Integration Approach



Source: Citi Business Advisory Services

Accordingly, much of today's ESG strategy ends up providing little to no clarity to the companies being either over-weighted or under-weighted as to the connection between capital allocation and the ESG-related risk mitigation.

Going further down the filtering approach and then considering a non-financial KPI such as measuring for clean water, makes this progression even less relevant. Whereas only a sub-set of the S&P 500 companies might have their financial weighting adjusted by their "E" posture, the size of that sub-set becomes even smaller when only those companies that might materially affect water is considered. Using an S&P 500 universe to invest capital to influence a company's KPIs around clean water is thus so indirect as to be meaningless. This is why we term the current approach to integration as simply managing the headline risk of portfolios.

Moving ESG Selection to the Beginning of the Security Selection Funnel

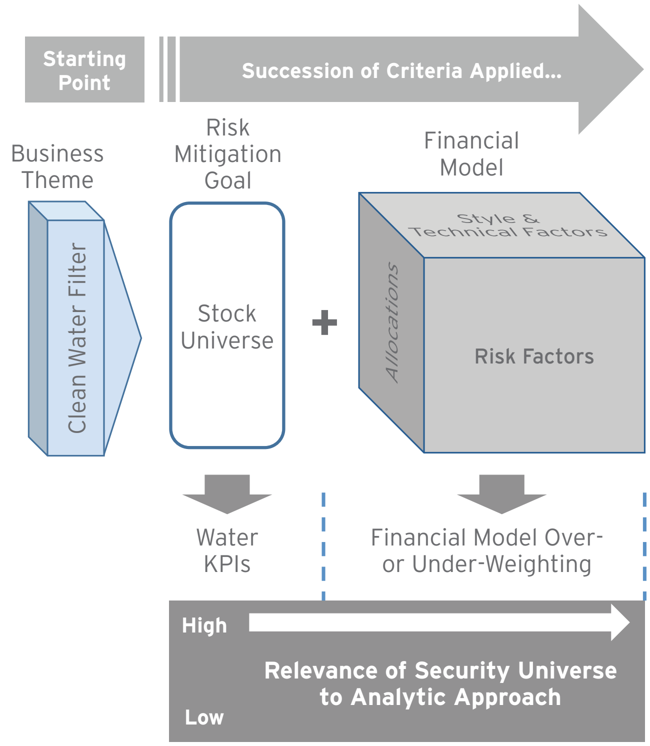
If the order of filters in the process were reversed, however, moving our Clean Water risk mitigation consideration to the beginning of the process, the signal from the ranking of securities would come across more directly. This is illustrated in Chart 4.5.

In this approach, the Clean Water filter drives selection of the stock universe. It is not the S&P 500, it is companies whose business operations can *materially* affect waterways and can thus be assessed, measured, and tracked against KPIs used to measure clean water. Within this universe, issuers can then be over- and under-weighted based on their relative financial attractiveness, retaining the primacy of the Clean Water exposure criteria. While this approach may produce portfolios with fewer securities, the relevance of the securities will be much higher and the ability to track the portfolio to understand how the KPI is changing will be more meaningful.

This level of precision around ESG-related objectives and the KPIs that demonstrate them are seen by some survey participants as a necessary precondition to deliver portfolios that can effectively signal to companies what pre-financial risks investors want to see addressed. Defining what themes best encapsulate ESG objectives and which KPIs are optimally positioned to measure pre-financial risks is seen by survey participants as a significant opportunity as the lack of standardization offers many paths for differentiation.

Today there are no formally agreed set of ESG themes, goals, or KPIs. The way that SASB looks at themes and the measurement of KPIs differs from the way that the United National Sustainability Development Goals look at objectives, and KPIs. Survey participants noted that a growing share of investment managers are additionally developing their own way of looking at ESG themes, objectives, and KPIs. As this space develops, new product opportunities that take advantage of proprietary approaches and measurements might emerge, however, and mark not an evolutionary, but a revolutionary change in the investment management space.

Chart 4.5: Creating More Relevant Stock Universes



Source: Citi Business Advisory Services

The Opportunity for Dual-Return Investment Products

The emergence of KPIs as signals that can be measured, compared, and tracked over time, along with the possibility of capturing these non-financial effects as unique return streams, sets up the potential to have products that offer dual returns. New portfolios might be designed that prioritize and report on both financial and non-financial returns. As investment managers crystalize their approach around measuring non-financial returns, two sets of returns could be published each period for the fund—the financial return and the non-financial performance of the fund holdings relative to the selected E-, S-, or G-related theme.

This new state would mark a transition from a more intangible or directional version of ESG delivered via integration to something that is tangible and measurable.

Dual-Return Product Development

Product development of dual return funds may follow a path from a first generation of high-conviction products to funds focused on investing across the entirety of materially relevant sectors and securities, allowing for the creation of a broad dual-return product set.

High conviction, opportunistic, thematic funds: Early offerings in this space may target E-, S-, or G-related themes that resonate with investors and that have clearly defined and measurable KPIs. An example may be a fund that focuses on Climate Change and assesses the relative positioning of companies in its stock universe by a non-financial measure such as how much they are reducing their production of greenhouse gasses **and** by their relative financial strength and weakness.

To create the product, an investment manager would target materially relevant sectors where the companies' business operations directly impact the level of greenhouse gas (GHG) emissions.

Many non-financial returns should be transferable and relevant across securities, industries, and geographies; greenhouse gasses all end up in the same atmosphere, meaning there is opportunity to source this improvement from a utility company, a trucking company, or an airline.

If that is the case, then investors will be able to hunt for their non-financial return wherever it is priced the most advantageously. Similar to using price-to-earnings as a metric to evaluate stocks against their peers, investors may be able to source the most advantageous price-to-KPI available in the market.

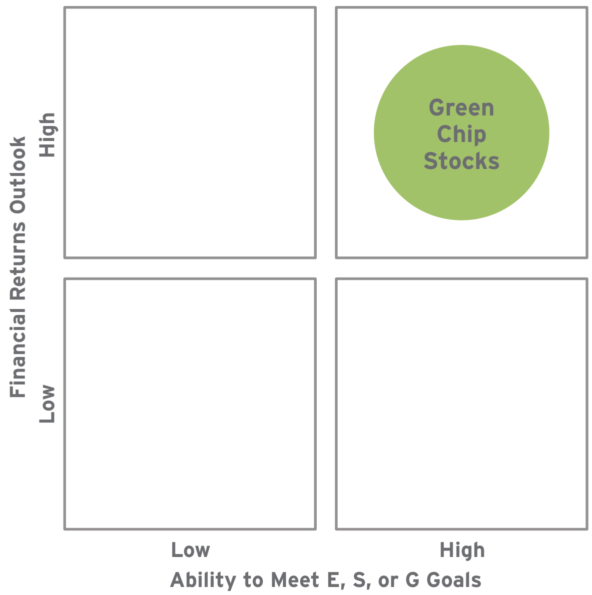
For our sample Climate Change fund, such a universe could span power, transport, agriculture, and certain industries in the steel, cement, chemical, and waste spaces as an example. They key consideration for inclusion in the stock universe would be whether or not there is information that would allow the investment manager to measure the company's greenhouse gas emissions.

Within their selected universe, the investment manager may rank the entire set of companies from low greenhouse gas emitters to high and then by how strong or weak their financial prospects are relative to the entire set of companies in the universe. In this way, the investment manager may be able to isolate a "best performers" universe that offers the strongest combination of financial and non-financial returns for the Climate Change theme and the GHG KPI.

As seen in Chart 4.6, just as high value, large cap companies are often called out as being "blue chip" companies, a set of companies that score well on delivering the desired E-, S-, or G-related goal and that also provide a strong financial return might be considered "Green Chip" companies.

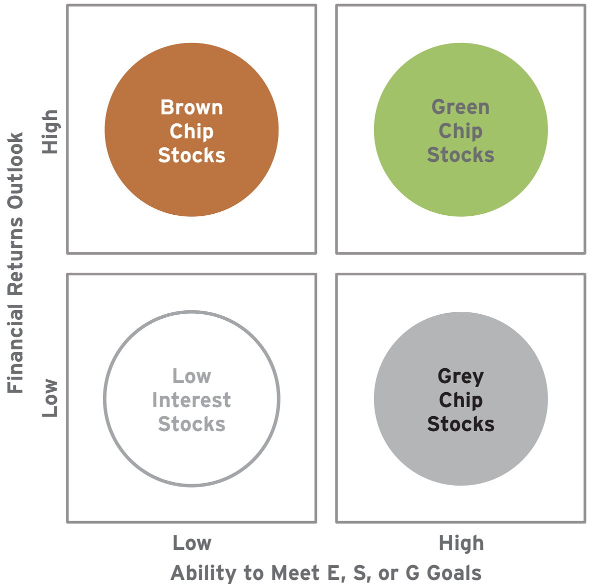
Focusing capital allocations on these thematic green chip funds could allow asset owners to mitigate some of the pre-financial systemic and stakeholder risks in their portfolio. The approach to constructing these funds is likely to be very thematic and opportunistic. However, using capital to drive a change in behavior might require more alternatives with greater risk, but where the improvement in ESG-related returns may be more substantial.

Chart 4.6: Green Chip Companies



Source: Citi Business Advisory Services

Chart 4.7: Categorizing the Range of Materially Relevant Companies



Source: Citi Business Advisory Services

Materially Relevant Funds: Over time, the product suite might expand to look at the entirety of materially relevant sectors, industries, or geographies, as opposed to exclusively the top performing companies. This could lead to a broadening of the companies considered for inclusion in the portfolio from the universe beyond just green chip companies. To make the evolution in portfolio construction progression easier to follow, we will categorize the entire range of companies that might be considered via a color-coding approach. This is shown in Chart 4.7.

This structure offers a new lens through which to view companies that today, may not be considered among the tier of top ESG performers and in some instances may be getting negatively screened out of investor portfolios. For example, "brown chip" companies in the stock universe might have a strong financial outlook, but have done less work to improve their business operations and are thus showing worse scores in terms of the targeted thematic E-, S-, or G-KPIs. Other companies, "grey chips", may be better candidates to deliver on non-financial goals, but could be less attractive from a financial returns perspective. Companies that offer lower financial prospects and have done little to improve their business operations relative to the measured KPI metrics, shown here as "low interest stocks", would most likely be excluded from thematic funds built around materially relevant sectors. These firms may instead become good targets for private equity or activist investors and the new special purpose acquisition companies (SPACs) they are creating.

Having categorized the entirety of companies in materially relevant sectors, the investment manager may then begin to build out a range of dual-return products. With more transparency into both financial and pre-financial risk and returns, active managers can focus on engineering products by mixing green, brown, and grey chip companies. This concept is illustrated in Chart 4.8.

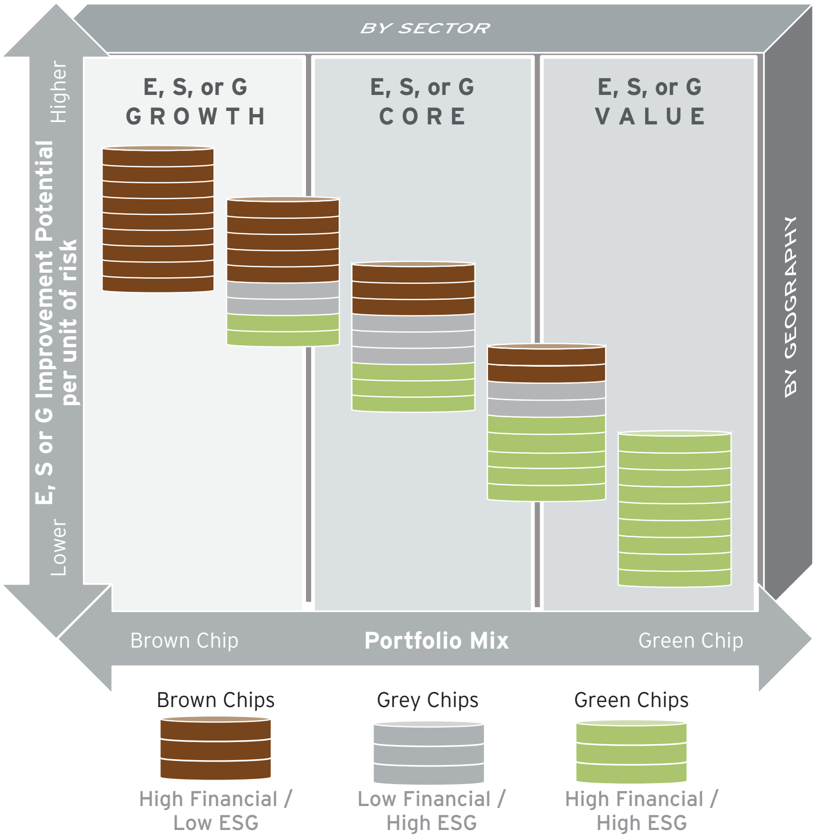
The diagram illustrates the range of portfolio types that can be constructed. Portfolios comprised entirely of brown chip companies might have the lowest scores against a given E-, S-, or G- thematic KPI, but those issuers may still offer steady financial performance and the largest potential to improve their KPI score. Collections of brown chips could be seen as "ESG Growth portfolios". This would contrast with green chip funds that might be considered "ESG value". Between the two extremes would lie a varying mix of potential combinations that could tilt portfolios to generate more E-, S-, or G- return per unit of risk or more financial return per unit of risk. This would allow for an "ESG Core" strategies to emerge.

Security selection—choosing the mix of green, brown, and grey companies—could be driven by a rules-based engine or through a discretionary investment approach, allowing for a range of passive and/or active products. As shown in Chart 4.9, since 2013, actively managed ESG products have attracted more investor flows than passive ESG funds, but both categories grew strongly in 2019 and continued to show strength into Q1 2020 despite extreme market volatility. Passive flows tagged to ESG funds more than doubled from +$27 billion in 2018 to +$56 billion in 2019, and based on Q1 2020 results, may rise to as much as +$68 billion in 2020. Active flows tagged to ESG funds rose 2.6x between 2018 and 2019 from +$36 billion to +$94 billion but were hit more substantially during Q1 2020 and more data will be required to project a realistic 2020 figure.

Finding the Niche between Financial Returns and Impact Funds

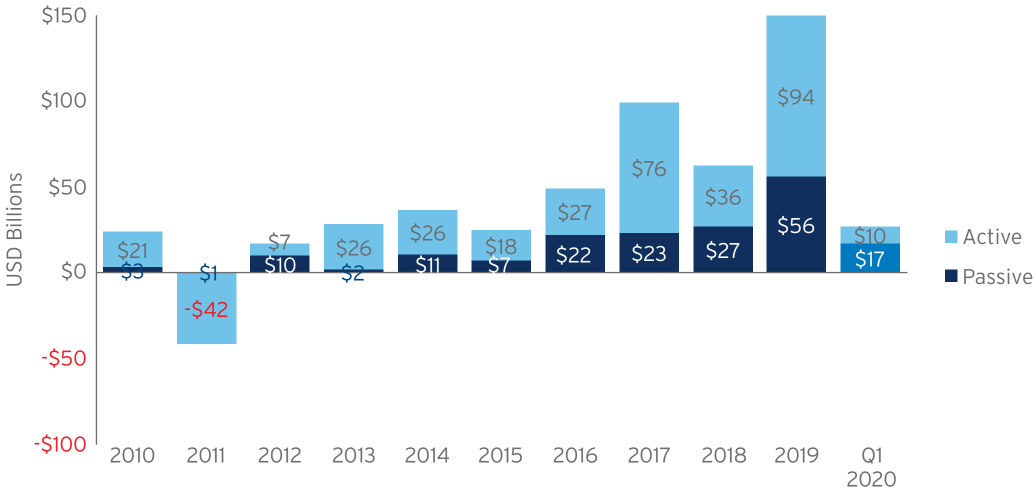
Dual return products, measured by both their financial and non-financial return, might fill the gap between today's ESG integration funds that exclusively deliver financial returns and impact funds that prioritize non-financial results. Key to being able to facilitate the positioning of such dual return products into investor portfolios would be an ability to 1) align the allocations against an already familiar equities framework and 2) ensure the investor would not be sacrificing the financial return in exchange for the E-, S-, or G-risk mitigation.

Chart 4.8: Constructing a Range of Dual Return Portfolios



Source: Citi Business Advisory Services

Chart 4.9: ESG-Tagged Fund Flows: Active vs Passive



Source: Citi Business Advisory Services' analysis based on proprietary data subscriptions to eVestment and ISS Market Intelligence

To enable those pre-conditions, dual return products may need to be designed within the framework of existing sector and geographic products and offer up separate product offerings for the type of stock exposure they provide—large cap, mid-cap, or small-cap. Unlike today's integration approach, however, the E-, S-, or G-KPI used to measure the pre-financial risk mitigation would be used as the primary filter for selecting the sub-set of securities. For example, a dual return Climate Change fund may look at the universe of U.S. small cap infrastructure companies and within that rank the various companies and align the potential investment portfolios to deliver unique combinations of Small Cap Growth, Core, and Value as well as a mix of ESG Growth, Core, and Value. This range of potential dual return strategies is illustrated in Chart 4.10.

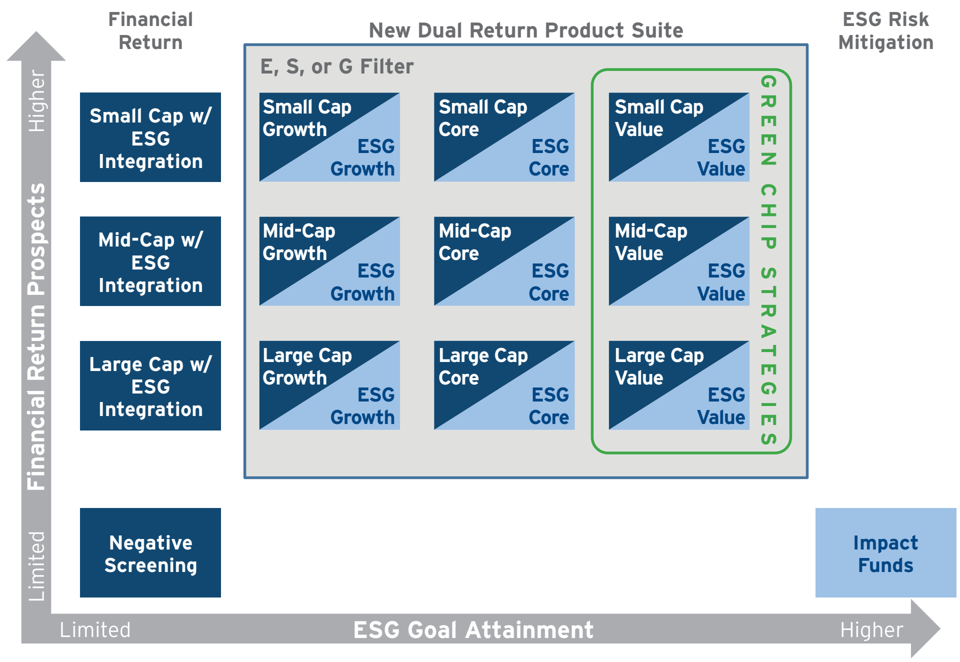
In the example above, we used climate change as the E-theme for the portfolio and the KPI being used to measure companies to determine their green, grey, or brown chip status was greenhouse gas emissions (GHG). If we were to create another E-theme around Clean Water and were to use a KPI that looks at water withdrawal, a different set of U.S. small cap infrastructure companies might end up in the portfolio. If a company's business model created KPIs that could be used to measure both climate change and clean water, it may have a different ranking in each thematic fund—perhaps being a grey chip against one KPI measure and a green chip against the second KPI.

The benefit of this approach is that the link between which measures of E, S, or G matters most to a specific stock's price will become much easier to discern. This will allow better signaling to the company around where they might need to improve their performance than is provided today using the blended ESG integration approach. Further, the new approach would allow for investment dollars to be more directly tied to desired non-financial outcomes that could reduce E-, S-, or G-risks for the underlying asset owner.

"ESG is here to stay, it will develop in various forms. The interesting thing is probably that it's more active than passive. The passive aspects to this are very quantitative. And even there, it's quite subjective in terms of what makes something ESG bound. I would anticipate this continuing to grow." — Global Asset Manager >$1 trillion AUM

"The idea of having an ESG benchmark and economic benchmark is interesting. The likelihood of what we do with indices could change. Indices are so easy to build and customize. Yes, I think it will change the way we look at indices, but I think it will lead to a second world of indices that are used for different purposes." — EMEA Asset Manager $500 billion - $1 trillion AUM

Chart 4.10: Positioning of New Dual Return Equity Products in Existing ESG Landscape



Source: Citi Business Advisory Services

Re-Setting the Stage for "Active" Management and a New Industry Arc

Development of new non-financial benchmarks, KPIs, and templates to create dual return products would substantially expand the concept of active management and result in the creation of new security evaluation models. Even passive dual return products will have to be actively designed and assembled and the rules-based approaches defined—all of which requires innovative new thinking. Enabling dual return active and passive products would represent a new path for the industry, but one that offers the opportunity to deliver value to clients in unexplored ways that mark an expansion in investment manager expertise.

Divergent Approaches May Create Opportunities for Differentiation

The launch of dual return products in the ESG space may trigger a period of industry-wide creativity. Investment managers have already begun to depart from the standardized ESG scoring provided by the global data providers and instead develop their own E, S, and G measures and data inputs. This push is likely to intersect with emerging frameworks like SASB that define precise KPIs and emerging regulations that may require specific types of company disclosures. Initially, each manager may marry their house view, industry standards, and regulatory disclosure data in unique ways that may end up being highly divergent.

Several managers may target a common theme like Climate Change in slightly different ways akin to how there are multiple variants of smart beta "value" funds. To simplify our description of dual return products, we used one KPI to filter and determine the stock universe (greenhouse gas emissions or water drawdown), but in reality, a group of KPIs are likely to be blended together to create a proprietary filtering methodology and the measurement of each company's adherence to that set of KPIs may be based on proprietary models that pull from multiple sources, not just the company's required disclosures. Different managers may look at the same company and come to very different conclusions about its relative attractiveness and what type of return might be available.

Finding a common benchmark to measure these variant versions of climate change funds would be difficult in this early period. Though both active and passive dual return products may be created, they would be based on unique formulations and thus show little vulnerability to having their returns eroded through broad duplication of their financial and non-financial return streams.

Investing Ecosystem Catches Up, Consensus Views Emerge

The window of opportunity to create a distinct and differentiated brand and approach to delivering dual return products would at some point in the future begin to close.

Initially, this transition may play out by stocks coalescing towards positive and negative E-, S-, or G-stories. Much like "story stocks"[8] today which are valued not on assets or demonstrated earnings but trade at a premium based on the *promise* of future financial returns, E/S/G stories will develop around the promise of delivering risk mitigation or positive non-financial effects although the actual measurement of these effects may vary. Investors will look across similar dual return products and expect to see the same "story stock" in each.

These names will begin to be commonly included in funds based on their non-financial stories with the same goal we see with traditional story stocks today—the opportunity to identify a stock prior to its inflection point where it becomes a momentum stock. Only in this case, investors will be investing to capture *non-financial momentum*, not just financial momentum.

Over time, the metrics that illustrate these stories might be expected to mature and standardize and the holdings in the various thematic funds that may have begun as highly divergent are likely to converge. Asset owners, regulators, and sponsors of ESG frameworks will all continue to push for a more common set of standards, definitions, and language to level the measurement of pre-financial risks. Systems of forecasts and estimates will develop and sell-side research organizations may find new life publishing their views on non-financial returns.

With standardization of metrics and an ecosystem of estimates, consensus views will develop for E-, S-, and G-KPIs, just as they have developed for financial metrics. Investors will demand transparency into the various managers' approaches and begin to question those that seem to include or exclude commonly expected measures. The consensus and variant view dynamic will re-emerge—only across a much richer and more varied suite of financial and non-financial sources of return.

8 "Story Stock", Will Kenton, Investopedia, May 7, 2018, https://www.investopedia.com/terms/s/storystock.asp

"That's one of the major sources of confusion and divergence between the ESG data providers today. They are many using different metrics to measure the same underlying issue. Never mind they apply different weighting schemes and analysis to those issues." — EMEA Asset Manager $500 billion – $1 trillion AUM

"The comparability of returns across different types of products that ESG influences will be more challenging because all the benchmarks will fragment." — APAC Investor

"The game changer is going to be the creation and availability of data and an accepted framework by asset managers which will enable so much of the development of the application of ESG." — APAC Investor

"ESG is going to be how we differentiate. Our 16 person ESG team is available to all our investors like our data science capability." — NAM Asset Manager <$500 billion AUM

Go to Market Approaches and Benefits of Dual Return Equity Products

Investment managers looking to develop a dual-return equity product set have multiple options on how to align their business offering. Three models can be envisioned that would each provide a unique value proposition. These are summarized below:

- ***Thematic Expert:*** Some managers may opt to focus on one set of E-, S-, or G-related themes or sub-themes. This decision could be linked to an existing sector expertise or it could be a new value proposition for the firm that they develop as a way to differentiate their offering. For example, a manager may choose to focus their dual return ESG product suite on the social implications of investing and have specialties in one or more S-linked topics. Borrowing from the UN Sustainability Development Goals (SDGs), a manager could thus be an expert in investing in funds that incentivize companies to pursue "Gender Equality" or they could have a broader umbrella of S-linked topics spanning multiple investment themes with goals focused on "No Poverty", "Zero Hunger", or "Good Health and Well-Being". Managers pursuing this approach would be able to market their thematic expertise and deep focus on key topics and measures related to specific S-related KPIs.

- ***Cluster Expert:*** Other managers may adopt a broader approach, choosing a related group of E-, S-, and G-topics that can be mutually reinforcing in terms of the non-financial improvements they pursue. An example here might be a decision to focus on "Preservation and Sustainability" as a focus area. Using the same UN SDGs, a cluster under this topic might include themes linked to the E-related goals of "Clean Water and Sanitation" and "Affordable and Clean Energy" as well as S-related objectives like "Zero Hunger" and "No Poverty" and G-related metrics linked to "Responsible Production and Consumption". Cluster experts can have a multi-tiered discussion with target companies around how to reduce their pre-financial risks around not just the specific E-, S-, or G themes, but also as they relate to the broader cluster.

- ***ESG Theme Box Provider:*** Managers able to support a larger scale operation may choose to build out a full suite of dual return products and offer them as building blocks for investors and for their own solutions. Just as many equity managers today can support a full set of style boxes, sector, and geographic products, they may add ESG theme boxes to this approach. Each theme box would focus on delivering a different type of pre-financial risk mitigation and each would have its own unique set of KPIs to measure the relative exposure and progress of companies. A substantial range of potential combinations would be enabled by this approach, each of which may have its underlying small-, mid-, or large-cap variants. Managers able to provide such breadth may also extend their portfolio advisory services to incorporate consultations with key institutional investors and wealth platforms around how to establish their desired ESG risk mitigation programs. An example of this ESG theme box approach using the U.N. SDGs is illustrated in Chart 4.11.

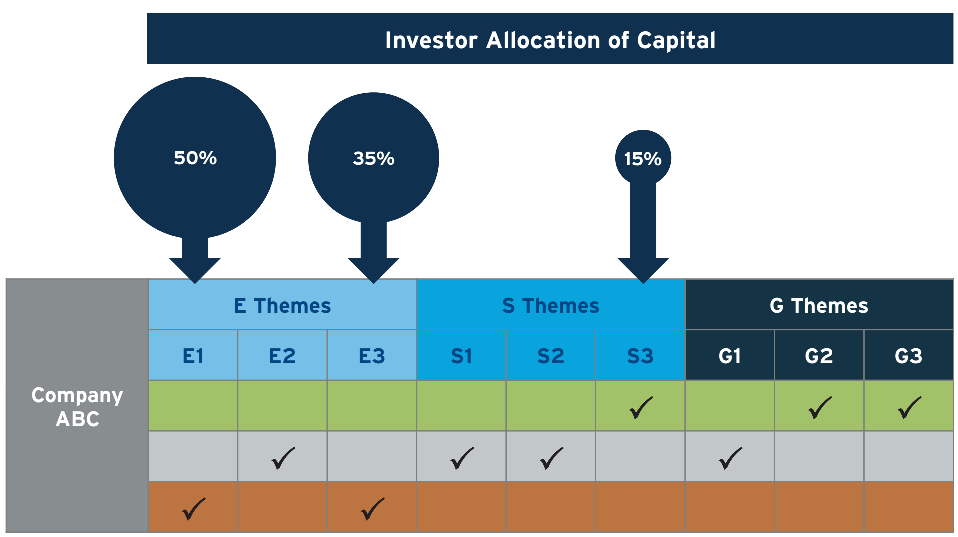
Regardless of which model is chosen, managers should be able to create actively managed and/or passively constructed E-, S-, and G-dual return products using this same basic template.

One improvement that should emerge early in the development of dual return funds is their superior ability to signal the priorities of a company's underlying investors in regards to specific E-, S-, or G-concerns. Rather than investors allocating money to broad ESG or E, S, and G funds that focus on just the headline risks associated with those categories, the new dual-return products should allow investors to send a much more targeted message via their allocation of capital. Indeed, these funds should offer clarity to the underlying company about which of their E-, S-, or G-linked risks are most concerning or valued by the market. This is illustrated in Chart 4.12.

Chart 4.11: Illustrative E, S, & G Business Theme Boxes

Source: Citi Business Advisory Services

Chart 4.12: Allocation of Investor Capital in New Dual Return Thematic Funds



Source: Citi Business Advisory Services

By having a range of discrete E, S, and G dual return products that each focus on improving the KPIs associated with that specific theme, the manager is providing the investor an opportunity to allocate capital in a manner that aligns to their individual concerns. Where capital flows is likely to show companies their E-, S-, and G-related strengths and weaknesses much more readily than today's scattered approach that uses a blended E, S, and G score or simply tilts a portfolio to a broad E, S, or G weighting.

For example, an investor may choose to allocate 50% of their capital to a manager's fund that looks to ensure clean water and 50% of their capital to a second fund targeted at redressing the negative impacts of climate change. If the fund is looking to only invest in green chip opportunities and a company scores poorly against these themes, it would be dropped from the portfolio. If an investor chooses a higher risk/higher return ESG growth fund, the company may attract capital even if it is considered a brown chip stock, but this allocation will be matched by a much higher level of shareholder engagement looking to push specific initiatives that would improve their clean water or climate change profile. The fact that the company scores strongly on many S- or G-related measures will matter less than it does in today's integration approach as investors may choose to forego making allocations to S- or G-linked themes altogether.

This ability to link the allocation of capital to the specific theme and KPIs the investor is looking to see improve should enhance the efficacy of ESG investing and move the industry away from just managing the headline risk around these concerns. It should also reduce the ability of companies to rely on a blended ESG score that somewhat "games" the system by equal-weighting categories. In the future, having excellent S- and G-scores while doing little to improve their E-scores (or vice versa) might be less effective at preserving a company's investor base.

Public equity ESG investing is likely to be one of the main areas to evolve in the coming period. Debates around whether public equities are the best asset class to use to effect ESG change may intensify even as the ability to signal E-, S-, or G-priorities via dual return equity strategies improves. Other investment instruments that offer a more structured option to contractually guarantee ESG priorities may take on increased importance. This topic will be explored in the next section.

"ESG will drive customized indices that match the needs of individual clients and the outcomes they want to achieve. The managers who are able to create those indices, accurately and at low cost, will be the winners." — APAC Asset Manager $500 billion – $1 trillion AUM

"There may be greater public ownership in developed markets for equities which may have strong ESG impact from mandated behavior for companies and asset managers." — NAM Hedge Fund

Section V: Building Multi-Asset Class Dual Return Solutions

Dual return equity products are likely to emerge as an early example of innovation as the industry pivots from managing the headline risk around ESG concerns to using their capital to incent changes in behavior that seek to mitigate pre-financial risks. The ability of equity shareholders to influence corporate behavior is diffuse, however, as the only tools they have are their votes and ability to actively engage with boards and management. Bonds and structured loans that can contractually build in metrics and goals are likely to provide a more direct route to ensuring change. Survey participants anticipate that these types of dual return products will gain traction and issuance is already rising to affirm that view.

Combinations of equities and bonds in multi-asset class solutions are one of the fastest growing areas in the investment management industry at present. The launch of dual return multi-asset class solutions (MACS) may emerge as managers gain understanding about how to manage funds to achieve both financial and non-financial returns. Construction of such instruments will require a new type of allocation calculation that finds the efficient frontier between financial returns, non-financial returns and risk. Allocating capital is likely to become a more nuanced skill set as certain instruments will insure the financial return more readily and other instruments and approaches will facilitate non-financial returns.

The same thematic lens required to build effective equity products may carryover to define the solutions space. For wealth and retail clients, dual return MACS are likely to offer a way for investors to express a broader set of needs that incorporate their financial goals as well as their personal values. Dual return MACS could thus be an important part of the industry adoption of tailored solutions.

For institutional investors that are likely to utilize these products to enhance their risk management and fulfill their expanding view of responsible asset ownership, dual return MACS are likely to look beyond publicly traded equity and bond offerings to include a larger share of alternatives, private companies and real assets. These strategies can use expanded investment techniques or the ability to influence the contract terms of deals to concentrate the pre-financial risk mitigation. For those investors able to co-invest in private assets, there is an additional opportunity to be part of the co-creation of non-financial returns and to own the resulting data that would be created by such assets.

Pivot to Bond & Metric-Linked Assets to Better Achieve ESG Goals

Though equity strategies today dominate the ESG space, there are limitations on how effective dual return products in this sphere may prove in terms of reducing pre-financial risks. Survey participants widely expected investors to increase their utilization of bond and structured loan products that align their terms to specific E-, S-, or G-goals, especially those that can link financial incentives or disincentives to their achievement of such goals.

Dominance of Equity Strategies Limits Industry Attempts to Mitigate ESG Risks

The most widespread sustainable investing practice today is incorporating ESG considerations into analysis of publicly listed equities. As shown in Chart 5.1, public equity accounts for over half (51%) of ESG-aligned AUM. In 2019, 54% of funds in the market that considered ESG were equity funds, covering U.S., international developed, and emerging markets.[1]

Investors and their related stakeholders have begun to question whether this equities-heavy strategy truly creates an opportunity for non-financial returns.[2] Survey participants noted that while asset managers can easily integrate ESG considerations in their financial models, the way in which they are utilizing such measures offers little opportunity to create measurable non-financial returns. Indeed, survey participants noted that many of the current investment dollars focused on ESG equity strategies are simply addressing the headline risk of these variables and they concede that even companies that they choose to negatively screen out of their portfolios are still receiving investment dollars.

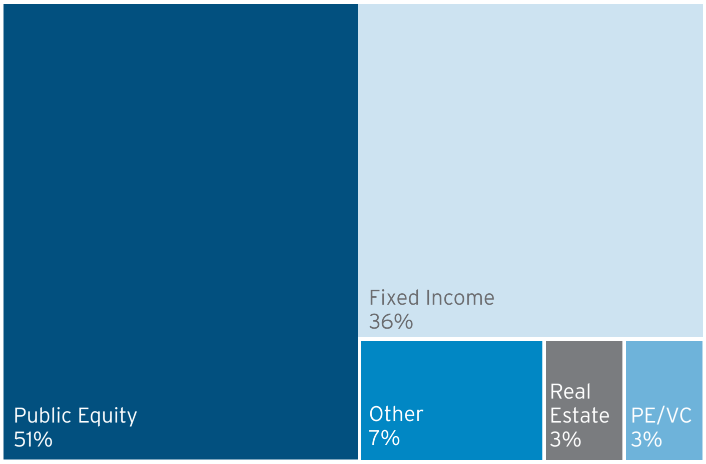
One notable example of this limited ability to influence corporate change in the primary markets has risen around carbon emissions. A 2020 study by The Economist analyzed emissions exposure from 5,000 publicly listed companies that account for approximately 90% of the value of the world's stock market, finding that publicly listed firms—excluding those that are state controlled—account for 14%-32% of the world's total emissions. Accordingly, the study concluded that fewer than 25% of industrial emissions come from companies that can be influenced by investors' activities in equities markets.[3]

1 "The Number of Funds Considering ESG Explodes in 2019", John Hale, Ph.D., CFA, Morningstar, March 30, 2020, https://www.morningstar.com/articles/973432/the-number-of-funds-considering-esg-explodes-in-2019

2 "Can You Really Make an Impact in Listed Equities?", Johanna Köb, Ivo Luiten, Tim Macready, Jacob Messina, and James Purcell, Environmental Finance, October 21, 2019, https://www.environmental-finance.com/content/analysis/can-you-really-make-an-impact-in-listed-equities.html

3 "The Trouble With Green Finance: Green investing has shortcomings", The Economist, June 20, 2020, https://www.economist.com/leaders/2020/06/20/green-investing-has-shortcomings

Chart 5.1: Breakdown of ESG Aligned AUM by Asset Class 2018: $30.7 Trillion



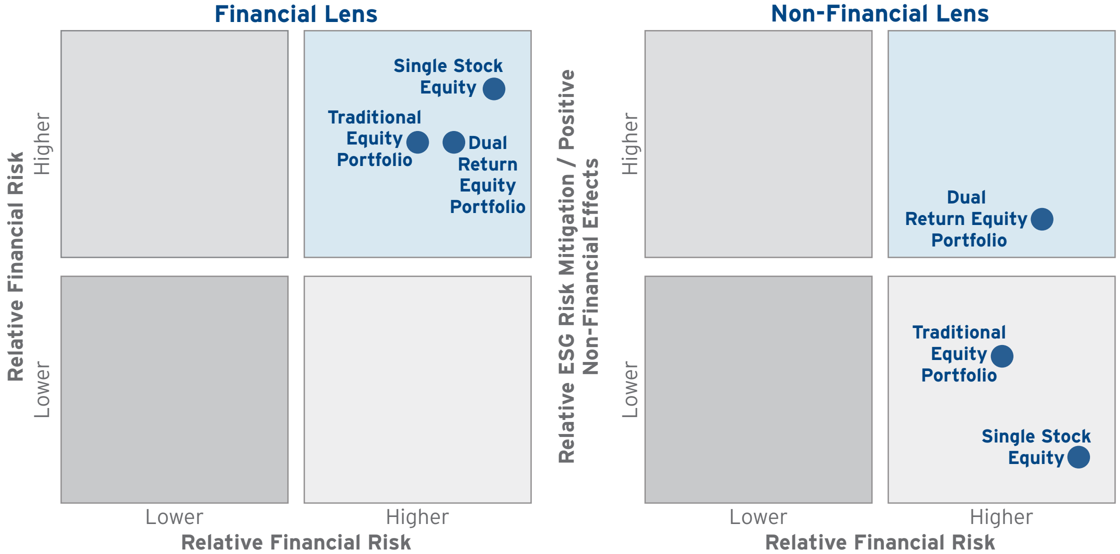
Source: "2018 Global Sustainable Investment Review", Global Sustainable Investment Alliance, 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

Accordingly, while the ratio of equity risk to reward is among the highest for investors focused solely on financial return, those seeking dual returns may see equities as a less impactful allocation. Survey participants highlighted that large, globally diversified companies engage in such a multitude of business activities that it is nearly impossible to capture the net effects of those positive and negative outcomes at a corporate level, represented by a single listed equity. Because of that, participants highlighted a second point that disclosure against those activities becomes nearly impossible, making it challenging to commit to a repeatable, institutionalized disclosure or reporting process that could tie capital allocation to net effects and non-financial outcomes.

Investors may begin to weigh the fact that a single equity or equities portfolio may offer some of the highest financial returns per unit of risk, but significantly less value in terms of ESG returns or ESG risk mitigation as illustrated in Chart 5.2. In contrast, a dual-return equity portfolio—constructed with the E, S, and G, sub thematic considerations driving the selection of the investment universe as introduced in Section V—might instead offer a higher ESG risk mitigation per unit, while still offering a similar financial risk per unit.

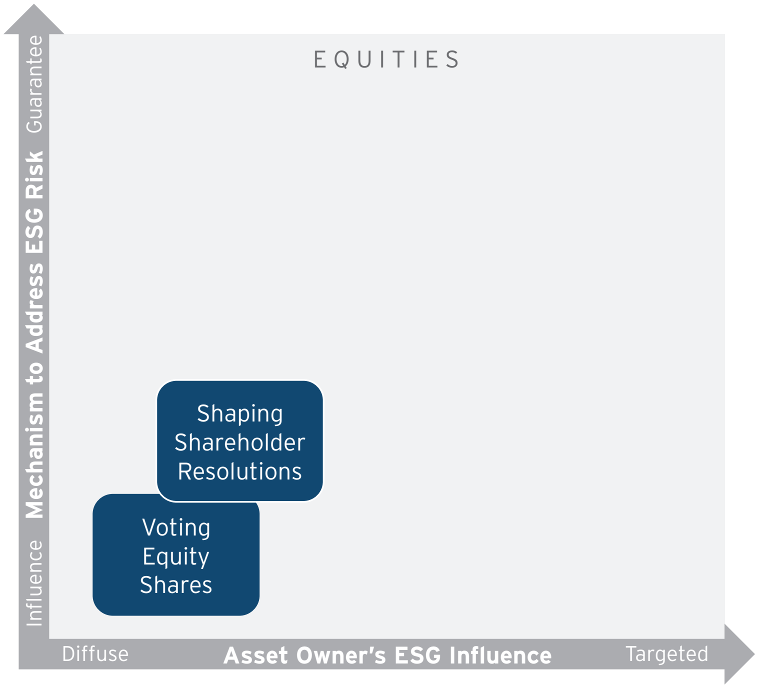
Ownership of shares in a company entitle the shareholder to vote on company resolutions and depending on how active the asset owner and investment manager choose to be, may suggest and build support for shareholder resolutions as shown in Chart 5.3. This pits the ESG-motivated asset owner and investor against other shareholders that may have competing ESG or non-ESG priorities and concerns. The power of being a shareholder, even in a dual return equity fund, thus offers only a diffuse ability to mitigate ESG risks.

Chart 5.2: Asset Ownership Profile: Financial Return, Financial Risk & ESG Risk Mitigation



Source: Citi Business Advisory Services

Chart 5.3: Investor Options to Influence Corporate Behavior



Source: Citi Business Advisory Services

Investors are therefore recognizing that to achieve their targeted ESG-related goals and mitigate their most pressing ESG risks, they may need to look at financial instruments outside of equities.

Contractual Terms in Bonds and Structured Loans Enhance Focus on ESG Risks

Since contractual terms are spelled out in both bond and structured loan investments, by choosing initiatives that fit within the ESG framework or buying "Green" or "Social" bonds, asset owners and their investment managers are able to be more targeted in their use of investment capital and have more certainty that their investment capital will help mitigate some degree of ESG risk.

Chart 5.4 illustrates how allocations to different asset classes beyond equities provide an avenue for more targeted ownership goals and greater guarantee that ESG-related risks will be addressed. Within bonds and structured loans, these options could range from specific project finance instruments with ESG benefits all the way through the use of green or social bonds, and even those that finance very specific E, S, or G initiatives.

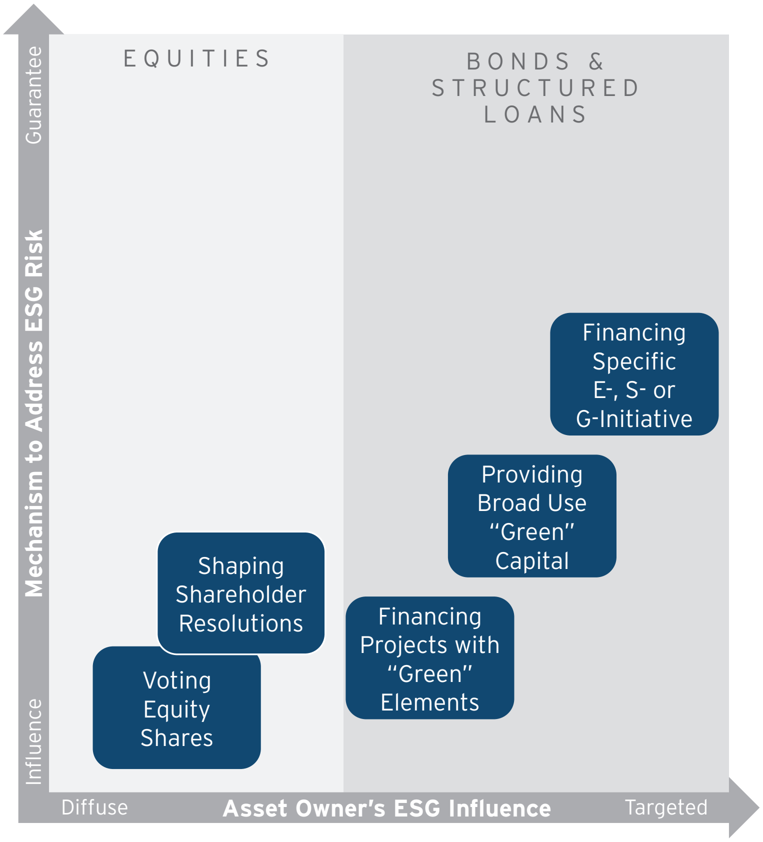
Fixed income investment managers have begun to utilize engagement and stewardship terminology that was historically associated exclusively with the equities space, highlighting the evolving opportunities around issuer engagement. A 2019 Russell investment study found that 71% of market practitioners with bond-only offerings claim they often or always discuss ESG topics when they interface with companies they are invested in.[4]

Survey participants noted, however, that corporate fixed income ESG-related engagement often yields results more quickly and measurement standards are more mature in the private sector. There are examples emerging of *government-issued* green bonds—where the covenants specify the usage of the proceeds for transition projects within specific government ministries, e.g., transport, agriculture—but they are relatively recent and analytic standards such are SASB are much more well developed for corporates. These limited examples[5] of earmarking the capital raised from an individual bond issuances for specific E or S-related projects are analogous to the way that the proceeds of a specific new tax is sometimes earmarked for a certain purpose.

ESG-related fixed income issuances are rapidly growing, as highlighted in Chart 5.5, with a number of structured loan and bond categories now looking to deliver ESG benefits. These instruments raise a pool of money that has restrictions on how it can be utilized, but the mandates are typically at the company's discretion.

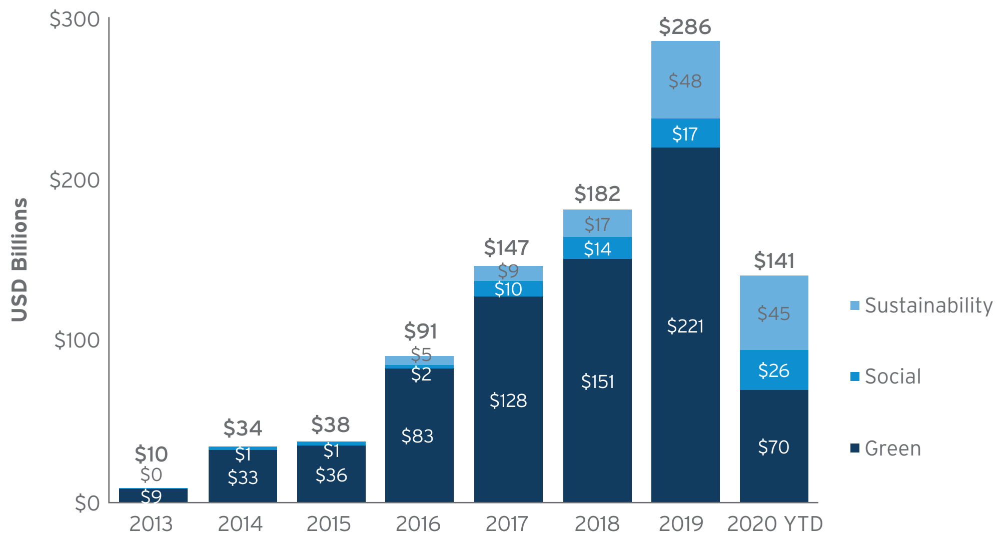
4 "2019 ESG Survey", Puneet Thiara, Russell Investments, September 5, 2019, https://russellinvestments.com/us/blog/2019-esg-survey
5 "Sovereign Green Bonds Briefing", Climate Bonds Initiative, 2017, https://www.climatebonds.net/files/files/Sovereign_Briefing2017.pdf

Chart 5.4: Investor Options to Influence Corporate Behavior



Source: Citi Business Advisory Services

Chart 5.5: Green, Social, and Sustainability Bond Issuance



Source: Citi, Dealogic, updated as of May 18th 2020

- ***Green Bonds:*** While green bonds have been issued for over 10 years, they have only recently begun to register significant AUM growth with 2019 setting a record of $221 billion in issuances. Green bonds' purposes are expanding—alternative energy remains the leading funding purpose, however, issuers are now using proceeds for everything from retrofitting buildings to comply with green standards to addressing climate adaptation.[6] Transition or "transformation" bonds in this space help issuers fund a movement way from environmentally damaging "brown" projects to greener operations or projects.

  Newer green bond structures are also emerging. Denmark's Central bank is exploring splitting a green bond into a traditional instrument plus a green certificate that could be traded separately, potentially increasing liquidity for the underlying sovereign bond and portending the possible future evolution of exclusively green marketplaces.[7] The United States' first green bank (The Connecticut Green Bank) is planning a 2020 issuance of "mini green bonds" with $1,000 face value, intended to democratize access to green issuances which echoes a larger trend in the industry towards bringing sophisticated instruments downstream to individual investors.[8]

- ***Social Bonds:*** Social bonds are less well-known, but growing in issuances quickly, especially as a funding response to address the COVID-19 crisis. These instruments focus on non-environmental impacts, including issues like affordable housing, and access to finance, education, or health care. Investors have typically sought these instruments from sovereigns however, corporates are becoming more active in social issuances.

  Government agencies became the dominant issuers of social bonds in 2019 with a +10.5% increase in share, though corporates also increased their share to 13% in 2019 from 3% the previous year.[9] Social bonds are likely to occupy an increasing share of issuances in 2020 and beyond; the African Development Bank launched a $3 billion social bond called "Fight COVID-19," which was the world's largest dollar-denominated social bond transaction to date.[10]

- ***Sustainability Bonds:*** These bonds' proceeds can fund both environmental and social goals, and are expected to provide additive value for a target population. While they are the smallest component of this market, issuance is growing, and reached $26 billion in the first half of 2020.

A 2018 study by Cerulli found that inflows into ESG fixed-income products surpassed $11.4 billion over the preceding two years, though there remained a shortage of ESG fixed income product and structured credit, reflecting that demand for these instruments exceeded current market supply.[11] The shortage of available product to meet specific E, S, and G needs has encouraged investors to consider how other types of debt financing deals can be examined to determine whether the capital they have raised will be deployed in a manner that can provide ESG benefits.

- ***Municipal Bonds:*** While not expressly designed to meet ESG goals, municipal bonds offer investors a path to ESG risk mitigation. A 2019 study by Citigroup analysts found that approximately $2.9 trillion of currently outstanding municipal bonds could be classified as ESG-friendly investments.[12] Municipal bond maturities often exceed 20 years, making them popular with investors seeking long-dated instruments. Investors in European markets are increasingly allocating capital to the taxable issuances of municipal bonds, particularly those for green infrastructure projects given that these opportunities are limited in European debt markets.

- ***Blue Bonds:*** One of the newest additions to the rainbow of bond offerings includes blue bonds—fixed income issuances designed to conserve and sustainably use the ocean, seas, and marine resources for sustainable development. While issuances and AUM are still low and in the early days, the value of key ocean assets is an estimated $24 trillion, with an annual value of goods and services at $2.5 trillion—making it the world's 7th largest economy and a potential future opportunity to expand E-focused fixed income offerings.[13]

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6 "Green Bonds Growing Bigger and Broader", Meghna Mehta, MSCI, April 24, 2020, https://www.msci.com/www/blog-posts/green-bonds-growing-bigger-and/01775697227
7 "Green Issuance", Danmarks NationalBank, May 27, 2020, https://www.nationalbanken.dk/en/governmentdebt/IR/Pages/Model-for-sovereign-green-bonds.aspx
8 "Connecticut Green Bonds Offer Residents a Chance to Fund War on Climate Change", Lisa Prevost, Energy News Network, July 9, 2020, https://energynews.us/2020/07/09/northeast/connecticut-green-bonds-offer-residents-a-chance-to-fund-war-on-climate-change/
9 "A Pandemic Driven Surge in Social Bonds Show Sustainable Debt Market is Evolving", Erin Boeke Burke, Noemie De La Gorce, and Lori Shapiro, S&P Global, June 22, 2020, https://www.spglobal.com/ratings/en/research/articles/200622-a-pandemic-driven-surge-in-social-bond-issuance-shows-the-sustainable-debt-market-is-evolving-11539807
10 "Pandemic Spurs Investor Interest in Social Bonds", Sarah Min, Chief Investment Officer, June 24, 2020, https://www.ai-cio.com/news/pandemic-spurs-investor-interest-social-bonds/
11 "Demand for ESG Fixed Income Instruments Exceeds Supply", Ben Hernandez, ETF Trends, November 26, 2018, https://www.etftrends.com/demand-for-esg-fixed-income-products-exceeds-supply/
12 "Why ESG Investment and Municipal Investment May Be Two Sides of the Same Coin", Citi Research, July 23, 2019, https://www.citivelocity.com/t/r/eppublic/1sZnU
13 "The Blue Economy, The Global Environmental Facility", GEF Briefing, 2018, https://www.thegef.org/sites/default/files/publications/GEF%20Assembly_BlueEconomy%20Factsheet_6.19.18.pdf

As interest in ESG has grown, there has started to be a growing number of new bond and loan issuances that focus on a specific E-, S-, or G-linked initiative rather than just looking to raise a broad pool of money for opportunistic deployment against wider ESG goals. For example, BNP Paribas began pitching a new type of structured note to private banking clients, with the twist that it would plant a tree for every thousand euros of these ESG-aligned products sold. As of 2019, the French bank planted one million trees after selling €1bn of the notes.[14] In our thinking, green bonds were seen as higher financial risk than investment grade because the more narrow focus of how the money is deployed may limit secondary interest in trading the bond and make pricing less robust. Meanwhile, municipal bonds were seen as lower risk because the tax advantages may create more interest even if the project itself is seen as less successful.

These types of investments may not offer as much financial return as equity portfolios and single stock equities, but they have a lower risk profile and can actually offer a more effective route to mitigating ESG risks. This is an important consideration for products that are looking to deliver dual returns. As previously mentioned, these considerations essentially represent a re-ordering of how investors may come to view certain financial instruments relative to the non-financial ESG outcomes achieved per unit of risk, compared with traditional financial outcomes per unit of risk metrics.

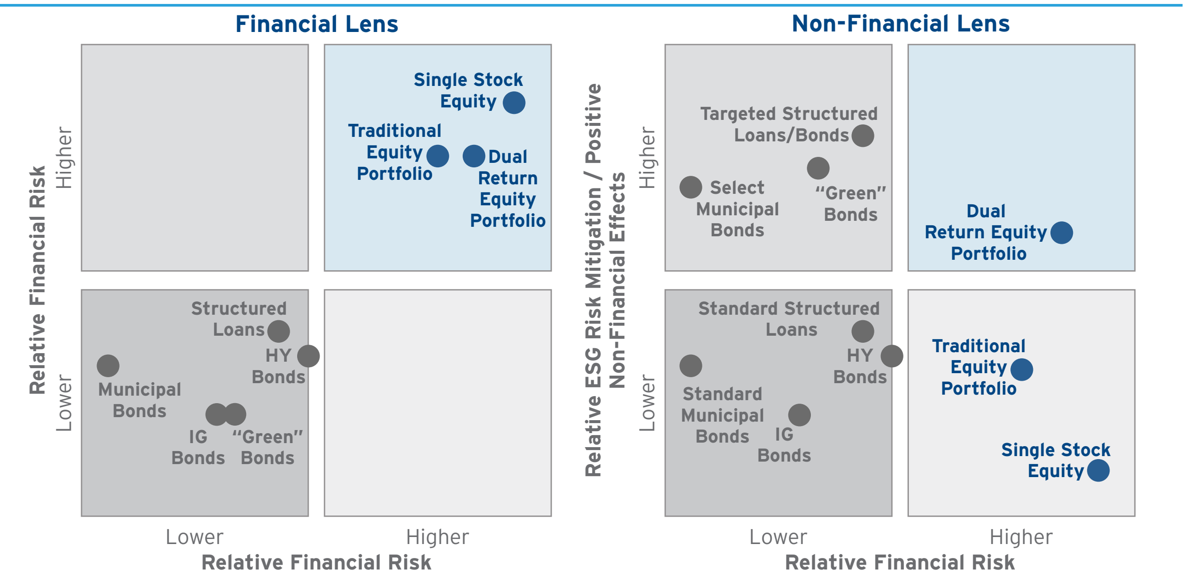
This is illustrated in Chart 5.6. As shown, some of the products that have historically been in a quadrant of lower financial returns and lower risk per unit measurements, may actually begin to become the very instruments that now offer higher risk mitigation against ESG objectives for equivalent measures of financial risk.

Emergence of Metric-Linked Sustainable Bonds Portend New Investment Direction

A new category of sustainable bonds ties the achievement of a specific E-, S-, or G-linked metric to the interest rate or coupon payment of the bond, ensuring that investors achieve their desired ESG risk mitigation or providing them an enhanced financial return if the ESG risk mitigation falls short of the targeted levels. These products are the most direct indication yet that the focus of investing is broadening out and that there is a growing audience interested in using their capital to achieve both financial returns and pre-financial risk mitigation. Historically found in private markets, ESG-linked loans reached $62.4 billion in 2019, up from $42 billion in 2018 and are now giving way to a more public market translation through sustainability-linked bonds.[15]

These new sustainability linked or UN SDG-linked bonds are a type of bond instrument with financial or structural characteristics that change depending on whether or not the issuer achieves a pre-defined sustainability or ESG objective. In late 2019 Italian energy company Enel issued the first SDG-linked bond—a five-year instrument with KPIs around increasing its renewable energy total installed capacity to at least 55% from 46% as of H1 2019. EY will conduct a one-time review of the KPI in 2021, as part of their annual audit. Should Enel not achieve the objective, the coupon can increase by +25 bps. Enel reported $4 billion of demand for its $1.5 billion deal, noting that it saved them 20 bps on pricing compared to a traditional bond.[16]

Chart 5.6: Asset Ownership Profile: Financial Return, Financial Risk & ESG Risk Mitigation



Source: Citi Business Advisory Services

14 "Product Snapshot: Exceed, BNPP Launch Reforestation Certificate in Sweden", Charlotte Fyle, SRP, August 28, 2019, https://www.structuredretailproducts.com/news/details/75379

15 "ESG Debt: A User's Guide to the Ever-Growing Menu of Bonds and Loans", Jacqueline Poh, Bloomberg, October 16, 2019, https://www.bloomberg.com/news/articles/2019-10-16/esg-debt-a-user-s-guide-to-ever-growing-menu-of-bonds-and-loans

16 "Green Price Ratchet Bonds Will Soon Be Everywhere", John Hay, Global Capital, September 10, 2019, https://www.globalcapital.com/article/b1h381zt75h6vx/green-price-ratchet-bonds-will-soon-be-everywhere

This structure differs from green bonds because there are no restrictions around the use of proceeds—a signal that investors and issuers are prioritizing the ESG-related goals, allowing for flexibility in terms of how the issuer achieves the goal. This is a meaningful difference from its green bond predecessors because this structure has the ability to scale more easily compared to strictly green instruments and would more easily apply to corporate issuers, who today are a small share of the overall green bond market.

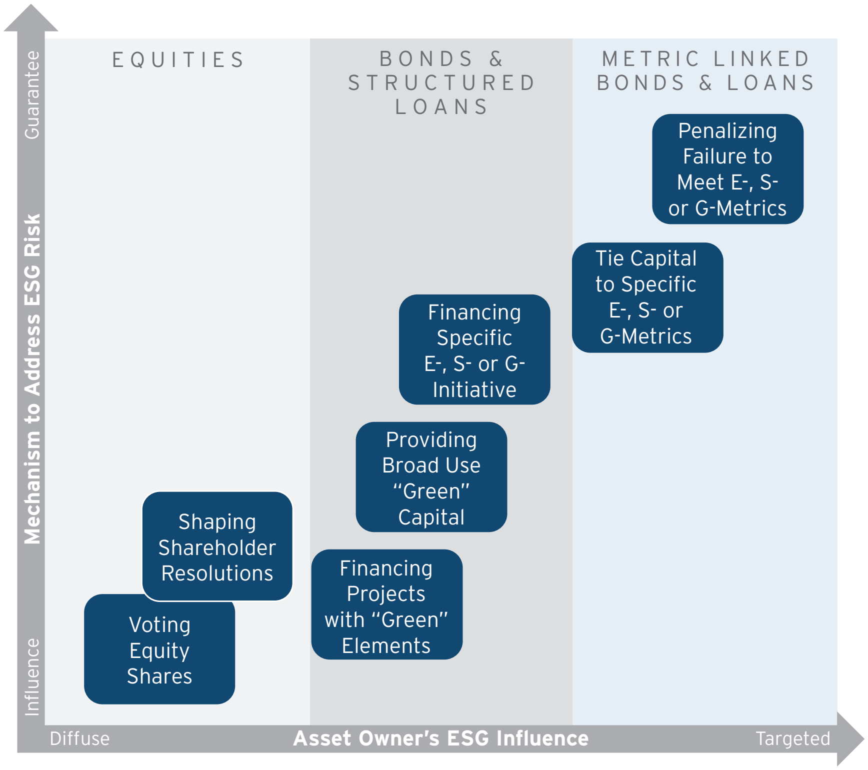
As these new structures are still in their early days, challenges remain around technicalities and potential future secondary market liquidity. For example, the European Central Bank is unable to buy bonds with coupon pricing risk, including step-ups, under its Corporate Sector Purchase Programme. Pricing curve construction may be difficult if different sustainability-linked bonds from the same issuer have different KPIs, and new issuers may have challenges determining how to appropriately create realistic and achievable "stretch goals" with their UN SDG objectives that still warrant a coupon change.

These product innovations, however, clearly provide a more direct tie to being able to contractually guarantee ESG risk mitigations since most corporations or government entities will seek to avoid the financial penalties associated with not fulfilling these goals. Chart 5.7 highlights how these emerging metric-linked bonds and loans represent the most targeted way for investors to influence corporate behavior and the greatest opportunity guarantee both financial and non-financial outcomes.

Given the potential penalties, these products represent more financial risk to the investor's portfolio than comparable bond or loan products. By raising the interest rate or the coupon if the bond or loan does not meet its E-, S-, or G-linked goal, the implied price of the instrument may deteriorate. Similarly, however, the guarantee around the non-financial return may position these instruments as very important tools.

Lastly, growth in the availability of such assets is helping to create a more robust environment for other ESG investment strategies, including the ability for investors to buy protection or write hedges against their investments. These derivatives are helping further ESG adoption, bringing both greater liquidity to the market and more accessible pricing. Goldman Sachs Group Inc. and JPMorgan Chase & Co. are among banks that have started trading credit-default swaps referencing bonds with high sustainability credentials.[17] Italy's Banca IMI, the investment banking division of the Intesa Sanpaolo Group, has also incorporated these ideas into new facilities, writing a sustainable interest rate hedge for Italian railway company Italo, winning Banca IMI Bank Deal of the Year in the 2020 Energy Risk Awards.[18]

Chart 5.7: Investor Options to Influence Corporate Behavior



Source: Citi Business Advisory Services

17 "Goldman, JP Morgan Among Banks Leading New ESG Swaps", Katie Linsell and Alistair Marsh, Bloomberg, June 25, 2020, https://www.bloomberg.com/news/articles/2020-06-25/goldman-jpmorgan-among-banks-trading-new-esg-credit-swaps-gauge

18 "Bank Deal of the Year: Banca IMI", Mark Nicholls, Risk.net, June 11, 2020, https://www.risk.net/commodities/7560171/bank-deal-of-the-year-banca-imi

"There will be a push to increase investments in products like Green Bonds. Europe has been on the forefront from a very long period of time but we have seen Asia also pick up in the recent times." — EMEA Asset Manager <$500 billion AUM

"For some of these companies the active ownership is equally as important as the financial outcome of the investment decision. You expect that the companies who do well on ESG are those who do well on financial terms and provide for a better world." — EMEA Asset Manager <$500 billion AUM

"If you look at the ESG initiatives, they always start on the equities-side — on that part of the balance sheet. However, the most impactful movement is on the debt-side; that is where the emphasis should be." — EMEA Asset Manager <$500 billion AUM

"There is already a move from equities into credit and private markets for the ESG phenomenon. In Private markets, specifically real assets, they have embedded sustainable investing policies for years. Asset managers are built around public markets though, and tend to look at privates through the eyes of asset owners." — EMEA Asset Manager <$500 billion AUM

Portfolio Construction to Achieve Financial and Non-Financial Goals

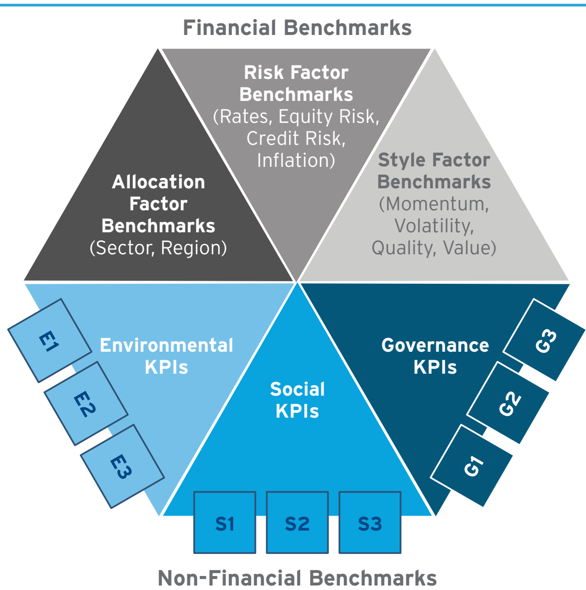
Increasingly, investors are likely to find a growing array of products across equities, bonds and structured loans that are able to provide both financial returns and a reduction in pre-financial E-, S-, or G-risk factors. This suite of building blocks may be combined by asset owners to create their own diversified portfolios. However, the direction of travel in the investment management industry in recent years has been toward the creation of multi-asset class solutions (MACS) that rely on the investment manager to determine the portfolio construction as well as the security selection. Creating dual return MACS is a more difficult proposition than creating single asset class dual return options.

As just noted, equity strategies offer the potential for higher financial returns, but offer a more diffuse and indirect option to influence company behavior and improve non-financial KPIs. Certain types of bond or loan strategies tend to have lower financial returns, but the ability to write terms into the contracts of the instruments to better target the achievement of non-financial goals. This dichotomy sets up a challenge in terms of how to create multi-asset class portfolios and determine the right mix of assets to meet both financial and pre-financial goals.

Leading with the E-, S-, or G-Linked Goals

Just as using the E-, S-, or G-linked theme to inform the selection of the optimal equity stock universe helped align the portfolio to better address pre-financial risks, a similar approach might apply at the solution level. Investment managers may begin to expand their concept of risk-budgeting to accomplish this aim. Rather than looking solely at financial risk determinations, E-, S-, and G-KPIs may also emerge as additional factors to consider in determining a portfolio's construction and benchmarks. This is shown in Chart 5.8.

Chart 5.8: Identifying Desired Financial & Non-Financial Exposures



Source: Citi Business Advisory Services

Today, investment managers look at a wide variety of financial factors in determining their portfolio holdings and exposures. As noted back in Section II, these span allocation factors that determine the region and potentially the sector that the portfolio will benchmark itself against; risk factors such as how much inflation risk, credit risk, equity risk or interest rate sensitivity that the portfolio might tolerate, and various style factors that inform the investing approach. Style factors can be fundamental in nature helping to inform the types of securities that the portfolio will focus upon (e.g.,, growth, value, quality) or they can be technical in nature to help inform the timing and sizing of positions (e.g., momentum or volatility).

To create a dual-return multi-asset portfolio, a similar focus may be required to balance the pre-financial risk priorities of the portfolio. Investors will have to pick the primary E-, S-, or G-theme that will be used as the "benchmark" for the non-financial focus of the total portfolio. This could be a single theme such as "Climate Change" or it could be a set of related themes. For example, a "City of the Future" portfolio could support a cluster of E-, S-, or G-themes. Using the U.N. SDGs as a template, a sample cluster might include "Sustainable Cities and Communities", "Clean Water and Sanitation", "Affordable and Clean Energy", "Zero Hunger", "Quality Education" and "Responsible Production and Consumption".

Thematically, each of these topics could be seen as being mutually reinforcing. In an optimal scenario, the companies or projects chosen to improve the risks related to one theme in the cluster might additionally have spillover positive impacts on other theme boxes.

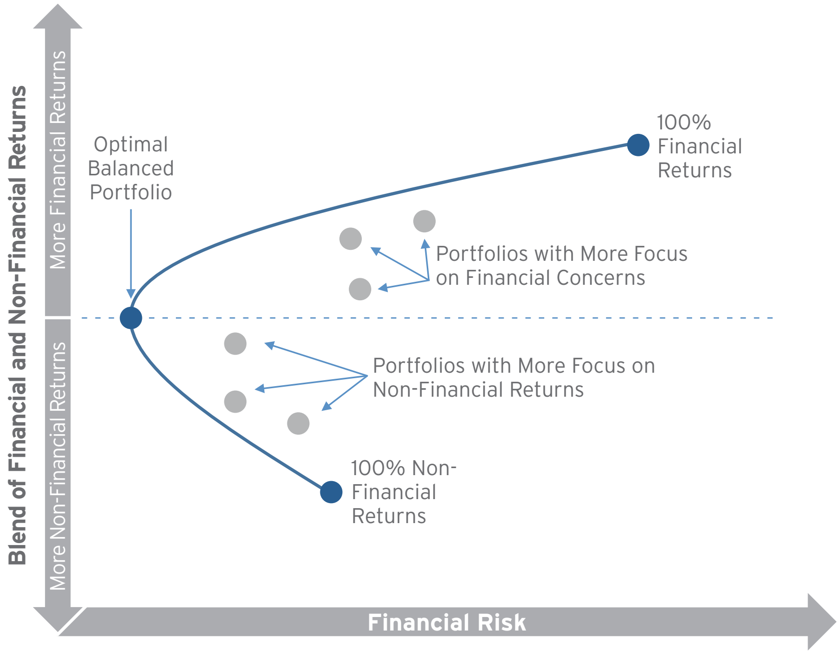
Having chosen the lens through which they might construct the portfolio, an investment manager may then need to make two additional determinations related to pre-financial risks.

First, how to divide the allocation strategy between maximizing financial and non-financial returns to obtain the optimally-balanced portfolio. In a sense, this is a new type of efficient frontier calculation. "What is the portfolio's optimal mix of financial return, non-financial return and financial risk?" Just as the industry has traditionally viewed the "60% equities/40% bonds" portfolio allocation as the tangency portfolio under Modern Portfolio Theory and the Capital Asset Pricing Model, there is likely to be a new "Dual Return" tangency portfolio. This concept is illustrated in Chart 5.9.

For simplicity's sake, we will set the initial dual return optimal balance portfolio allocation at 70% focused on financial returns and 30% focused on non-financial returns.

Having determined that 30% of the total investment capital will be used to prioritize or tilt the portfolio to achieve the non-financial returns, the investment manager may then choose a set of building blocks related to the E-, S-, and G-theme or theme cluster. Such allocations are likely to overweight allocations to bond and structured loan products that offer a stronger contractual guarantee of returns and underweight allocations to the dual-return equity options since those allocations only allow the investment manager to signal their stewardship concerns to the companies in the portfolio in a diffuse manner that is not as certain to improve the non-financial KPIs.

Chart 5.9: Finding the Dual Return "Tangency" Portfolio



Source: Citi Business Advisory Services

However, for the other 70% of the capital that is focused on the financial returns, the opposite is likely to be true. More of the capital will be allocated to equity strategies where the financial risk adjusted returns are likely to be higher. To concentrate the potential financial return, allocations may be directed to high conviction strategies that concentrate the equity risk. This would further a trend that is already underway in response to the shift from active to passive funds. A conceptual view of the new dual-return MACS portfolio is illustrated in Chart 5.10.

At a total portfolio level, the allocation may still look very similar to a traditional blended asset class fund (e.g., 60% equities/40% bonds), but the types of equity strategies that are utilized and the types of bond strategies that are selected may be much different than in a traditional configuration.

Moreover, the factor models that the investment manager monitors to inform dynamic risk adjustments are likely to consider not just the financial factors that are being used as benchmarks, but the non-financial E-, S-, or G-KPIs as well. At times, the manager may need to re-balance the allocation mix and shift funds from strategies targeting financial to non-financial returns (or vice versa) to ensure the best performance against both sets of benchmarks.

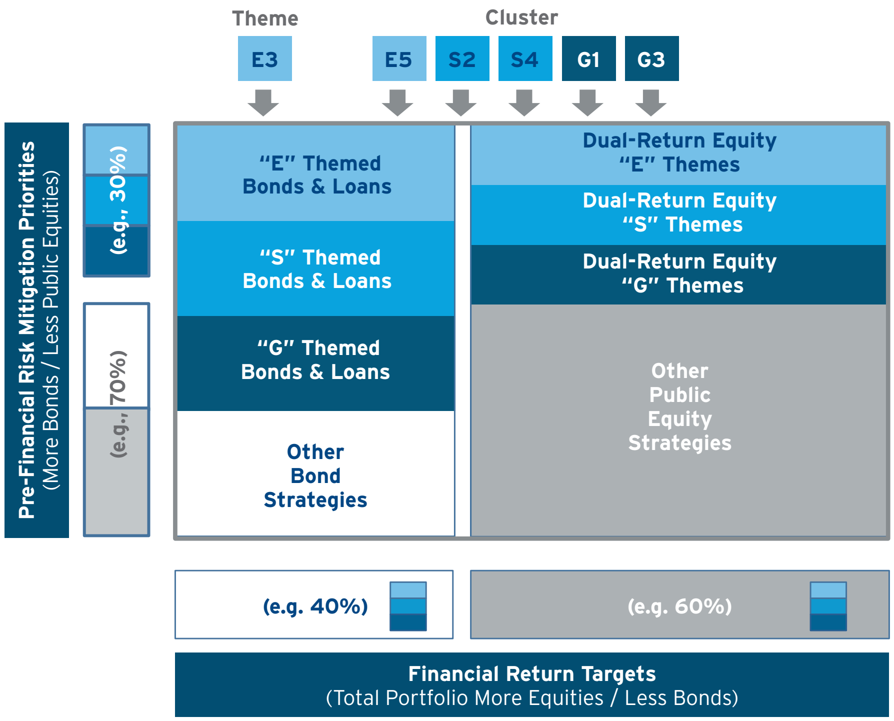
There could also be guardrails for the portfolio around both financial and non-financial factors. Just as a manager may rebalance the portfolio if volatility rises beyond a certain threshold, they may also be prompted to adjust the portfolio holdings if the KPIs around a non-financial measure such as "Zero Hunger" begins to deteriorate.

Retail and Wealth Dual Return Solutions

Dual Return MACS would align well with the set of solutions already available and in development for mass retail and wealth clients. Wave 1 solutions as outlined in our recent Industry Evolution 2020 report focus on asset allocation and creating diversified risk-adjusted returns as their primary design template and goal. These solutions encompass balanced funds, lifecycle funds and target date products. In recent years, portfolio construction templates have evolved to focus on delivering a broader set of potential return streams.

Wave 2 solutions have designed the allocation of capital to achieve specific investor outcomes. An entire menu of such options has emerged from capital protection to income generation to inflation protection and others. The number of potential model portfolios that can be constructed from this set of outcome-oriented funds is growing exponentially. Today, more than 10,000 model portfolios are being published by investment managers and these models are collectively guiding asset allocation and portfolio decisions for more than $2.7 trillion in assets.[19]

Chart 5.10: Multi-Asset Class Portfolio Construction for Dual Returns



Source: Citi Business Advisory Services

19 "Model Portfolio Market Reaches $2.7 Trillion USD, Growing 19% Annually", Broadridge, October 14, 2019, https://www.broadridge.com/press-release/2019/model-portfolio-market-grows-19-percent-annually

Dual return MACS could easily be considered a new type of outcome-oriented fund, but one where the secondary return relates to the investor's values, not just their financial outcome. In that sense, these products would mark an advancement away from offering just standard funds toward having a product range that begins to provide some configurability to allow the investor to build the portfolio around their personal preferences. This is illustrated in Chart 5.11.

Initially, these dual return MACS are likely to be created as a standard product with a fixed set of "choices" for investors to define the E-, S-, or G-themes that matter most to them. Since the options would be fixed, the product could still be offered in a fund wrapper. Over time, the dual return MACS are likely to move in tandem with the broader solution universe toward a more tailored set of holdings.

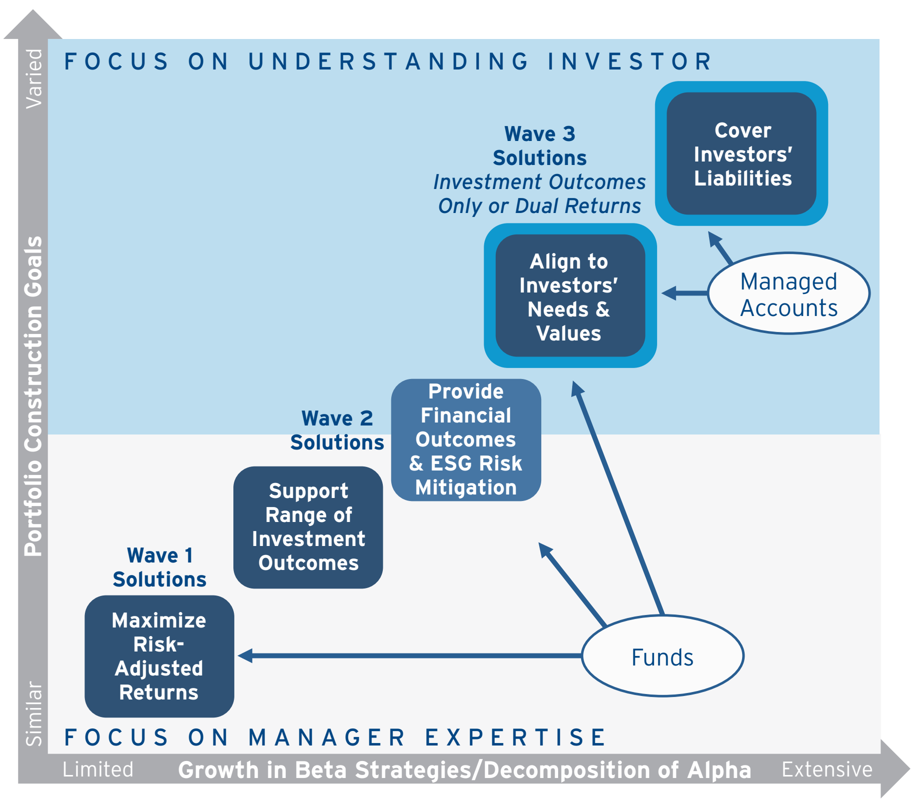
One of the major themes of our latest industry evolution report focused on the growing use of algorithms to adjust model portfolio holdings based on an investor's personal situation. Portfolio algorithms consider both the individual's assets and their liabilities to determine how to best adjust the portfolio holdings. Solutions already exist that can optimize the tax activities in the portfolio around the individual or filter portfolio holdings and reduce exposures where the individual already has excessive personal risk due to their employment.

While the delivery of these portfolio enhancements would be done mechanistically by algorithms, the experience to the end customer would feel tailored. Many survey participants discussed this trend as the industry moving toward "mass customization".

In our initial presentation of this trend, we saw tailored solutions being developed to consider the investor's needs, assets and liabilities. As dual return MACS emerge, the ability to look at the investor's ***values*** in addition to their needs, assets and liabilities could easily be modeled to provide investment managers the inputs they would require to target the E-, S-, or G-linked goals that the individual might be looking to achieve.

The delivery mechanism envisioned for these tailored Wave 3 solutions is via a separate account rather than a standard investment fund. The advent of fractional stock shares and the ongoing evolution of distributed ledger technologies and managed account platforms are all helping to lower the threshold of how much capital an individual would need to qualify for a managed account. The pivot in the industry toward offering more and more investment management via these vehicles is already underway and based on survey participant response, is likely to gain speed in the coming period.

Chart 5.11: Solution Development focuses on Investors' Personal Preferences



Source: Citi Business Advisory Services

Alternative and Private Assets Enhance Pre-Financial Risk Mitigation

Solutions are already delivered primarily via managed accounts for institutional and qualified investors. The configuration of those solutions, however, are more complex as they focus not just on traditional equity and bond strategies, but also incorporate a significant set of exposures to alternative and private investments. These strategies may prove especially effective in dual return portfolios given their profile.

Hedge Fund Strategies May Adapt to Deliver Non-Financial Outperformance

Many in the hedge fund industry have seen the ESG phenomenon play out primarily as a due diligence concern and see their adherence to ESG principles as "good house-keeping". Few managers have moved beyond standard negative screening or integration approaches. This is beginning to change.

Marshall Wace announced that they were looking to raise a $1.0 billion AUM fund focused on trading securities around ethical and environmental criteria. The offering will be part of the organization's flagship TOPS product that relies on interpretations of outside analyst views on securities. A similar approach is expected to be utilized in the new fund. The new fund will look to short securities with poor ethical or environmental ratings and buy securities with strong ESG characteristics.[20]

Alternative hedge fund investing strategies primarily use the same equity and bond building blocks available to long-only investors, but have a wider set of investment tools at their disposal to manufacture returns. These include the ability to lever long positions, short securities, utilize derivative exposures, create synthetic exposures, hedge positions and hold dry powder in reserve to enhance their market timing.

Armed with these capabilities, hedge funds may increasingly expand their product suite into the dual return space. Whether via equity, bond or structured loan products, hedge fund managers may have an opportunity to find additional "alpha" in their investment approach, both financial alpha and perhaps even a new type of outperformance measured by larger improvements in E-, S-, or G-linked KPIs than those realized by long only dual return investment strategies. Whether this new type of return warrants any incentive fee is uncertain, though certain "bonuses" could be envisioned for enhanced reduction of pre-financial risks.

Private Company and Real Asset Investments May Offer Best Dual Return Potential

Negotiations and oversight of private company and real asset investments are multi-faceted, contractually-bound and long-term in nature. As is already the case in the corporate banking sector, private fund managers are beginning to focus on non-financial risks in materially important sectors and tie access to capital to clear agreements set with target companies or real asset operators and their management about specific E-, S-, or G-linked goals.

In this regard, their ability to influence the reduction of pre-financial risks via their investment capital is on par with some of the most targeted bond and structured loan instruments as shown in Chart 5.12.

The nature of this type of illiquid investing allows the investment manager to make demands and lay out specific metrics to measure the achievement of their goals as part of the investment negotiation. Ongoing oversight of the investment also ensures that the terms are tracked, measured and considered as part of the normal course of business. Regardless of whether the manager remains engaged with running the asset's day-to-day operations or delegates their authority to an affiliate charged with oversight, the investment manager sets the tone to ensure fulfillment of the target measures. Company management is incented by enhanced payouts to meet the investment team's goals.

A 2019 PWC study found that 81% of private equity firms had adopted a responsible investment policy, with risk management as the primary driver.[21]

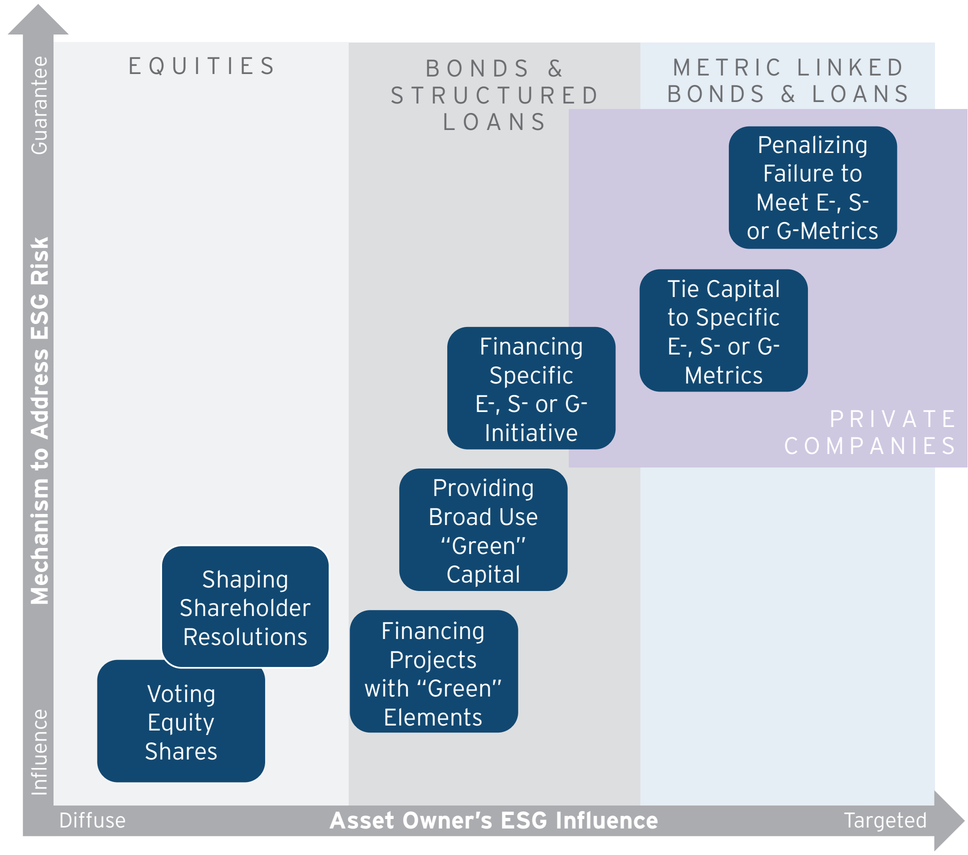
As such, these investments overlap with the most effective options available to investors to influence ESG risk and position these strategies on par with metric-linked bonds and structured loans. The return profile of these investments look quite different, however, as shown in Chart 5.13.

Private equity and real asset investing tends to offer the highest financial risk and return. This is because these assets tend to mature over a lengthened time horizon and are very capacity constrained in terms of investor access. Moreover, they are not registered securities, do not trade on any exchanges and are valued based on proprietary models that are hard to verify and replicate. Typically, it is only upon the exit of the investment that the actual value of the asset aligns to market forces, making these investments easier to hold in portfolios through periods of market volatility.

20 "Marshall Wace Targets $1.0 Billion for New ESG Fund", Kanishka Singh, Reuters, July 4, 2020, https://www.reuters.com/article/us-britain-funds-esg-marshall-wace/marshall-wace-targets-1-billion-for-new-esg-focused-fund-idUSKCN2450BJ

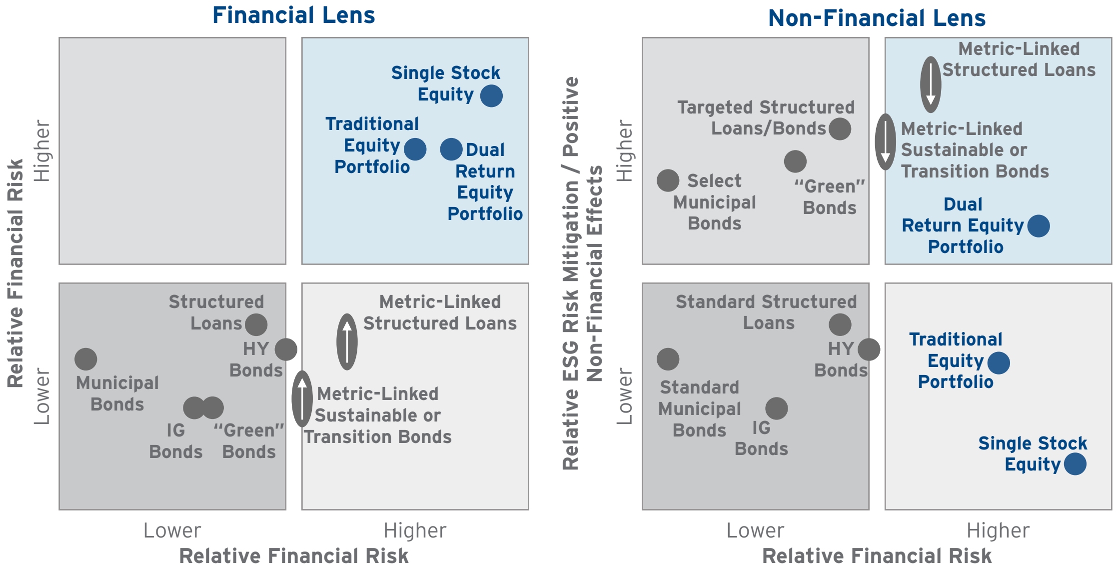
21 "Older and Wiser: Is Responsible Investment Coming of Age? Private equity Responsible Investment Survey 2019", Emilie Bobin, Phil Case, Joukje Janssen, and Will Jackson-Moore, PWC, 2019, https://www.pwc.com/gx/en/services/sustainability/assets/pwc-private-equity-responsible-investment-survey-2019.pdf

Chart 5.12: Investor Options to Influence Corporate Behavior



Source: Citi Business Advisory Services

Chart 5.13: Asset Ownership Profile: Financial Return, Financial Risk & ESG Risk Mitigation



Source: Citi Business Advisory Services

ESG considerations are also more frequently highlighted at the exit stage. The PWC report went on to note that 46% of private equity firms now consider ESG upon exit, up from 36% in 2016. GPs increasingly describe ESG improvements made during the hold period, through enhanced vendor due diligence on topics ranging from supply chain and procurement to overall governance.[22]

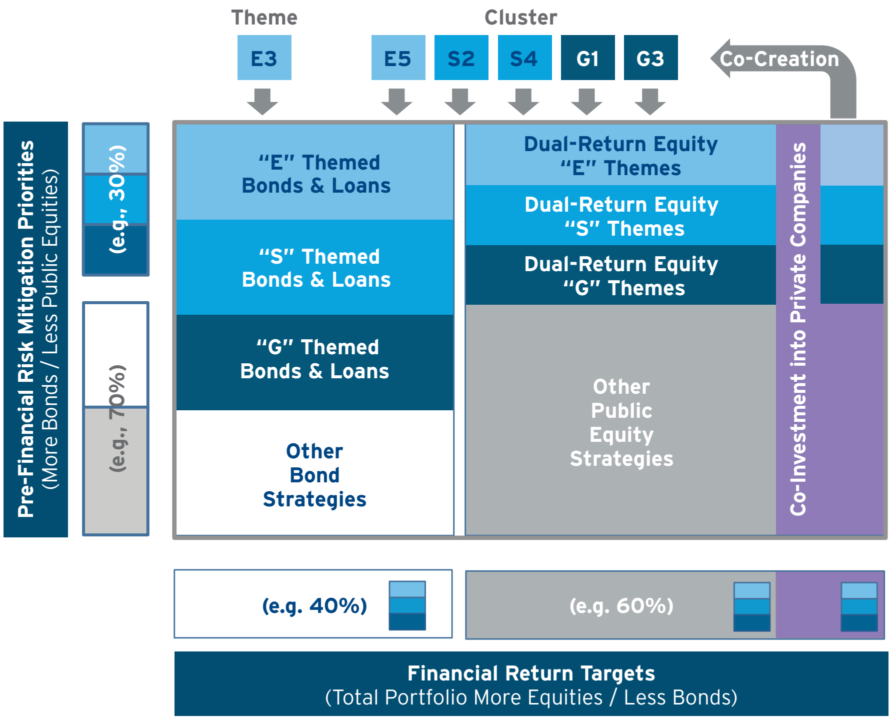
Private companies and real assets are also among the highest performing assets to realize ESG risk mitigation per unit of ownership. This is because the investor is actually influencing how the company or the asset is run and they hold the financial levers to incent specific behaviors.

Institutional investors are thus likely to turn to private funds for dual returns and replace a portion of their equity exposure with this type of allocation. This mirrors a trend already in place for general equity exposure that is shifting to illiquid funds. The revised portfolio configuration illustrated in Chart 5.14 shows how private assets might fit in with the broader set of portfolio holdings for dual return products.

The ability to influence the achievement of non-financial risk mitigation is also likely to accelerate the other trend in the private investment space—a move away from investment funds to more interest in co-investing alongside the investment manager. This approach allows the asset owner to directly influence the terms of the deal and the measures used to assess its success. Using this input to shape the agenda of non-financial priorities would actually allow the investor to transmit their priorities directly to the company or asset's management team. In a sense, they would be co-creating the non-financial return streams they are looking to capture.

Moreover, the E-, S-, and G-related data being produced as part of the co-creation effort could be co-owned by the investors and sold to help inform ESG scoring for private assets. The gap here is substantial although Preqin now offers a scoring methodology that combines country-level assessment with industry-specific data related to an asset's headquarters.[23]

Chart 5.14: Multi-Asset Class Portfolio Construction for Dual Returns



Source: Citi Business Advisory Services

22 Ibid
23 "ESG Indicators: A common language of responsible investing for private capital markets", Preqin, https://go.preqin.com/hubfs/Marketing/Email%20campaign%20assets/ESG%20Campaign/ESG_Indicators_Main.pdf?hsCtaTracking=8c220fae-6510-44bd-9f53-653e7cbf084d%7Cdd78793e-0985-4f3b-8631-f4551810af8a

Conclusion: Staging of ESG Evolution and Revolution

Throughout the course of this paper, we have laid out a case for why the current approach being used by investment managers to address ESG concerns is likely to evolve and push the industry to develop products that help to realize both financial returns and pre-financial risk improvements. This pivot reflects a shift from managing headline risk to building portfolios to effect change.

Initially, survey participants expect that changes in the product approach are likely to focus on better aligning the deployment of equity capital to desired E-, S-, or G-goals in order to improve the signaling about what priorities matter most to investors and what risks they are most anxious to neutralize or enhance. Similarly, targeted bond offerings and the development of structured loans are also likely to gain a growing share of the market, particularly if they link the contract terms to specific E-, S-, or G-metrics, as investors look to insure their portfolios in materially relevant sectors and promote corporate transitions. Glimpses of this enhanced approach are already emerging and could thus be seen as evolutionary.

A bigger, more revolutionary change may also be pending. Active management, particularly in the long only sphere, has been under assault for some time as the information available to market participants becomes increasingly standardized and as the mechanisms for delivering information become more democratized. Finding asymmetrical return opportunities in such an environment are more difficult and identifying the sources of alpha, measuring them and turning them into tradable indices is easier to accomplish. This has seen passive funds take over many types of investment exposures in both retail and institutional portfolios. This is even beginning to happen in the ESG space with individual E-, S-, and G-focused index funds.

What all of these strategies have in common, however, is that they are focused solely on financial returns. If asset owners truly look to have their investment dollars work to address pre-financial risks as well as achieve financial returns, the potential for a new type of active management is significant. ESG KPIs are just beginning to develop. They are not commonly defined or measured. There is a great deal of sector differentiation in how metrics apply. Inputs to evaluate a company's or a project's E-, S-, or G-profile are still highly subjective at this point and developing, including the growing use of alternative data sources. All of these considerations highlight a wide-open playing field in terms of the development of dual return products.

Our projections shift from evolutionary to revolutionary at this point. There are, as of yet, no true dual return products. Some asset managers may offer a set of non-financial metrics against which investors can track their portfolio performance, but they are not a standardized recorded and reported return stream for the fund. Imagining how dual return products might emerge and develop is at this point an exercise in projection, but one that is based on discussions with a broad set of investment managers all over the globe.

If the market moves in this direction, we might anticipate a progression in the development of products. As outlined in the paper, first we would expect to see "green chip" funds focused on those companies most able to deliver both financial returns and non-financial risk impacts. This would then expand to a full ESG theme box product set that offers a mix of "green chip" as well as a blend of higher risk-higher reward company combinations. This would span "green chip" companies as well as companies that offer good E-, S-, or G-return but have lower financial prospects (grey chips) or companies that offer good financial returns but have lower E, S or G scores (brown chips).

Over time, however, more investment dollars seeking both financial return and pre-financial risk mitigation may shift from equity focused strategies to dual return bond or structured loan offerings where the non-financial as well as the financial terms can be written into the contract language, especially those that link their E-, S-, or G-metric improvement to a financial incentive or disincentive. Interest in dual return private companies and real assets may also grow as these products too offer a superior mechanism to incentivize specific behaviors around pre-financial risks and have a higher return potential than many bond or structured loan products. For investors able to co-invest, they can have a voice into the co-creation of non-financial return goals.

Finally, success in creating single asset class dual return products may lead to the development of multi-asset class solutions (MACS). Creating these products would be more challenging as the trade-offs between products that deliver high financial returns and products that deliver more substantial E-, S-, or G-risk mitigation would have to be balanced in the portfolio to find the optimal blend of holdings. Yet, the ability to have a comprehensive solution that delivers the entire portfolio may appeal to many investors. In the mass affluent and retail space in particular, these products may fit well with the move to more tailored portfolios. Considering the individual's "values" in addition to their needs, assets, and liabilities, aligns to the ideal of mass customization that is becoming a goal for many asset management firms developing their solution delivery platform.

Navigating the shifting profile of ESG investing and exploring the development of new ESG product offerings will be a focus for Citi's Business Advisory Services team for many years to come as we extend our evaluation of a space we first started writing about back in 2015. As always, we stand ready to help our clients move forward in an industry undergoing rapid change. For more information or to discuss the findings of this report, please contact your Citi sales or relationship management contact or reach out to us directly at *Business.Advisory@Citi.com*.

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