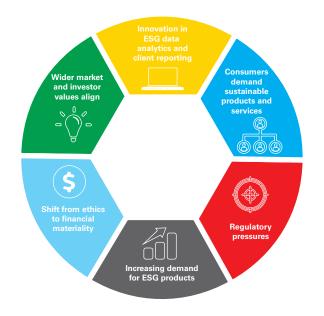
LGIM's approach to responsible investing

We believe responsible investing can not only mitigate risks, but also lead to better long-term financial outcomes without sacrificing performance.

From diesel emissions to oil spills, there have been many tangible examples in recent years of how failures in the way companies are run can have a harmful impact on the environment, society and investor returns.

We believe responsible investing can mitigate the risk of such outcomes and has the potential to improve returns through the integration of environmental, social and governance (ESG) considerations, active ownership and long-term thematic analysis. Crucially, it can also unearth investment opportunities, which the market may not fully appreciate, and should not require a trade-off with performance.

Figure 1: Stars align for responsible investing







Anton Eser became Chief Investment Officer of LGIM in 2017. Prior to this, Anton was Co-Head of Global Fixed Income leading the London based Fixed Income team and managing LGIM's flagship global credit portfolios.

At LGIM, as one of the world's largest asset managers with a long history of corporate engagement on the most material long-term issues, we have the scale and ability to make a real, positive impact on the companies in which we invest and on society as a whole. We share this objective – made far more attainable by ongoing improvements in ESG data – with a growing number of clients.

Responsible investing cannot be just a box-ticking exercise. So from the votes cast by our industry-leading Corporate Governance team to the investment processes deployed in our funds, we continue to take steps to embed the principles of responsible investing across our entire business – and act on them.

At a time when populism is destabilising global politics, the world faces a growing debt burden and a demographic drag looks set to dominate growth prospects, we believe that such an approach is more necessary now than ever as new systemic threats continue to emerge.



Against this backdrop, there is a clear change in the behaviour of consumers, who are demanding more sustainable products and services due to a growing awareness that they are responsible for the societal and environmental implications of their choices.

A similar shift is underway among investors. Increasing numbers expect the asset managers most likely to deliver the greatest shareholder value over the long term to be those that truly recognise the importance of incorporating long-term themes alongside ESG considerations into their investment processes.

MANAGING THE MANAGERS

There are an almost overwhelming number of ways to characterise and conduct responsible investment strategies. We support the consensus view that responsible investing aims to incorporate ESG factors, in order to better manage risk and generate sustainable, long-term returns.¹

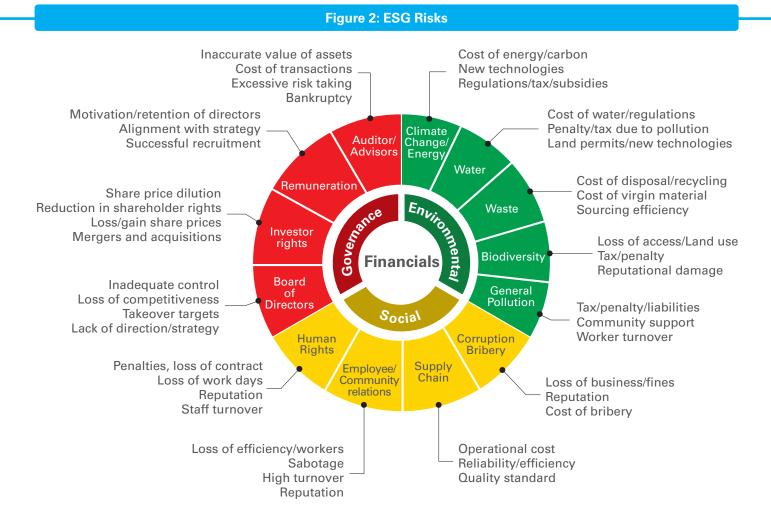
Put simply, responsible investing is about identifying and supporting good management: companies aware of their impact on wider stakeholders are less likely to face political or regulatory pressure.

We see unmanaged ESG factors, meanwhile, as posing potential risks and opportunities, which can have a material impact on the performance of investments, as shown in Figure 2.

Importantly, unlike other approaches, such as ethical investing, we define responsible investing as seeking to deliver desired financial outcomes, rather than being subject to moral or ethical considerations.

WHAT'S THE EVIDENCE?

While the collection of hard, empirical data on responsible investing remains somewhat in its infancy, a growing body of academic and industry work indicates that it can indeed engender better risk-and-return outcomes.



¹ This is derived from the definition by the Principles of Responsible Investment, a UN-backed international network of investors. For more detail, please see the appendix.

The overwhelming majority of 2,250 peer-reviewed studies analysed by Hamburg University and Deutsche Asset Management identified a positive overall relationship between ESG and corporate financial performance.²

A report from Barclays showed that bonds with high ESG ratings had lower spreads and higher credit quality than other securities in their index.³ Other studies point to potential share-price gains following successful engagements with companies on ESG issues⁴ and the potential outperformance of portfolios holding stocks that score highly on material sustainability issues.⁵

Even though our focus is primarily on the long term, research from Morgan Stanley illustrates the heavy toll that ESG risks can also take on short-term performance, as demonstrated in Figure 3.

Figure 3: Share-price performance one year after ESG risk event

ESG risk event	Date	1Y (%)
Energy accounting scandal	14/08/01	-99.6
Telecommunications accounting scandal	11/03/02	-98.6
Upper Big Branch Mine explosion	05/04/10	-52.7
Deepwater Horizon oil spill	20/04/10	-28.2
Automobile airbag recall	21/01/14	-53.5
Pharmaceutical accounting scandal	05/08/15	-91.5
Automobile emissions scandal	20/09/15	-26.4
Average loss to shareholders after 1 year		-64.4

Source: Morgan Stanley

GUESS WHO'S COMING TO YOUR AGM

Active ownership forms a key part of how we conduct responsible investing, as we feel it is incumbent upon us to take our stewardship responsibilities seriously, not least because of our size. This is reflected in the following activity:

- Company engagement
- Using our voting rights globally, with one voice across all our active and index funds
- Addressing systemic risks and opportunities
- Seeking to influence regulators and policymakers
- Collaborating with other investors and stakeholders

Our approach is epitomised in the LGIM Climate Impact Pledge, a targeted engagement process with companies that are crucial to the transition to a low-carbon economy. We believe the threat to vote against chairs at companies that have shown persistent inaction, alongside the threat of divestment from our Future World funds, forces companies to be more resilient to climate change – one of the most pressing challenges of our era.

The Corporate Governance team, which spearheads our actions under the pledge, operates independently of the business and reports directly to the LGIM board. This structure is designed to ensure that any potential investment conflicts of interest are minimised, and that we always act to achieve the best outcome for our clients.

FINDING THE WINNERS

A company's ESG profile is most comprehensively assessed by looking at two different drivers of investment returns. The first is how its business activities can impact its bottom line; for example, the risk of pollution by a miner leading to the loss of a key licence to extract resources from a country.



The second is how long-term trends may determine consumer demand for products and services; for example, the implications of the global battle against plastic for petrochemical companies and demand for oil.

We conduct a combined research effort across asset classes to evaluate long-term themes – energy, demographics and technology – and understand how they shape, and are shaped by, the political environment. This enables us to form a connected view of the world and the shifting investment landscape. Extensive collaborative work by fund managers, analysts, strategist and economists on the connections between these themes enables us to generate valuable insights into how companies are adapting to a rapidly changing world.

We also use these insights to identify the winners of the future – the companies to which investors will allocate ever-larger amounts of capital.

² https://www.db.com/newsroom_news/K15090_Academic_Insights_UK_EMEA_RZ_Online_EN_151216_R2a.pdf

³ https://www.investmentbank.barclays.com/our-insights/esg-sustainable-investing-and-bond-returns.html

⁴ Elroy Dimson, Oğuzhan Karakaş and Xi Li, Active Ownership, Review of Financial Studies, 2015.

⁵ Mozaffar Khan, George Serafeim and Aaron Yoon, Corporate Sustainability: First Evidence on Materiality, Harvard, 2015

In addition, through this approach we work to make a positive societal impact via strategies such as our Future World funds, which go even further in addressing sustainability issues.



Madeleine King, Global Fixed Income

Case Study: The future of TV

Rapid developments in technology and changing demographics have pushed the TV industry to a tipping point. Mergers and acquisitions to defend against the growth of services like Netflix, and the decline of traditional Pay TV

packages, are increasing leverage and weakening credit quality of many of the issuers in the sector. Our credit analysis found value in those media and telecomunications companies that have already defined their strategies in the new landscape – where leverage has peaked and spreads price in a premium. This led us to identify an opportunity in **AT&T**, where our analysis led us to believe that the bonds issued to finance its acquisition of Time Warner were priced at an attractive premium versus the secondary market at the time.



Shaunak Mazumber, Active Equities

Case study: The driving machine transformed

The rise of electric vehicles constitutes a generational transformation for the auto industry. Most investors expect the profits of traditional auto manufacturers that fail to adapt to erode as they face the risk of disruption. This threat has

intensified as the cost of batteries declines; we expect the capacity and cost of batteries eventually to be equivalent to internal combustion engines. However, we identified a company that our initial analysis led us to believe was already priced for disruption, whose management had a clear commitment to launch electric vehicles: **Daimler**. Our subsequent detailed analysis at the time found that the carmaker presented an investment opportunity with an attractive risk-return profile.

INNOVATING IN INDEX

Given the explosive growth in index investing, we believe it has never been more important to exercise the voting rights bestowed on index investors. We make full use of our seat at the corporate table, partly by taking an innovative approach to the aggregation and analysis of data, drawn from a wide variety of sources.

Our Corporate Governance and Index teams have developed a rules-based and transparent methodology by which to score companies against ESG metrics. This feeds into the LGIM ESG Score, which we use universally across the business.

We utilise the score to design equity and fixed income indices with 'tilts' towards higher-scoring companies, and away from lower-scoring companies, which we use for our Future World index range. According to our analysis, these ESG-tilted indices should provide a similar risk/return profile to comparative non-tilted indices while performing significantly better against ESG metrics, such as exposure to carbon risk.

The LGIM ESG Score is linked to how we engage with, and vote on, the companies in which we invest. To facilitate this process, we publish the scores and explain the metrics on which they are based. This enables companies to know exactly where they are doing well and where they need to improve.

Our approach also enables us to drive positive change within companies on the ESG factors we believe to be most significant for long-term investors, across a broad range of sectors, geographies and business activities. We have only chosen indicators for which credible, quantifiable and consistent data are available across broad investment universes.

By exerting pressure on all companies, through incentivising them to improve their scores, we can spur the market itself to perform better over the long term.

OPPORTUNITIES FOR ALPHA

Our approach to ESG integration within index funds complements that applied by our Active Equity and Global Fixed Income teams, all of which are supported by our Corporate Governance specialists.

These active teams incorporate additional qualitative inputs and assessments, gleaned from fundamental analysis and more than 2,000 company meetings annually, when selecting securities for investment. In doing so, they focus on material company- and sector-specific factors to reflect ESG risks and opportunities embedded within each stock or bond under review. This process results in our active 'ESG view', which is a core factor in our credit and equity analysis.

The active ESG view, moreover, involves the teams leveraging their sector expertise, in-depth knowledge of company dynamics and the corporate access we enjoy due to our scale. We believe that incorporating the view into analysis helps to shield our investors from risks and increases the probability of generating alpha, or outperformance.

Our Asset Allocation team, which oversees LGIM's multiasset funds, deploys both index and active strategies. As such, it is able to enjoy the benefits of the ESG analysis undertaken in these areas as it seeks to manage and mitigate risks within its portfolios.

In short, the integration of ESG considerations forms an essential part of our analysis of companies across our Active Equity and Global Fixed Income teams, while providing a key tool for our Asset Allocation team.

REAL ASSETS, REAL BENEFITS

The activity undertaken by LGIM Real Assets demonstrates in a particularly tangible way how our approach to responsible investing can have a positive and measurable impact on society and the environment, while creating long-term value and performance benefits.

LGIM Real Assets shares a common purpose with L&G Group, one of the investors on whose behalf the team manages assets, to be economically and socially useful "in everything we do." As one of the UK's largest landlords, the team seeks to achieve this by incorporating ESG factors into its investment decision-making in the following ways:

- Environmental: setting targets to improve the environmental efficiency of assets; investing in clean energy infrastructure
- Social: delivering urban regeneration projects that rejuvenate communities and stimulate economic growth; demonstrating the social value of investments
- Governance: screening out companies incompatible with responsible investment; stakeholder engagement and sustainable procurement

Examples of the real-world benefits include the introduction of energy-efficient heating, water and lighting systems



at a central London asset, which slashed energy costs and led to the office space becoming fully let, improving fund performance; and the backing of a £400 million regeneration project in Cardiff, which is set to deliver over 10,000 new jobs, and will host the new BBC Wales headquarters and a new government hub.

MAKING RESPONSIBLE INVESTING MAINSTREAM

So what does the future hold for responsible investing?

Markets do not yet reflect the systematic incorporation of ESG considerations by their participants. But as investors are increasingly recognising that these factors play a crucial role in determining asset prices, we believe responsible investing is destined to become the new normal.

As it becomes mainstream, we are likely to see a virtuous circle of more investors demanding higher standards in order to allocate capital to companies, and more companies raising their standards in order to receive that capital.

We also expect growing numbers of investment decisionmakers to view the consideration of ESG factors as a fundamental part of fiduciary duty, as they acknowledge that it need not entail the sacrifice of investment returns.

For our part, we have extended our capabilities in responsible investing – and will continue to do so – to deliver sustainable, long-term returns for our clients and help bring about the real, positive change of which the world is in urgent need.

APPENDIX

LGIM is a signatory to the Principles of Responsible Investment, which offers the following definition:

"Responsible investment is an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions, to better manage risk and generate sustainable, long-term returns."*

The PRI notes that this broad definition shares similarities with other investment approaches, which seek to combine a financial return with a moral or ethical return. But it adds that responsible investment can and should be pursued even by the investor whose sole purpose is financial return, because to ignore ESG factors is to ignore risks and opportunities that have a material effect on the returns delivered to clients and beneficiaries.

*https://www.unpri.org/pri/what-is-responsible-investment

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