

A PRACTICAL GUIDE TO ESG INTEGRATION FOR EQUITY INVESTING

THE SIX PRINCIPLES

PREAMBLE TO THE PRINCIPLES

As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time). We also recognise that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

1 We will incorporate ESG issues into investment analysis and decision-making processes.

2 We will be active owners and incorporate ESG issues into our ownership policies and practices.

3 We will seek appropriate disclosure on ESG issues by the entities in which we invest.

4 We will promote acceptance and implementation of the Principles within the investment industry.

5 We will work together to enhance our effectiveness in implementing the Principles.

6 We will each report on our activities and progress towards implementing the Principles.



PRI's MISSION

We believe that an economically efficient, sustainable global financial system is a necessity for long-term value creation. Such a system will reward long-term, responsible investment and benefit the environment and society as a whole.

The PRI will work to achieve this sustainable global financial system by encouraging adoption of the Principles and collaboration on their implementation; by fostering good governance, integrity and accountability; and by addressing obstacles to a sustainable financial system that lie within market practices, structures and regulation.

PRI DISCLAIMER

The information contained in this report is meant for the purposes of information only and is not intended to be investment, legal, tax or other advice, nor is it intended to be relied upon in making an investment or other decision. This report is provided with the understanding that the authors and publishers are not providing advice on legal, economic, investment or other professional issues and services. PRI Association is not responsible for the content of websites and information resources that may be referenced in the report. The access provided to these sites or the provision of such information resources does not constitute an endorsement by PRI Association of the information contained therein. Unless expressly stated otherwise, the opinions, recommendations, findings, interpretations and conclusions expressed in this report are those of the various contributors to the report and do not necessarily represent the views of PRI Association or the signatories to the Principles for Responsible Investment. The inclusion of company examples does not in any way constitute an endorsement of these organisations by PRI Association or the signatories to the Principles for Responsible Investment. While we have endeavoured to ensure that the information contained in this report has been obtained from reliable and up-to-date sources, the changing nature of statistics, laws, rules and regulations may result in delays, omissions or inaccuracies in information contained in this report. PRI Association is not responsible for any errors or omissions, or for any decision made or action taken based on information contained in this report or for any loss or damage arising from or caused by such decision or action. All information in this report is provided "as-is", with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information, and without warranty of any kind, expressed or implied.

ACKNOWLEDGEMENTS

The PRI thanks the following people for their guidance during the creation of the publication. The PRI would also like to thank everyone who provided content, and the asset owners that participated in roundtables providing invaluable advice on the chapter 3: Assessing external managers.

LISTED EQUITY INTEGRATION SUB-COMMITTEE

- Michelle R. Clayman, CFA, Founder & CIO, New Amsterdam Partners (Chair)
- Jessica Alsford, Executive Director and Head of Morgan Stanley's Sustainable + Responsible investment research, Morgan Stanley
- James Ayre, Fund Manager, CCLA
- Scott Blair, CFA, Head of Equity Research, BcIMC
- Leanne Clements, Responsible Investment Officer, West Midlands Pension Fund
- Jeremy Cote, Research Analyst, Trillium Asset Management
- Sudip Hazra, Head of Sustainability Research & Responsible Investment, Kepler Cheuvreux
- Karianne Lancee, Senior Pension Investments and Sustainability Manager, Uninvest Company
- Mary Jane McQuillen, Managing Director, Portfolio Manager, Head of ESG Investment, Clearbridge Investments
- Matthias Müller, Senior Sustainable Investment Analyst, RobecoSAM
- Patrick O'Hara, Responsible Investment Analyst, USS Investment Management
- Willem Schramade, Sustainability and Valuation Specialist, Robeco
- Seema Suchak, ESG Analyst, Schroders
- Sebastien Thevoux-Chabuel, Head of Research, Comgest
- Stephane Voisin, Independent Research Analyst, IntegratedValue

LISTED EQUITY ADVISORY COMMITTEE

- Alex van der Velden, Partner & CIO, Ownership Capital (Chair)
- Mamadou-Abou Sarr, SVP & Global Head of ESG, Northern Trust Asset Management
- José Alberto Baltieri, CFA, Equity Portfolio Manager, Bradesco Asset Management
- Neil Brown, Investment Manager – Pan European Equities, Alliance Trust plc
- Michelle R. Clayman, CFA, Founder & CIO, New Amsterdam Partners
- Jeremy Cote, CFA, Research Analyst, Trillium Asset Management
- Arnoud Diemers, Head of Investments, Delta Lloyd Asset Management

- Aline Geraldi Gouveia, International Business Development Analyst, Bradesco Asset Management
- Anne-Charlotte Hormgard, Senior Manager, Responsible ESG Integration, AP3
- Daniel Ingram, Head of Responsible Investment, BT Pension Scheme
- Bozena Jankowska, Director & Global Co-Head of ESG, Allianz Global Investors
- Mary Jane McQuillen, Managing Director, Portfolio Manager, Head of ESG Investment, Clearbridge Investments
- Martijn Olthof, Senior Portfolio Manager, APG Asset Management
- Brian A. Rice, Portfolio Manager, California State Teachers' Retirement System
- Owen Thorne, Investment Manager, Merseyside Pension Fund
- Amanda Young, Head of Responsible Investment, Standard Life Investments

LISTED EQUITY OUTREACH SUB-COMMITTEE

- Mamadou-Abou Sarr, SVP & Global Head of ESG, Northern Trust Asset Management (Chair)
- Maria Eugênia Buosi, Partner, Resultante Consultoria Estratégica
- Emily Chew, Vice President & Head of Asia-Pac ESG Research, MSCI
- Hellen Goorse, Responsible Investment & Governance Advisor, MN
- Seiji Kawazoe, ESG Specialist & Associate General Manager, Sumitomo Mitsui Trust Bank
- Ronnie Lim, Senior Investment Specialist, Robeco
- Gustavo Pimentel, Managing Director, SITAWI
- Sandra Rockett, Director – Institutional Business Development, Irish Life Investment Management
- Malcolm A. Ryerse, Director of Responsible Investment, Columbia Management Investment Advisers
- Francois Schockaert, Principal, Ownership Capital
- Aaron Ziulkowski, Senior ESG Analyst, Walden Asset Management

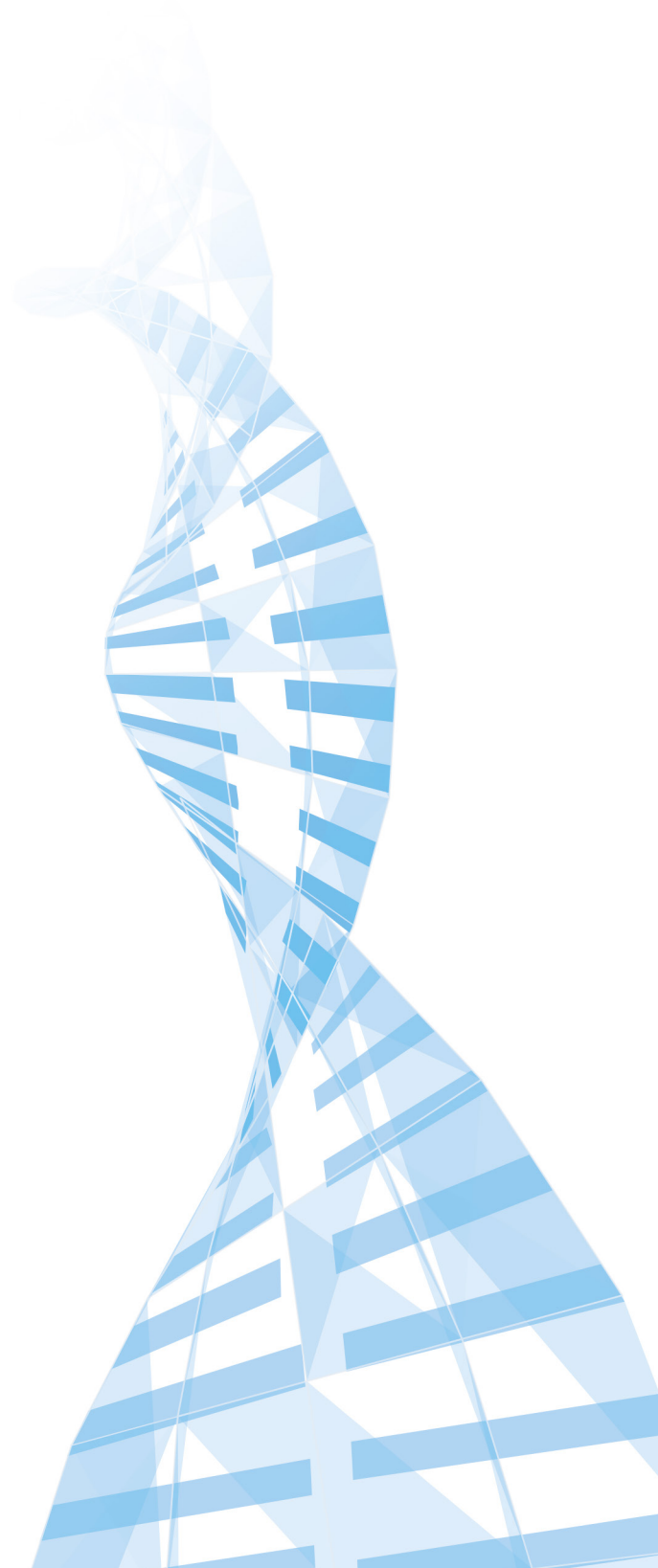
ASSET OWNERS THAT PARTICIPATED IN ROUNDTABLES ON CHAPTER 3 ASSESSING EXTERNAL MANAGERS

- Jennifer Anderson, Responsible Investment Officer, The Pensions Trust
- Urs Bitterling, Allianz SE, ESG Office
- Sébastien Chabot, Director, Public Market Investments, Pension Fund and Treasury, University of Ottawa
- Anne-Charlotte Hormgard, Senior Manager, Responsible ESG Integration, AP3

- Leanne Clements, Responsible Investment Officer, West Midlands Pension Fund
- Daniel Ingram, Head of Responsible Investment, BT Pension Scheme
- Karianne Lancee, Senior Pension Investments and Sustainability Manager, Univest Company
- Manuel Lewin, Head of Responsible Investment, Zurich Insurance Group
- Divya Mankikar, Head of ESG Integration, CalPERS
- Edward Mason, Head of Responsible Investment, Church Commissioners for England
- Barbara Miazga, Former Treasurer and Director, Pension Fund, University of Ottawa
- Martin Parsons, Project and Risk Officer, Environment Agency Pension Fund
- Katharine Preston, Director, Responsible Investing, OPTrust
- Brian Rice, Portfolio Manager, CalSTRS
- Beth Richtman, Investment Manager, Real Assets & Global Governance, CalPERS
- Faith Ward, Chief Responsible Investment and Risk Officer, Environment Agency Pension Fund

OTHER ACKNOWLEDGEMENTS

- Nicole Bradford, Investment Manager, ESG, Cbus
- Jennifer Coulson, Senior Manager, ESG Integration, bcIMC
- Lise Renelleau, Director of SmartBeta and Managed Volatility Equity, Axa Investment Managers



CONTENTS

EXECUTIVE SUMMARY	6
FOREWORDS	9
INTEGRATION TECHNIQUES	12
FUNDAMENTAL STRATEGIES	13
QUANTITATIVE STRATEGIES	36
SMART BETA STRATEGIES	43
PASSIVE AND ENHANCED PASSIVE STRATEGIES	50
SELL-SIDE RESEARCH	56
ASSESSING EXTERNAL MANAGERS	67
SELECTION	69
APPOINTMENT	79
MONITORING	85
IMPACT ON INVESTMENT PROCESS	92
THE ROAD AHEAD	115

EXECUTIVE SUMMARY

Integrating environmental, social and governance (ESG) factors into analysis of listed equity investments is the most widespread responsible investment practice¹ in the market today. Several drivers, including capital flowing into funds that integrate ESG factors and the growing awareness of academic research supporting the benefits, are encouraging more and more investors to practice ESG integration.

To guide investors – both asset owners and investment managers – who are implementing ESG integration techniques in their investment decisions and processes, this report is the most comprehensive description to date of what ESG-integrated analysis is, and how it works in practice.

INTEGRATION TECHNIQUES

There are a range of techniques available to integrate ESG factors across investment strategies. Case studies demonstrate how they can be put to use, and that investors can treat ESG factors in the same way as any other financial factors using existing quantitative methodologies.

FUNDAMENTAL STRATEGIES (ALSO KNOWN AS TRADITIONAL STRATEGIES)

Investors can adjust forecasted financials (such as revenue, operating cost, asset book value and capital expenditure) or company valuation models (including the dividend discount model, the discounted cash flow model and adjusted present value model) for the expected impact of ESG factors.

- Calculating labour standards' impact on revenue and discount rate – Union Investment
- Valuing the revenue impact of increasingly stringent environmental regulation – Standard Life Investments
- Assessing the revenue impact of the SDGs – Alliance Trust Investments
- Sustainable workplace practices can help competitive positioning in the retail sector – ClearBridge Investments
- Calculating material ESG issues' impact on fair value – RobecoSAM
- Evaluating ESG impact on project costs – Morgan Stanley Research
- Incorporating diversity – Trillium Asset Management

- Calculating ESG impact on beta – Sycomore Asset Management
- Material ESG issue scenario analysis – RBC Global Asset Management
- Revenue forecast adjustment and scenario analysis – Caravel Management
- Understanding the materiality of tax avoidance – MFS Investment Management
- Linking health and safety to operating margins – Robeco

QUANTITATIVE STRATEGIES (ALSO KNOWN AS SYSTEMATIC STRATEGIES)

Quant managers can construct models that integrate ESG factors alongside factors such as value, size, momentum, growth, and volatility.

- Linking ESG ratings to returns and volatility – New Amsterdam Partners
- Selecting stocks through a modular investment process – Arabesque Asset Management
- Shaping the portfolio with an ESG materiality profile – Auriel Capital
- Enhancing forecasted total risk models – Analytic Investors

SMART BETA STRATEGIES (ALSO KNOWN AS STRATEGIC BETA, ALTERNATIVE BETA AND FACTOR INVESTING)

ESG factors and scores can be used as a weight in portfolio construction to create excess risk-adjusted returns, reduce downside risk and/or enhance portfolios' ESG risk profile.

- Joining financial and long-term sustainable performance objectives – AXA Investment Managers
- Constructing a smart water index – Calvert Investments
- Feeding governance insights into smart beta strategies – Bank J. Safra Sarasin

¹ As reported by PRI signatories through the annual PRI Reporting and Assessment process

PASSIVE (ALSO KNOWN AS INDEXING) AND ENHANCED PASSIVE STRATEGIES (ALSO KNOWN AS ENHANCED INDEX)

The overall ESG risk profile, or exposure to a particular ESG factor, of passive investments can be reduced by adjusting index constituent weights or by tracking an index that already does so.

- Weighting stocks of STOXX' mainstream indices according to material ESG factors – SD-M
- Weighting vs exclusion in low-carbon indexes – MSCI

Managers can integrate ESG factors into enhanced passive strategies as part of their investment decisions aimed at improving investment performance.

SELL-SIDE RESEARCH

Sell-side analysts can generate ideas and investment themes for investment managers to integrate, or they can directly integrate ESG factors into fair values and investment recommendations (e.g. buy/hold/sell) themselves. In this fully integrated approach, sell-side analysts integrate ESG factors into their forecasted company financials (e.g. revenues, costs, asset, liabilities, tax rates – via the income statement, balance sheet and cash flow statement) and/or models (commonly the discounted cash flow model).

Insights from examples of existing ESG-integrated research are included for each approach.

INTEGRATION IN FINANCIAL FORECASTING PHASE

Economic analysis assesses the impact of ESG factors on the economy to adjust forecasted economic growth rates, and apply these to a company's forecasted financials.

- Energy Darwinism II – Citi

Value driver adjustment identifies an ESG factor(s) that is material to a particular sector, and integrates it into valuations and investment recommendations of companies across that sector.

- What keeps energy analysts awake at night / What keeps utilities analysts awake at night – Credit Suisse
- Two degrees (2°C) of separation – Barclays
- Getting Real: The New Emissions Era – Exane

Theme exposure explores which industries are associated with an ESG theme, and in turn which companies within it.

- Investing in Education – Kepler Cheuvreux
- Telecom: the great equaliser – HSBC
- You've been hacked! – Bank of America Merrill Lynch
- Green Impact Screener – Kepler Cheuvreux
- Semiconductors - a driving force for energy efficiency – DZ Bank
- Battery Rush – CLSA

Integrated performance benchmarking allocates a score that reflects companies' performance on ESG and other financial factors, absolute and relative to industry peers.

- Red Flags: Forensic analysis of accounting anomalies – CLSA

Subject-specific benchmarking indicates potential disruptions to competitive positioning within individual sectors.

- Natural beauty: Controversial chemicals in the HPC industry – Societe Generale

INTEGRATION IN COMPANY VALUATION MODEL PHASE

Valuation model integration considers ESG factors when adjusting models that calculate a fair value/target price for a company.

- Aerospace & Defence: is ESG ready for lift-off? – Oddo Securities

ASSESSING EXTERNAL MANAGERS

Asset owners (or their investment consultants) assess external managers' integration practices through their existing selection, appointment and monitoring (SAM) process in order to identify, hire and appraise managers that will be able to comprehensively meet their mandate.

Interviews with asset owners provide their insights on each stage of the process.

- Zurich Insurance Group
- The Pensions Trust
- California State Teachers' Retirement System (CalSTRS)
- Environment Agency Pension Fund

SELECTION QUESTION EXAMPLES

- What ESG data, research, resources, tools and practices do you use to integrate ESG factors into your investment process, valuations and decisions?
- What are some specific examples of how ESG factors are incorporated into your investment analysis and decision-making process (e.g. asset allocation, definition of the investment universe, portfolio construction, fundamental or sector analysis, stock selection)?
- What are some specific examples of how information acquired from voting and engagement activities translates into investment decisions?

APPOINTMENT CLAUSE EXAMPLES

- The Manager acknowledges that ESG issues have the potential to impact investment risks and returns and that considering these issues alongside traditional factors in investment decision-making can improve long-term risk-adjusted returns.
- The Manager shall act in line with all ESG integration and active ownership responsibilities as outlined in the Investment Management Agreement.

MONITORING QUESTION EXAMPLES

- Which integration practices/tools have worked and have not worked over the reporting period, and why?
- What are some specific examples of valuations being adjusted due to an ESG factor? How did this impact the investment decision?
- Regarding the recent revelations about company X in the portfolio, why did you buy/hold/sell the stock or increase/decrease your holdings?

IMPACT ON INVESTMENT PROCESS

Fully integrating ESG factors into a new or existing investment process takes time and often requires trial and error. Many variables are involved and approaches differ between investment managers and even between teams. The first step, applicable to all investors, is to get senior management to buy in to the benefits of integrating ESG factors into investment processes.

STRUCTURING TEAMS

- Combining analysis from dedicated ESG and fundamental teams – bcIMC

SHARING DATA

- Reporting ESG information on summary sheets – AMP Capital Investors
- Integrating ESG analysis into a centralised database – Sycomore Asset Management

REVIEWING RESEARCH

- Reviewing existing holdings – Boston Trust & Investment Management Company
- Identifying material factors – APG Asset Management
- Reviewing the impact on the portfolio – Robeco

MONITORING RISK

- Visualising data for analysts, managers and clients – Columbia Management Investment Advisers
- Using proprietary tools to inform engagement – Hermes Investment Management

ANALYSING PERFORMANCE

- Identifying ESG factors' contribution to performance – Auriel Capital
- Attributing performance to ESG factors – Quotient Investors

INTEGRATING ACTIVE OWNERSHIP PRACTICES

- Engagements affecting portfolio construction – VietNam Holding Ltd
- Engaging companies on sustainability strategy – Ownership Capital

RESPONDING TO INVESTOR DEMAND

This publication represents an important milestone in the evolution of responsible investing.

Socially responsible investing (SRI) emerged in the 1970s primarily due to faith-based organisations believing that their investing activities should reflect their values, and that their presence as investors could change companies' practices. SRI in this form was largely viewed as a fringe activity, but as investors have explored the financial benefits of responsible investing approaches and investment managers are responding to asset owners' demands, the amount of assets managed by SRI and ESG strategies has grown dramatically.

For instance, the Global Sustainable Investment Alliance estimated that global assets invested in environmental, social and governance (ESG) strategies grew from US\$13.3 trillion at the start of 2012 to US\$21.4 trillion at the start of 2014¹. The growth of global assets led to the launch of the PRI ten years ago to provide standards and resources to the burgeoning field.

While some firms have been in the responsible investing space for many years, others are relatively new to the field and are trying to figure out how to include ESG analysis in their approaches, to respond to increased demand from end clients. This publication aims to meet the need of new entrants and more experienced players looking to take their ESG integration to the next level by providing practical guidance and case study examples of why and how to do ESG integration in listed equities.

Traditional financial analysis and portfolio management has often been distinct from ESG analysis, with the latter applied as an afterthought – not considered to have material financial effects. But there is increasing awareness that sustainability issues can have sizeable financial impact on companies. Buy-side analysts and portfolio managers need to know how to price those factors, sell-side analysts can help their clients with insightful ESG research and asset owners have a responsibility to understand ESG risks and opportunities within their portfolios and make sure their investment managers integrate ESG analysis, to enhance returns and minimise downside surprises.

I would like to thank my fellow members of the Integration Sub-Committee who put many hours into this project. We hope readers find this publication helpful on their journey to ESG integration.



Michelle R. Clayman, CFA
Chair of the Listed Equity Integration Sub-Committee
(Founder and CIO of New Amsterdam Partners)

¹ http://www.gsi-alliance.org/wp-content/uploads/2015/02/GSIA_Review_download.pdf

SETTING A NEW BENCHMARK

The credibility and importance of ESG integration has grown substantially in the last ten years. Today, the awareness of the financial benefits of ESG integration is spreading and the sophistication level of its application is rising. Over the next few years, we expect that this positive momentum will persuade a significant number of new investors to study the benefits of systematically integrating ESG factors into their investment processes, analysis and decisions.

While tremendous progress has been made on raising awareness about ESG considerations, the application and integration thereof remains sparse, inconsistent, and difficult to measure and compare. It can also lead to a dizzying array of products and marketing claims making it more difficult for asset owners to identify ESG integration and stewardship practices that genuinely add financial value.

To address this complexity, the PRI has produced a publication that creates a new benchmark framework for defining and applying ESG integration. After reading this publication, we hope that investment professionals will better understand the integration techniques of leading practitioners.

We also hope that this publication helps to clarify the intensity of ESG integration that can be expected from different listed equity strategies, be they passive, actively indexed, or fully active. Given the early stage of comparative financial performance of passive versus active ESG strategies, it seems too early to draw conclusions as to which approach or combination might be preferable, and each investor will need to determine the degree of intensity that best suits their needs and objectives.

This publication would not have been possible without the hard work of the PRI, the Listed Equity Advisory Committee and the Integration Sub-Committee. Comprising some of the pre-eminent minds in the field of responsible investing, the committees were drawn from leading asset owners and fund managers and we thank them for their important contributions and hard work.

While we expect this new guide will act as a useful ESG integration guide for investment professionals, we hope it will not do so for too long. If its practices are adopted, as we believe they can be, then in just a few years it should yet again be superseded by a new and even more advanced compendium of integration practices.



Alex Van Der Velden,
Chair of the Listed Equity Advisory Committee
(Partner and CIO of Ownership Capital)

SUPPORTING ESG INTEGRATION THROUGHOUT THE INDUSTRY

Since the PRI was founded 10 years ago, we have seen ESG move slowly but steadily across mainstream investing processes. Investors first started looking at responsible investment in listed equities, as it was relatively straightforward: they can vote their shares and engage with companies.

Recognising this momentum in listed equities, in 2013 the PRI launched [Integrated analysis: How investors are addressing ESG factors in fundamental equity valuation](#), highlighting investor practice. We found clear examples of integrated analysis being used to determine the fair value of companies at each stage of fundamental analysis with ESG issues being integrated into analysis of the economic and industry context of a listed company, analysis of the quality of a company's management and corporate strategy, adjustments to earnings forecasts to more accurately reflect future risks and opportunities and adjustments to valuation discount rates to reflect industry or company-specific ESG issues.

The positive news from that report was that the high-quality integrated analysis that investors had been demanding was finally being delivered.

As ESG integration is adapted across asset classes, the PRI has responded accordingly. In 2014, we produced a [Fixed income investor guide](#), looking at how ESG is being integrated in the world's largest asset class. Also that year, we published Integrating [ESG in private equity: A guide for general partners](#) to enable private equity managers to develop a framework for integrating ESG factors in their investment activities.

The trend is likely to continue. Several drivers – including capital flowing into funds that integrate ESG factors and the growing awareness of academic research supporting the benefits – are encouraging investors to either start integrating ESG factors into analysis for the first time or to apply integration techniques across more of their assets.

To guide listed equity investors – both asset owners and investment managers – who are implementing ESG integration techniques in their investment process, this report is the most comprehensive description to date of what ESG-integrated analysis is, and how it works in practice.

The guide contains information and case studies on integration techniques that apply to investment strategies including fundamental, quantitative, smart beta and passive investment. It assists asset owners and investment managers with constructing ESG-integrated investment processes and helps asset owners to assess their managers' integration practices.



Fiona Reynolds,
Managing Director, PRI

A chapter on sell-side investment research maps out the types of ESG-integrated research available, and demonstrates brokers' integration techniques.

We are encouraged by the advanced integration practices of the asset owners, investment managers and sell-side brokers who contributed to this publication. Their case studies and insights have demonstrated that ESG integration practices are becoming more sophisticated and that the impact of ESG issues on the portfolio is quantifiable.

Anticipating that ever-more momentum, towards responsible investment in financial markets and towards more sustainability in the wider economy, will make "ESG integration" standard practice, the PRI hopes this guide will assist signatories and the investment industry as a whole in preparing for the new norm.

INTEGRATION TECHNIQUES

This chapter guides investors on the range of techniques available to integrate ESG factors across investment strategies. It includes real examples of each technique from practitioners who are successfully implementing them, and demonstrating that investors can treat ESG factors in the same way as any other financial factors with existing quantitative methodologies.

It also introduces a market-wide integration model, classifying the different integration techniques used by asset owners, investment managers and sell-side brokers.

LOOK OUT FOR THE ORANGE BOXES

This chapter is written for professionals throughout the investment industry, catering to all levels of knowledge on investment strategies and ESG topics. Before explaining how ESG factors can be integrated, overview sections clarify the investment strategies being discussed. Case studies provide additional detail on actual examples of investor practice.

ESG factors can be integrated throughout a listed equity portfolio, right across the active-to-passive spectrum.

As the level of human intervention and judgement changes from the active to the passive end of the spectrum, so the application of integration techniques tends to move from the stock level to portfolio level. To achieve stock-level integration in quantitative and fundamental strategies, managers and analysts commonly adjust their forecasted financial statements and/or their models to reflect material ESG factors. (There are a few advanced active managers that do integrate ESG factors at the portfolio level.) To integrate ESG factors at the portfolio level in enhanced passive and smart beta strategies, managers tend to adjust the position size of shareholdings, in some cases to zero.

We examine techniques for integrating ESG considerations in the following investment strategies:

- Fundamental (also known as traditional strategies)
- Quantitative (also known as systematic strategies)
- Smart beta (also known as strategic beta, alternative beta and factor investing)
- Passive (also known as indexing) and enhanced passive (also known as enhanced index)

THE INTEGRATION MODEL

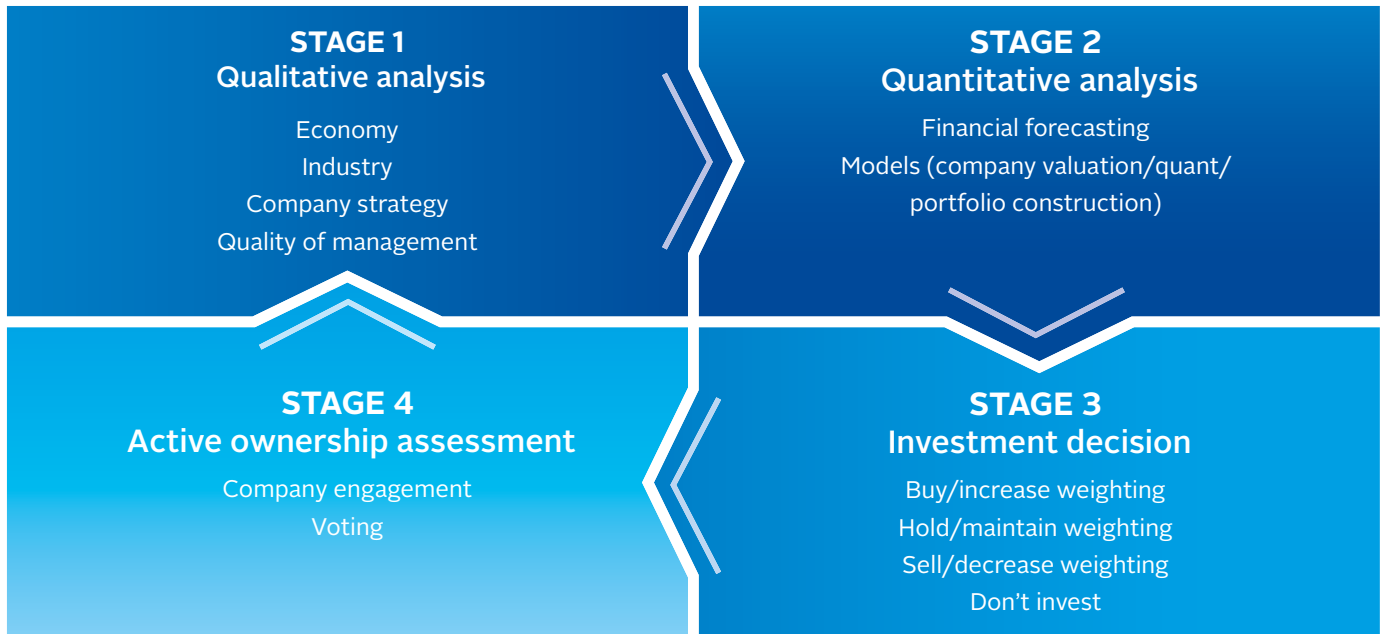
The PRI defines ESG integration as “the systematic and explicit inclusion of material ESG factors into investment analysis and investment decisions”. It is one of three ways to incorporate responsible investment into investment decisions, alongside thematic investing and screening. All three ESG incorporation practices can be applied concurrently.

The model on the next page illustrates how ESG integration can be applied across investment strategies.

There are four stages to the integration model, which involve the following activities:

- **Stage 1: Qualitative analysis** – Investors will gather relevant information from multiple sources (including but not limited to company reports and third-party investment research) and identify material factors affecting the company.
- **Stage 2: Quantitative analysis** – Investors will assess the impact of material financial factors on securities in their portfolio(s) and investment universe and adjust their financial forecasts and/or valuation models appropriately.
- **Stage 3: Investment decision** – The analysis performed in stage 1 and stage 2 will lead to a decision to buy (or increase weighting), hold (or maintain weighting) or sell (or decrease weighting).
- **Stage 4: Active ownership assessment** – The identification of material financial factors, the investment analysis and an investment decision can initiate or support company engagements and/or inform voting. The additional information gathered and the outcome from engagement and voting activities will feed back into future investment analysis, and hence have an impact of subsequent investment decisions.

In the following sections, guidance and case studies explain how ESG factors can be integrated into Stage 2 quantitative analysis across fundamental, quantitative, smart beta and enhanced passive strategies, providing examples of integrating different environmental, social and governance factors into companies from several sectors.



FUNDAMENTAL STRATEGIES

OVERVIEW OF FUNDAMENTAL STRATEGIES

Fundamental investors identify investment opportunities by using company data to make assumptions about future performance. These assumptions are based on qualitative and quantitative analysis of economic trends, the competitive environment, the market potential of a company's products and services, operational management and the quality of senior management. They use investment research and financial data from multiple sources, and often meet senior management teams.

They will then build or update company valuation models to assess a company's perceived intrinsic value and compare this to its current share price, thus identifying companies they think are over-valued and under-valued by the market.

Alternatively, and in combination, some fundamental managers use the relative valuation approach: they compare a company's financial ratios – such as price-to-earnings (PE) and return on invested capital (ROIC) – to its peers and/or the sector's average, to assess whether the company is relatively fairly valued, undervalued or overvalued.

When integrating ESG factors into investment analysis, they are examined alongside other valuation drivers. It has been more common to process ESG factors through qualitative analysis, but investors are increasingly also quantifying

and integrating ESG factors into financial forecasting and company valuation models, in alignment with other financial factors.

FINANCIAL FORECASTING

Forecasted company financials drive valuation models such as the discounted cash flow (DCF) model, which in turn calculates the estimated value (or fair value) of a company and hence can affect investment decisions. Investors can adjust forecasted financials such as revenue, operating cost, asset book value and capital expenditure for the expected impact of ESG factors.

Income statement adjustment – Revenue

Future revenues and revenue growth rates have a significant impact on the fair value of a company as well as on other related variables (e.g. estimated future operating expenses can be calculated as a percentage of sales, and estimated future depreciation charges can be calculated by multiplying sales by a ratio of average historical depreciation to sales).

To forecast revenues, investors will typically take a view on how fast the industry is growing and whether the specific company will gain or lose market share. ESG factors can be integrated into these forecasts by increasing or decreasing the company's sales growth rate by an amount that reflects the level of ESG opportunities or ESG risks.

CASE STUDY

Calculating labour standards' impact on revenue and discount rate – Union Investment



For example, a carmaker may stop selling a particular type of car in a particular country due to environmental concerns, which is estimated to reduce sales by X% annually, or rising obesity could be a revenue driver for a retailer in health, wellness and diet products, which is predicted to increase their sales by X% over the next five years.

CASE STUDY

Valuing the revenue impact of increasingly stringent environmental regulation – Standard Life Investments



CASE STUDY

Assessing the revenue impact of the SDGs – Alliance Trust Investments



Income statement adjustment – Operating costs and operating margin

Investors can make assumptions about the influence of ESG factors on future operating costs and either adjust them directly or adjust the operating profit margin. Some operating costs may be forecast explicitly, for example the change in number of employees, but depending on the level of disclosure by companies, it may be necessary to make an adjustment to the operating margin instead.

For example, a manufacturing company's operating margin may be reduced to reflect the loss in production caused by high injury and fatality rates and poor health and safety standards, or a chemical company's operating cost estimates may be increased by US\$Xm a year for the additional cost associated with new legislation on toxic waste.

CASE STUDY

Sustainable workplace practices can help competitive positioning in the retail sector – ClearBridge Investments



CASE STUDY

Calculating material ESG issues' impact on fair value – RobecoSAM



Balance sheet adjustment – Book value and impairment charge

ESG factors can influence assets' anticipated cash flow, such as by forcing long-term or permanent closure, and therefore alter their net present value. The impact is most likely to be a reduction, resulting in an impairment charge being made to bring the book value down accordingly,

and therefore reducing not only the asset value but the company's earnings for the year in which the non-cash, one-off impairment charge is recorded on the income statement. An asset revaluation can result in lower future earnings, a smaller balance sheet, additional operating/investment costs and a lower company fair value.

For example, the future cash flow from a mining company's coal assets may be significantly less than the estimated future cash flow due to insufficient demand or regulatory change, or new technology could make it possible for a miner to extract commodities that were previously economically unviable.

Cash flow adjustment – Capital expenditure

An investor may believe that ESG factors will lead a company to decrease or increase their future capital expenditure. Investors would then either decrease or increase capital expenditure forecasts by adjusting the formula linking capex to revenue, or (if aware of specific expansion plans, such as new factories, shops or mines) by applying an one-off, absolute cost adjustment to the forecasted cash flow statement.

For example, legislative changes could force an electricity producer to upgrade its coal power plants to meet new environmental regulation, or a manufacturer may see a recycling opportunity that requires a new production facility.

CASE STUDY

Evaluating ESG impact on project costs – Morgan Stanley Research



COMPANY VALUATION MODELS

The company valuation models that managers use to value a firm – including the dividend discount model, the discounted cash flow model and adjusted present value model – can be adjusted to reflect ESG factors.

Terminal value

Some models require calculating a terminal value for a company (the estimated value of the company at a point in the future assuming the company generates cash flows indefinitely), which is then discounted back to current day. A positive terminal value will increase a company's fair value.

ESG factors could cause investors to believe that a company will not exist forever, for example if an oil and gas company's assets are considered stranded and there is doubt over the sustainability of the business model. In this instance, the terminal value can be zero.

CASE STUDY

Incorporating diversity
– Trillium Asset
Management

**CASE STUDY**

Calculating ESG impact
on beta – Sycomore
Asset Management

**Beta and discount rate
adjustment**

Some investors adjust the beta or discount rate used in company valuation models to reflect ESG factors: corporate governance, operational management, general quality of management, its strategic decision making etc.

One approach to adjusting the beta or discount rate is to run a peer analysis of companies within the sector and then rank them using ESG factors. An investor can then increase/decrease the beta/discount rate for companies considered to possess high/low ESG risk, in turn reducing/increasing the fair value.

Scenario analysis

A common approach used by investors to understand the impact of ESG factors on the fair value of a company is to conduct a scenario analysis, where an ESG-integrated company valuation is calculated and compared to a baseline valuation. The differences between the two scenarios very clearly depict the materiality and magnitude of ESG factors affecting a company.

CASE STUDY

Material ESG issue
scenario analysis –
RBC Global Asset
Management

**CASE STUDY**

Revenue forecast
adjustment and scenario
analysis – Caravel
Management

**CASE STUDY**

Understanding
the materiality of
tax avoidance –
MFS Investment
Management

**CASE STUDY**

Linking health and
safety to operating
margins – Robeco



CALCULATING LABOUR STANDARDS' IMPACT ON REVENUE AND DISCOUNT RATE

Sector/Industry	Apparel	Company	Union Investment
Integration technique	Revenue and discount rate	Author	Duy Ton, Ingo Speich

We created an ESG valuation framework by selecting different ESG factors for each sector – e.g. CO2 footprint for energy companies, labour standards or product safety for retail companies – and embedding it into our classic fundamental analysis. We apply the framework to individual stocks across all sectors, together with sector analysts and ESG specialists.

While it is hard to quantify the social and environmental risks of holding a stock, we try to evaluate the company's position and outlook by performing a sensitivity analysis to obtain a range of possible fair values. In our experience, integrating ESG analysis generally works better on negative rather than on positive issues.

In valuing a European sport shoes and equipment manufacturer, we took into account concerns and opportunities of the company's supply chain labour conditions.

ANALYSING THE ESG ISSUE

There had been criticism of the labour standards, particularly poor wages and overtime, at many of the company's suppliers and sub-contractors in Southeast Asia. After many years of dialogue with the company and after visiting the contracted factories, we saw gradual improvements in the social standards at the company and its suppliers, including improved risk management and enhanced systematic monitoring of social standards. This reduced reputational risk, enhanced the brand and resulted in employees reporting being more satisfied.

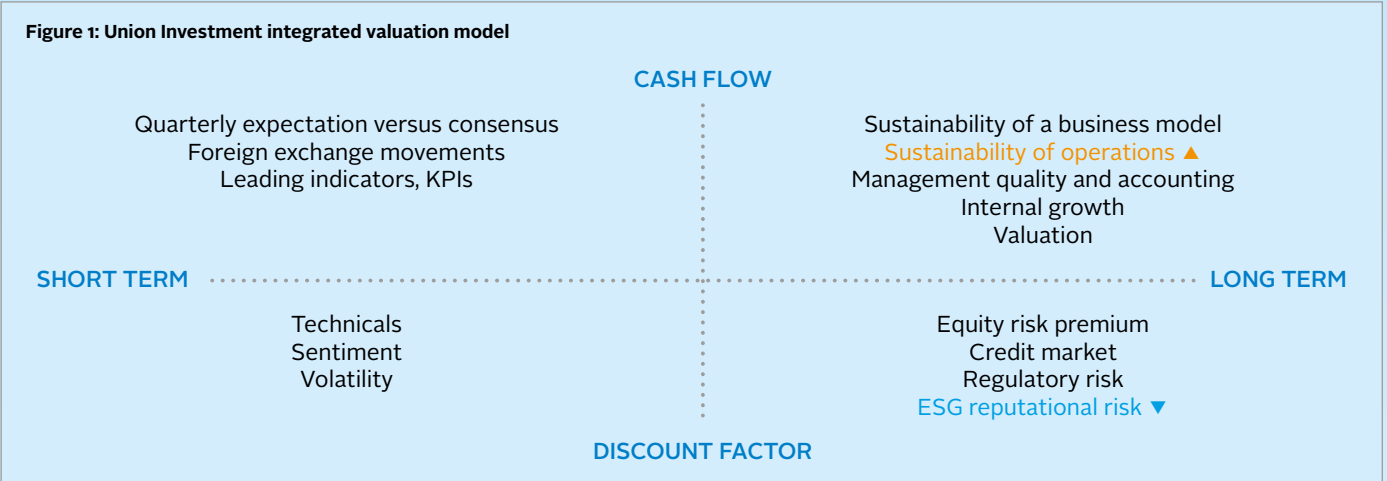
IMPACT ON VALUATION

We embedded these positive observations into our valuation model in two ways:

- Sales: As we believe that there is a positive correlation between revenue per square feet and social factors such as employee satisfaction, we expect a better sales performance because of a better brand and highly motivated labour forces (at the company and at (sub-)contractors). To take into account the positive implication on sales and cash flows, we increase the market estimates of sales growth by 100 basis points per year.
- Discount rate: Due to implemented measurements, improved risk management and enhanced systematic monitoring of social standards, the company could limit its exposure to public allegations and controversies regarding labour standards. Hence the company's reputational risk is limited (and has even turned to a reputational benefit compared to its peers), which has implication on our stock valuation model. As a consequence, we decrease the discount rate by 50 basis points.

The sizes of the adjustments are based on past experience with the sector, with the company and its peers, and on the assumption that most other market participants have not integrated sustainability considerations.

Applying the adjusted factors in our valuation model (figure 1) increases the fair value 20%, with the biggest upside coming from the reduced risk factors (about 15%).



CASE STUDY: Fundamental

[BACK](#)

VALUING THE IMPACT OF INCREASINGLY STRINGENT ENVIRONMENTAL REGULATION

Sector/Industry	Automotive
Integration technique	Revenue

Company	Standard Life Investments
Author	Rebecca Maclean, Mikhail Zverev

Our fundamental, bottom-up approach to selecting stocks is partly informed by ESG research (available to all our investment professionals), which is supported by our in-house Responsible Investment Team. The Responsible Investment Team provides ongoing analysis, as well as additional research on any issues that cause concern, and frequently contributes to internal meetings held by our investment teams to highlight trends, emerging risks/opportunities and company-specific analysis.

ANALYSING THE ESG ISSUE

In April 2015, the European Commission voted in favour of implementing 'real world' NO_x emissions testing procedures in the automobile industry.

Our Responsible Investment Team and members of the equity teams explored what this change would mean for vehicle manufacturers and companies in their supply chains, as well as the risks and opportunities that a trend of increasingly stringent environmental regulation might present for investors.

We analysed the pollution reduction solutions available to vehicle manufacturers and identified companies that would benefit or suffer from a shift away from diesel engines to other types of internal combustion engine or alternative vehicles. The analysis was informed by discussions with a range of industry participants including vehicle manufacturers, auto part suppliers, catalysis producers and environmental NGOs.

In particular, we considered:

- the options available to cut NO_x emissions from diesel engines, including exhaust gas recirculation (EGR), selective catalytic reduction (SCR) and lean NO_x trap (LNT);
- the cost for vehicle manufacturers to comply with the more stringent emissions regulation under real world testing procedures;
- the raw material content required by different solutions, and who the key providers are;
- the implications for the mix of diesel compared to petrol;
- the outlook for alternative vehicles, including hybrids and plug-in electric vehicles.

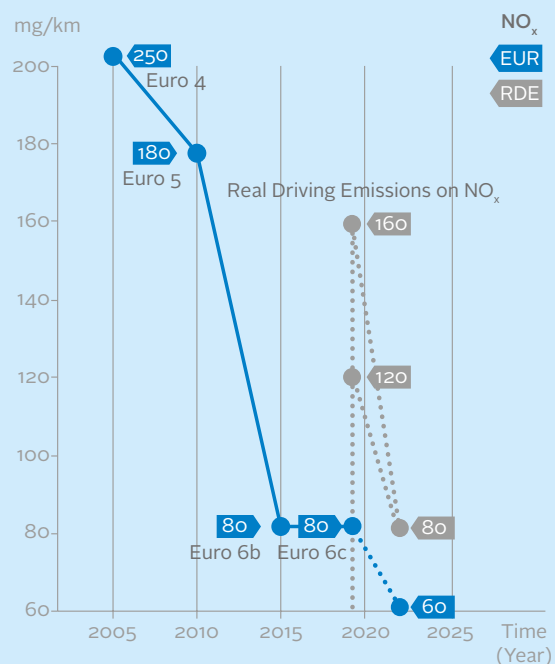
NO_x EMISSIONS UNDER SCRUTINY

Managing NO_x emission levels, of which automobiles are a major source, is a challenge for heavily populated and industrialised economies struggling with air pollution and its related health consequences.

Pressure on the industry has been further increased by the emissions scandal that began in 2015, where some manufacturers were found to be misrepresenting emission levels during testing, and a study by International Council on Clean Transport (ICCT) in October 2015 that found that permitted loopholes in emissions testing, such as driving on an unrealistically smooth surface and taping over door and window gaps, means that the average diesel vehicle emits seven times more NO_x emissions under real driving conditions than stated.

Consequently, the European air pollution regulation, intended to cut NO_x emissions by 68% between 2005 and 2015, has not been achieved.

NO_x emissions under the current test (blue) and real world (grey) procedure. Source: Faurecia



IMPACT ON VALUATION

We came to two conclusions that informed stock selection across our equity fund range:

- Margins and R&D budgets at traditional auto manufacturers will be under increasing pressure to comply with more stringent emission regulations.
- Some aspects of internal combustion (e.g. SCRs, platinum group metals in catalysts) might benefit, but we will also see manufacturers shift their R&D focus from internal combustion engine efficiency to greater electrification (e.g. hybrid, plug-in hybrid and pure electric).

Examples of how these conclusions have influenced portfolio construction include the following:

- We assessed the extent to which a company may need to pass the cost of complying with increasing regulation on to their customers and/or supply chain. This is particularly pertinent for manufacturers of medium and small diesel vehicles given those vehicles' lower sale price. This has informed our bottom-up stock selection of certain auto part suppliers in global and US equity funds.
- We analysed a number of companies based on their capability and strategy with electric and hybrid vehicles, particularly for our emerging market equity funds.
- We looked at companies that are well-placed to serve/support electrification efforts in the market, for example certain battery manufacturers.

EXAMPLE - VALUING POTENTIAL OPPORTUNITY OF ELECTRIC VEHICLES FOR LG CHEM

Korean integrated petrochemical manufacturer LG Chem is, amongst other things, a leading lithium-ion battery manufacturer, and has won contracts to supply electric vehicle batteries for international automotive manufacturers. LG Chem has been investing in new kinds of battery technology and we expect the electric vehicle segment to break even in 2016.

1. Valuing the opportunity

LG Chem is targeting Korean won 2 trillion (US\$1.73 billion) revenue from batteries by 2017. Using discounted cash flow analysis with an assumed operating margin and weighted average cost of capital, the analysts value the net present value of the electric vehicle battery revenue stream for the company to be US\$1.5bn-US\$3bn, representing 9%-18% of the company's current market value. This is based on LG Chem's currently known capacity plans and contracts, but still assumes a very small penetration of electric vehicles globally.

2. ESG assessment

Our assessment was that LG Chem has a good safety track record and can demonstrate extensive road testing. It has a strong history of good business execution and a positive reputation with customers and investors. These factors should position the company to be a preferred supplier of the new generation of battery technologies to the large manufacturers.

3. Market price

The market tends to be slow to price in structural changes, and LG Chem's electric battery segment is yet to contribute materially to its profits. Comparing the share price to peers, Lotte Chemical is a Korean petrochemical company with no exposure to electric vehicles and has outperformed LG Chem over 2015 on the back of a strong petrochemical cycle. In early 2016, Lotte and LG Chem trade at similar price-to-book valuations.

Our view was that the market was at that time not pricing in LG Chem's US\$1.5bn-US\$3bn electric vehicle potential. The long-term structural drivers of increasing environmental regulation for vehicle manufacturers and falling battery costs, as well as LG Chem's strong ESG profile, increase the probability that the company will achieve its revenue target from electric vehicle batteries and we believe that this could lead to a re-rating of the company by the market.

CASE STUDY: Fundamental

[BACK](#)

ASSESSING THE REVENUE IMPACT OF THE SDGS

Sector/Industry	Consumer staples	Company	Alliance Trust Investments
Integration technique	Revenue	Author	Martyn Jones

Our assessment of the consumer staples sector identified three business activities - the production of food, the production of household chemicals and the retail of them both - in which revenue can be driven by the Sustainable Development Goal (SDG) themes.

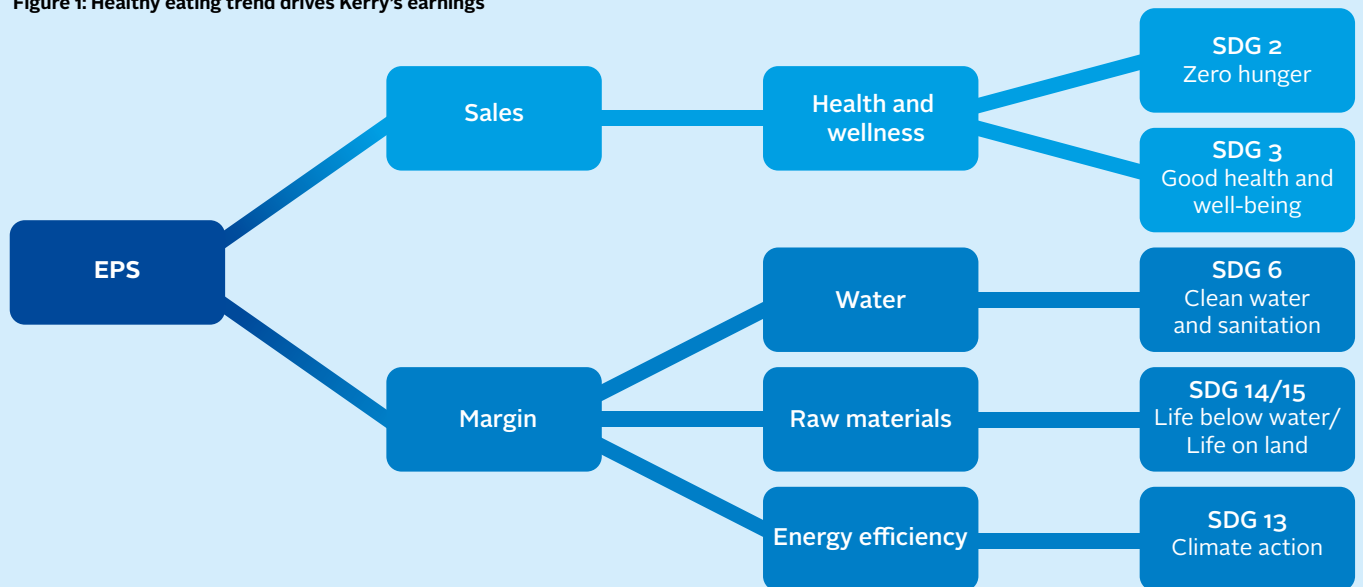
IDENTIFYING TRENDS

We assessed Kerry Group - a €14bn listed Irish company established in 1972 as a dairy cooperative that has evolved to be one of the largest and most advanced ingredients

and flavours technology companies in the world - as being exposed to Sustainable Development Goals 2 and 3, in particular target 3.4 to reduce pre-mature mortality from non-communicable diseases (NCDs) by a third. (Obesity is linked to myriad NCDs including Type 2 diabetes, heart disease and stroke. The prevalence of obesity has doubled since 1980 and is set to double again by 2030, with the World Health Organisation declaring obesity a global epidemic impacting emerging and developed economies.)

We found that the ingredients and flavour division, which accounts for roughly 75% of total Group revenues, will be

Figure 1: Healthy eating trend drives Kerry's earnings



materially impacted by structural trends towards healthy eating preferences: Kerry is sought out by food majors for its expertise in reformulating foods (reducing the calorie, sugar, salt and saturated fat content, whilst retaining the same taste, texture, feel and shelf-life) and for its development of healthier ingredients for new products.

Proactive disclosure of environmental, social and governance factors can help companies navigate through regulatory and reputational risks, and mitigation strategies can highlight opportunities for operational efficiency, especially when related to environmental impact reduction. Kerry Group is well positioned to address environmental

issues having implemented carbon, water and waste reduction programmes. The company has worked to address deforestation risks presented by its raw material inputs, and in 2014 moved to 100% RSPO-certified sustainably sourced palm oil. This helps to secure a sustainable supply for the future, protects against reputational risk and gives the large food manufacturers the opportunity to differentiate their offering with transparent labelling and traceable supply chains.



ASSESSING IMPACT

When assessing the growth of the ingredients and flavour division, we look at likely exposure to these key trends, resulting in multiple changes to our 2014-17 estimates for the company:

- We believed that the division's exposure to SDG 2 and SDG 3, and the associated acceleration in the shift toward healthier eating, would result in volumes growing at an average of 5%.
- Our top line revenue forecast was about 150bps ahead of consensus estimates, also enabling us to increase our margin expansion expectations as a result of the operational leverage.
- Integrating these factors resulted in projected earnings growing at a compound annual rate of 12%, over 100bps higher than consensus estimates, in turn improving expected return on capital.

We believed that Kerry, delivering steady growth and returns, would be recognised for its quality and would overtime develop a premium valuation relative to its peers. So far, our forecast of superior returns and valuation appreciation has been corroborated by the company outperforming the index and the sector since our analysis was conducted.

Risk warning - For investment professionals only. This document should not be communicated to, or relied on by, retail investors. Past performance is not a guide to future performance. Investments can go down as well as up. Investors may get back less than they originally invested. Examples of stocks are provided for general information only to demonstrate our investment philosophy. It is not a recommendation to buy or sell and the view of the Investment Manager may have changed.

Alliance Trust Investments Limited is a subsidiary of Alliance Trust PLC and is registered in Scotland No. SC330862, registered office, 8 West Marketgait, Dundee DD1 1QN; is authorised and regulated by the Financial Conduct Authority, firm reference number 479764. Alliance Trust Investments gives no financial or investment advice.

CASE STUDY: Fundamental

[BACK](#)

SUSTAINABLE WORKPLACE PRACTICES CAN HELP COMPETITIVE POSITIONING IN THE RETAIL SECTOR

Sector/Industry	Retailer	Company	ClearBridge Investments
Integration technique	Operating costs	Author	Neal Austria

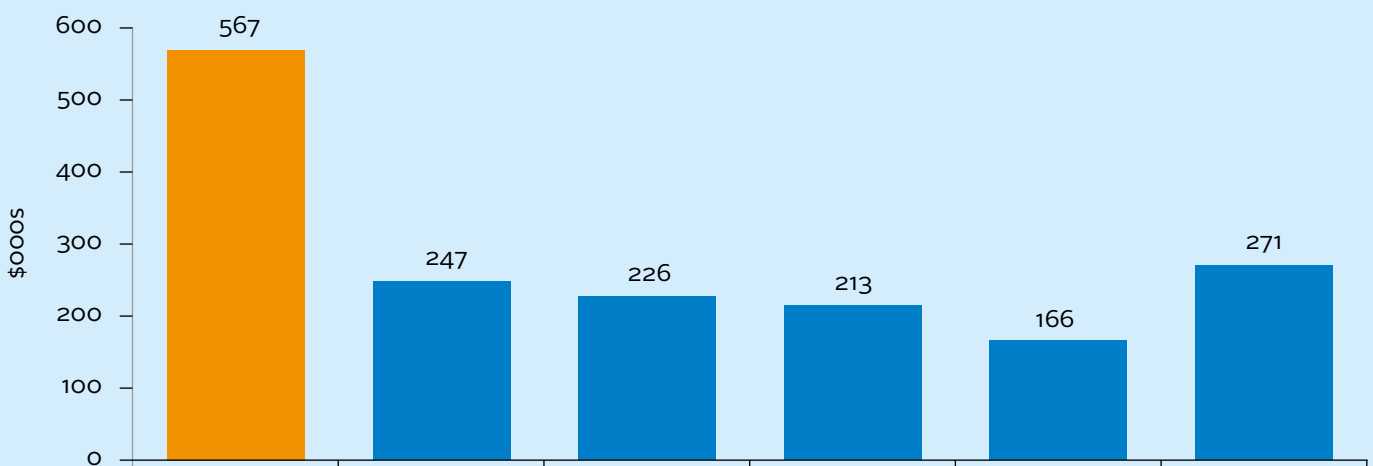
We evaluated a major US retailer whose unique model allows the company to successfully balance shareholder returns and customer value with employee and sustainability responsibility. The retailer operates a membership model whereby customers pay an annual fee in return for big discounts on products. The company stocks fewer product varieties than a typical retailer (around 3,700 items, compared to over 100,000 items at the largest US retailer), and predominantly stocks large pack sizes. As well as increased buying power allowing it to drive down the prices paid to suppliers and charged to consumers, the bulk purchase model benefits the company through:

- bulk packaging requiring less material – and using the same packaging to ship merchandise as to display it – which reduces costs while being environmentally friendly;
- bulk products being less labour-intensive to stock, allowing for significantly higher revenue generation per employee (orange column in figure 1).

We like the retailer as an investment due to:

- its high recurring stream of income from the annual membership fee (about 70% of operating profits);
- lower online disintermediation risk than other retailers due to already industry-low margins;
- believing its profitability will be less at risk from wage increases than its competitors due to its notable fair treatment of staff.

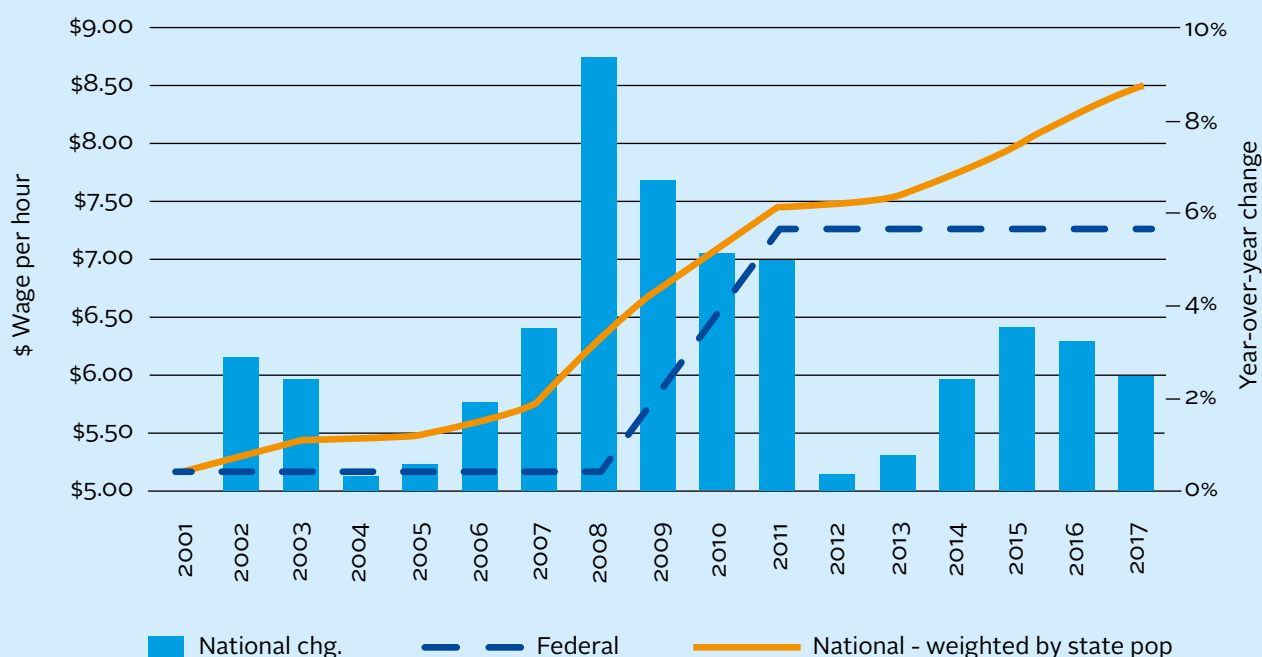
Figure 1: Revenue per employee. Source: ClearBridge Investments, company reports



One of the largest costs for retailers is employees, and the US is in an environment of an increasingly tight labour supply and rising minimum wages. In Massachusetts, the minimum wage has risen 38% over three years to US\$11 per hour and cities including Los Angeles are moving the minimum wage to US\$15 per hour by 2020. State-mandated minimum wage increases across the US are driving the national wage closer to US\$9 per hour even as the federal mandate stays unchanged at US\$7.25.

As an example of this impact, the largest US retailer announced it will raise its starting minimum wage to US\$10 per hour nationally and overall average hourly wages will reach around US\$12.50. This will come at a run-rate pre-tax cost of US\$2.7 billion, which has effectively reduced the company's earnings power 11% (Retailer 2 in figure 3). Another major retailer announced a similar increase in wages and will face an 8% drop in earnings (Retailer 3 in figure 3).

Figure 2: US federal minimum wage vs. state population weighted national minimum wage. Source: ClearBridge Investments, US Dept. of Labor



The retailer we evaluated pays significantly more than other retailers due in part to the high revenue generation per employee resulting from its warehouse membership model. The average SG&A expense per employee excluding occupancy and advertising costs (a useful proxy for wages and benefits), shows that this retailer pays its employees on average 27% above its peers.

The company tells us this contributes to low employee turnover, leading to better execution in stores (more efficient stock management/less theft and damage to on-sale items/store cleanliness), high revenue productivity and high membership renewal rates. The retailer already paying industry-leading compensation means that wage increases have less impact on profitability: earlier this year, our thesis was proven correct as the retailer announced changes to its pay structure with an EPS impact of just 2% (retailer 1 in figure 3).

Figure 3: EPS impact from wage pressure for three leading US retailers. Source: ClearBridge Investments, Bloomberg, company reports

	Retailer A	Retailer B	Retailer C
EPS 2014	\$5.02	\$5.07	\$3.16
Wage pressure	-\$0.08	-\$0.54	-\$0.25
Other factors	\$0.63	-\$0.34	\$0.58
EPS 2016	\$5.56	\$4.19	\$3.49
Wage pressure % of '14 EPS	2%	11%	8%
2-Year chg.	13%	-17%	10%
Wage pressure	-\$0.08	-\$0.54	-\$0.25
Potential impact on stock price*	-\$2.00	-\$8.64	-\$5.00
Potential market cap impact (\$mn)	-\$883	-\$28,011	-\$3,480
% of stock price at announcement	1%	-10%	-8%

*Includes 2-yr fwd p/e

CASE STUDY: Fundamental

[BACK](#)

CALCULATING MATERIAL ESG ISSUES' IMPACT ON FAIR VALUE

Sector/Industry	Semi-conductor	Company	RobecoSAM
Integration technique	Operating margin and discount rate	Author	Matthias Muller

To identify companies that are better positioned to create long-term value (and to demonstrate sustainability's contribution to long-term corporate value), we:

1. eliminate from the investable universe the companies with the weakest sustainability performance, based on the sustainability scores from our Corporate Sustainability Assessment (which is also used to determine the components of the Dow Jones Sustainability Indices (DJSI));
2. identify the most promising companies, from both a traditional valuation and sustainability perspective;
3. integrate sustainability information into financial models (economic value added model) and determine sustainability's contribution to the company's fair value.

IDENTIFYING PROMISING COMPANIES

The sustainability analyst benchmarks the performance of companies in a given industry on the most material sustainability factors. In parallel, the equity analyst determines whether the return potential of the underlying

business (as measured by the company's return on invested capital) is reflected in the market price (as measured by the company's enterprise value), or whether the company is trading at a discount and therefore represents a long-term buying opportunity (see horizontal axis in figure 2).

Looking at portfolio company Infineon, as an example for the semiconductor industry, the most material factors include innovation management, human capital management, corporate governance, business ethics, supply chain management and environmental management. Compared to industry peers Infineon received a positive overall sustainability profile, driven by its superior performance in innovation management, sector-leading human capital management and excellent corporate governance practices. However, there is a small negative impact from business ethics due to antitrust issues.

Infineon also showed a superior return potential relative to the sector, but because this was already partially reflected in the share price, the stock ranks only neutral on the valuation screen (figure 1).

Figure 1: Integrated view for investment idea generation

SUSTAINABILITY INDICATORS	POSITIVE	Company A	Infineon Technologies Company Y	
	NEUTRAL	Company B Company C	Company F Company G Company H	Company I
	NEGATIVE	Company D Company L	Company E	Company K
		UNATTRACTIVE	NEUTRAL	ATTRACTIVE
VALUATION INDICATORS				

INTEGRATING SUSTAINABILITY INTO VALUATION

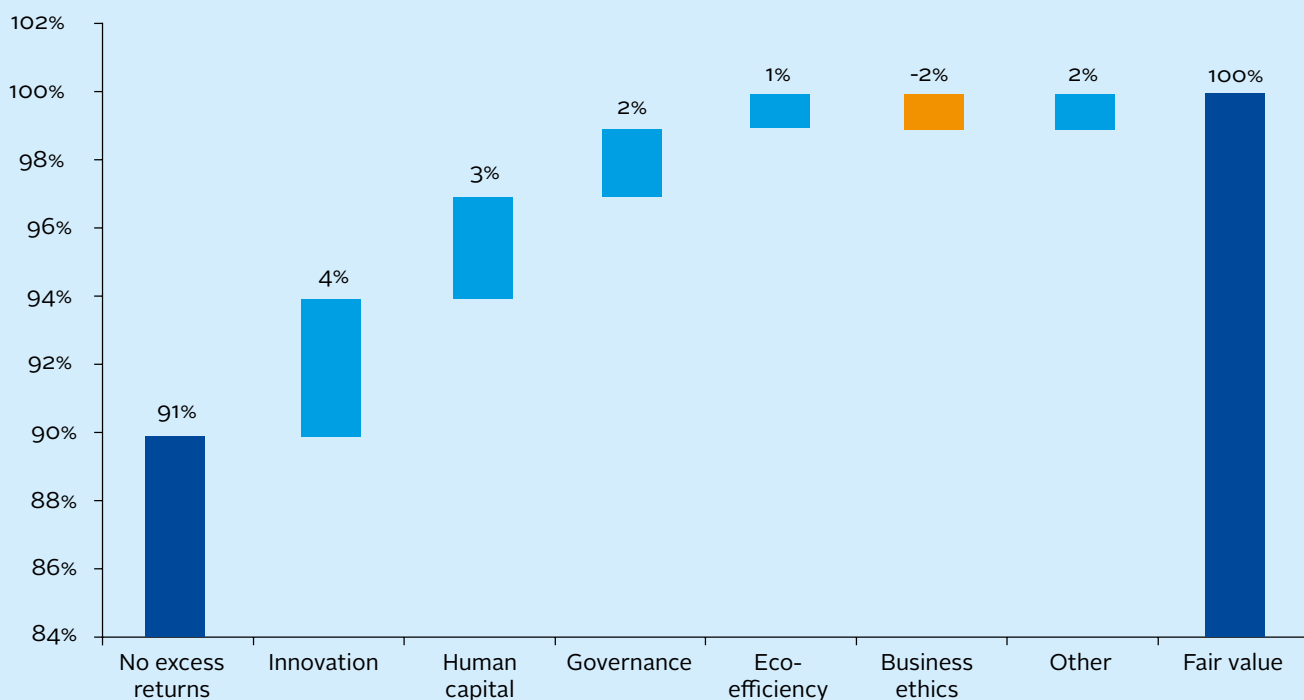
The equity analyst builds an economic value added (EVA) model, incorporating the information from the sustainability analyst by estimating the material sustainability issues' financial impact on the business value drivers (growth, profitability and risk).

In the example of Infineon, the sustainability analyst suggested a positive impact on growth and profitability (driven by the strong capacity to innovate and the leading position in human capital management), and no impact on risk (WACC). Operational efficiency gains from environmental initiatives also increased the operating margin. With sustainability factors integrated, we applied an operating margin above the historic five-year average operating margin of the company, and assumed strong organic revenue growth. The negative impact on the risk profile from antitrust issues was off-set by proactive corrective actions around business ethics and the generally good performance in corporate governance, resulting in no adjustment to the risk assumptions.

To extract sustainability's contribution to the overall fair value of Infineon, we applied an excess return model. In this model, the fair value with industry average returns applied is subtracted from the analysed company's total fair value, leaving the excess returns, which are attributed to sustainability (figure 2). This is then split proportionally according to the respective sizes of the positive and negative impacts identified previously.

For Infineon, innovation management, human capital management, corporate governance and operational efficiency gains from environmental issues have a positive 4%, 3%, 2% and 1% impact on the fair value while business ethics has a negative 2% impact.

Figure 2: Fair value attribution of sustainability for Infineon Technologies



CASE STUDY: Fundamental

[BACK](#)

EVALUATING ESG IMPACT ON PROJECT COSTS

Sector/Industry	Mining
Integration technique	Cash flow and operating costs

Company	Morgan Stanley Research
Author	Jessica Alsford, Alain Gabriel

Building desalination plants appears to be the mining industry's favoured solution to the issue of water scarcity. Chile is proposing a law directing all mines using more than 150 litres of water per second to incorporate seawater in their operations.

Our analysis suggests that desalination adds US\$2,000-US\$2,800 per tonne to capital intensity and US\$92 per tonne to annual operating costs. To maintain a minimum unlevered project IRR of 15% (pre-tax), this requires copper's US\$6,724 per tonne estimated price to rise by US\$400-US\$500 per tonne.

This incremental cost can have a material impact on project economics. We believe that the environmental scrutiny of Antofagasta's Los Pelambres expansion has reduced the project's IRR from 14% to 11%.

The 90kt-95kt copper project was initially planned to commence production in 2018, but we estimate that the two-three year delay in obtaining the environmental permit, resulting from the requirement to construct a desalination plant with associated infrastructure, means that volume growth at Los Pelambres will not materialise before 2021.

THE GROWING COST OF WATER

Water is critical to copper production: 78% of copper produced by the world's 20 largest mines is currently in water-challenged regions, with Chile (33% of 2014 global production) most affected. The problem is getting worse: global demand for water is set to exceed supply by 40% in 2030, whilst structural shifts in copper mining, such as a change in the targeted geology (lower grades and rising sulphide content), demand more water-intensive processes.

The use of fresh water, increasingly contested between mining companies and local communities, has been at the source of a dispute with Antofagasta.

Recent protests that led to a temporary stoppage of copper shipments from Antofagasta's largest mine are the most serious disruption yet and an indication of the heightened social scrutiny of Antofagasta's, and more generally the mining industry's, activities in Chile.

Project permitting has become more stringent, influenced by rising friction between local communities and mining companies in general around environmental issues, notably fresh water usage and the impact of mine tailings on nearby communities.

Figure 1: Additional investment in a water treatment facility will raise the capital intensity...

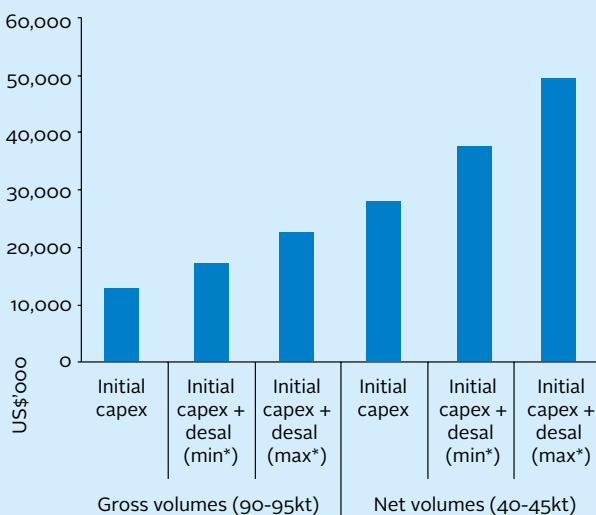
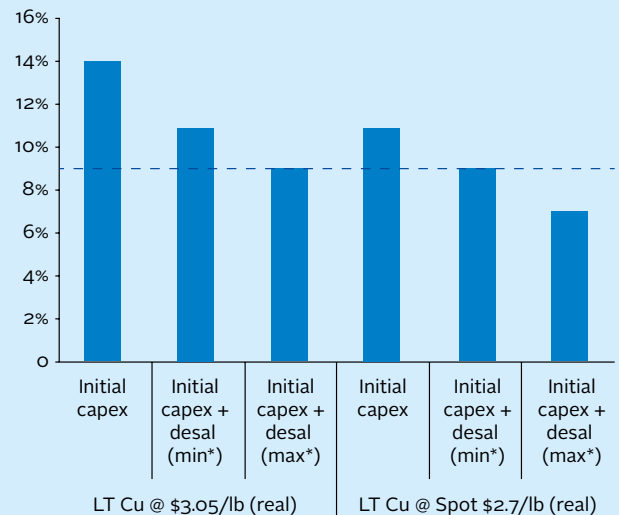


Figure 2: ...and reduce the investment post tax unlevered IRR from 14% to 11%





IMPACT OF INTEGRATION

In April 2015, we published a detailed report on Antofagasta, with a negative perspective on the company's copper mining operations. Due to production disruption from water usage disputes and permit delays for new projects, the analysts believed that the company's modest growth profile could deteriorate and additional capital on new infrastructure (i.e. the construction and running of a desalination plant) might need to be spent to deliver top-line growth and offset the impact of declining grades and rising rock hardness. This would increase capital employed per tonne about 48% by 2021, eroding benefits of a copper price recovery.

Maintaining additional infrastructure would also result in higher operating costs, further contracting margins. Additional spending and permitting delays were factored into the base case valuation.

This article is based on research published for Morgan Stanley Research on 22 July 2015. It is not an offer to buy or sell any security/instruments or to participate in a trading strategy. For important disclosures as of the date of the publication of the research, please refer to the original piece "[Insight: Copper & Water – expensive solutions](#)". For important current disclosures that pertain to Morgan Stanley, please refer to the disclosures regarding the issuer(s) that are the subject of this article on Morgan Stanley's disclosure website: <https://www.morganstanley.com/researchdisclosures>.

CASE STUDY: Fundamental

[BACK](#)

INCORPORATING DIVERSITY

Sector/Industry	Retail	Company	Trillium Asset Management
Integration technique	Discount rate	Author	Jeremy Cote

We integrated diversity, including gender and race at the company and board level into our investment research process as we see it as an essential component of sound corporate governance and critical to a well-functioning organisation: companies with strong gender and ethnic diversity outperform peers when measured by return on equity and other traditional financial metrics^{1,2}. Diversity also helps to reduce company-specific risk in the long term, leading to a lower cost of capital.

Our analyst will adjust the discount rate when valuing companies that have improving or deteriorating corporate governance factors that aren't believed to be priced in by the market.

At eBay we saw potential improvement in corporate governance related to the expected improvement in the board's gender diversity. Based on third-party research³, we adjusted the discount rate used in the firm valuation

analysis by 25bps. The table below shows the cost of capital calculation used in the discounted cash flow valuation model, the adjustment made for improving governance, the incremental percentage change in equity value and the expected incremental portfolio alpha.

In 2012, we began engaging portfolio companies with all-male boards and those lagging peers on diversity. A number of companies where we have filed, or co-filed, shareholder proposals have since appointed women to their boards. eBay committed to include gender and racial diversity among the qualities it seeks in its board members and the company appointed a second and third woman to its board in 2015.

	Base case valuation	Adjusted valuation
WACC	8.30%	8.05%
Intrinsic value estimate	\$32.00	\$33.40
Current stock price	\$28.50	
1-year expected stock return	12.30%	17.20%

Important disclosure: The information provided in this material should not be considered a recommendation to buy or sell the security mentioned. It should not be assumed that investments in such security has been or will be profitable. To the extent a specific security is mentioned, it was selected by the authors on an objective basis to illustrate views expressed in the commentary and it does not represent all of the securities purchased, sold or recommended for advisory clients. The information contained herein has been prepared from sources believed reliable but is not guaranteed as to its timeliness or accuracy, and is not a complete summary or statement of all available data. This piece is for informational purposes and should not be construed as a research report.

¹ "Does the Gender of Directors Matter?" Miriam Schwartz-Ziv November 2012

² <https://www.credit-suisse.com/us/en/about-us/responsibility/news-stories/articles/news-and-expertise/2012/07/en/does-gender-diversity-improve-performance.html>

³ El Ghoul, Sadok and Guedhami, Omrane and Kwok, Chuck C.Y. and Mishra, Dev R., Does Corporate Social Responsibility Affect the Cost of Capital? (July 1, 2010). Journal of Banking & Finance, Vol. 35, Issue 9, pp. 2388-2406, September 2011. Available at SSRN: <http://ssrn.com/abstract=1546755>

CASE STUDY: Fundamental

BACK



CALCULATING ESG IMPACT ON BETA

Sector/Industry	Food
Integration technique	Beta

Company	Sycomore Asset Management
Author	Bertille Knuckey

Investing in European food companies presents clear environmental and social risks as well as considerable opportunities (the sector as a whole should benefit from further population growth).

As a bottom-up, long-term investor, we have developed a valuation tool that factors ESG considerations into investment decisions to find companies able to generate sustainable value.

ASSESSING THE OPPORTUNITIES AND RISKS

OPPORTUNITIES

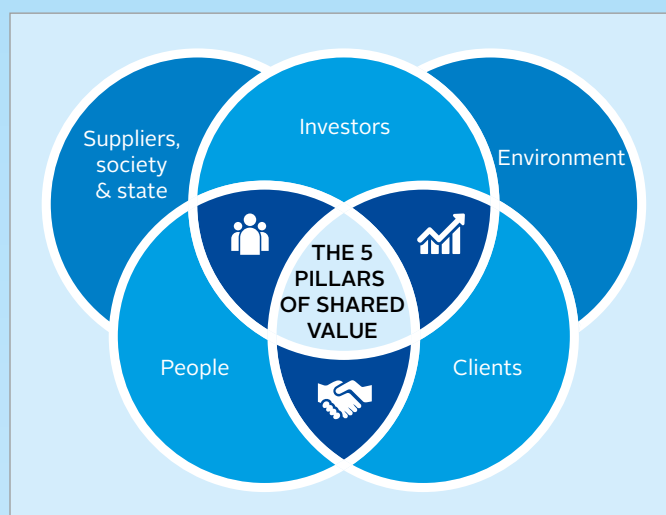
Estimates indicate a gap of nearly 70% between the amount of food available today and that required by 2050. Closing this gap, while improving the quality of our food, protecting the environment, replenishing strained resources, recognising the value of those who farm the land and wasting less along the food chain, will be part of private and public sector policies over the next thirty years.

RISKS

- Environmental risks:
 - Agriculture represents approximately 10% of greenhouse gas emissions in the EU and the US. The extensive use of monocultural fields has led to biodiversity loss. Nutrient degradation and erosion affect soil quality. Resource depletion and pollution to water and air are also concerns.
- Economic and, hence, social risks:
 - Large food producers and distributors shifted the balance of power, now reaping most of the pricing power to the detriment of farmers.
 - Political instability (e.g. 2014 Russian ban on EU food products, end of European milk quotas) has led to sharp falls in prices of certain food products, further impacting farmers' revenues.
 - More rigorous environmental and animal-welfare standards have raised farmers' costs significantly over the past ten years.
 - Consumers are eating less meat – very few categories, like poultry, are still growing.
 - Farmer-led protests often impact the economy as a whole.

INTEGRATING OPPORTUNITIES AND RISKS INTO MODELS

As a proxy for gauging the sustainability of a company's business model, we look at whether it creates value for its stakeholders: suppliers/society/states, people, investors, clients and the environment (SPICE). The SPICE model structures our financial and ESG research work and is fully integrated into our proprietary research and valuation tool.



Each company in the investment universe is given a SPICE rating, and the fund manager reviewing the stock is responsible for keeping the analysis up-to-date. The SPICE rating is used to adjust a stock's beta:

SPICE rating	Beta adjustment
A+	-20%
A	-10%
B	0%
C	+10%
C-	+20%



IMPACT OF INTEGRATION

The table below shows food-related examples of how ESG issues, which represent over 65% of our SPICE rating, have affected companies' adjusted beta.

Company name	Initial beta	SPICE score	Key ESG pros and cons	Adjusted beta
Bonduelle	1.25	A	Pros: <ul style="list-style-type: none"> ■ real engagement towards employees and suppliers ■ agricultural techniques aimed at reducing environmental impact ■ board members engage in dialogue with investors Cons: <ul style="list-style-type: none"> ■ governance structure that leaves little rights to minority shareholders 	1.13
Casino	1.15	B	Pros: <ul style="list-style-type: none"> ■ one of the first to raise environmental awareness through product labelling Cons: <ul style="list-style-type: none"> ■ complicated, relatively high-risk accounting structure ■ antitakeover mechanisms 	1.15
Fleury Michon	1.35	A	Pros: <ul style="list-style-type: none"> ■ huge efforts on product quality and authenticity ■ raising transparency standards in the food supply chain and in product labelling Cons: <ul style="list-style-type: none"> ■ inherently difficult jobs with relatively high absenteeism and health and safety concerns 	1.22
Tesco	0.80	B	Pros: <ul style="list-style-type: none"> ■ global plans to trade responsibly, tackle risks in the supply chain and build lasting relationships with suppliers ■ board members engage in dialogue with investors Cons: <ul style="list-style-type: none"> ■ it will be a while before great objectives become business as usual all around the world ■ fraud and accounting risks 	0.80
Unilever	0.70	A	Pros: <ul style="list-style-type: none"> ■ sustainability leadership in setting highly ambitious 2020 targets Cons: <ul style="list-style-type: none"> ■ more work is needed on setting single global standard for product content and formulation 	0.63
Wessanen	1.05	A+	Pros: <ul style="list-style-type: none"> ■ healthy natural and organic products ■ commitment to the environment, employees and suppliers 	0.84

CASE STUDY: Fundamental

[BACK](#)

MATERIAL ESG ISSUE SCENARIO ANALYSIS

Sector/Industry	Healthcare
Integration technique	Scenario analysis

Company	RBC Global Asset Management
Author	Ben Yeoh

Rather than having separate ESG analysts, our Global Equities team's portfolio managers perform and integrate ESG analysis to allow us to better fundamentally value and assess stocks, completely integrate ESG information into our investment process and meaningfully engage with the companies in which we are invested. We also use multiple sources of ESG information as it represents a plethora of ESG-related opinions that require interpreting, and portfolio managers are best placed to filter this advice and ascertain how it relates to a company's business model and valuation. (In our experience, the ratings of two major ESG research providers only correlate just over half of the time and proxy voting agencies occasionally take opposing views on proxy votes.)

We start with a fundamental analysis to identify any material positive or negative ESG factors. We embed that assessment into an analysis of the competitive position and the sustainability of the business, which we then put into our valuation models. We invest only in companies that perform strongly in all four areas of our model: business model; market share opportunity; end-market growth; management & ESG.

Our Global Equities team identified several ESG risks (contingent liabilities) and opportunities (contingent assets) for UnitedHealth (UNH), a leading healthcare insurer and healthcare cost management and IT provider managing 5% of US healthcare spending.

RISKS

As custodians of the personal and medical details of millions of people UNH needs to keep this data secure: false savings here can have long-term consequences, including regulatory risks, political risks and the potential impairment of the company's social contract with customers and wider society.

We challenged management on the risk of privacy data breaches, asking how that risk is being managed and what policies are in place to mitigate that risk. Management acknowledged that information about their data security was not available on their website, but several management members reassured us about the quality of the policies, training and general operation management of data handling and security that are in place. Nevertheless, we still modeled a discounted cash flow (DCF) valuation scenario looking at the possible impact of privacy data breaches.

We learned that UNH had a historic stock option accounting problem (backdated without disclosure to lower the strike prices for the then CEO), which came to light in 2006. However, we noted that many other companies, such as Apple, had similar stock option accounting problems in the late 1990s to mid-2000s. We also discovered that in UNH's case it led to the start of a complete turnaround in the company's corporate governance policies and practices, and determined that the current compensation structure was fair and, importantly for us, included a return on capital/equity component.

Our conversations with UNH gave credence to the recent positive reports from two proxy voting agencies regarding the company's governance practices; there do not appear to be remaining accounting or management problems that had been indicated in earlier analysis.

OPPORTUNITIES

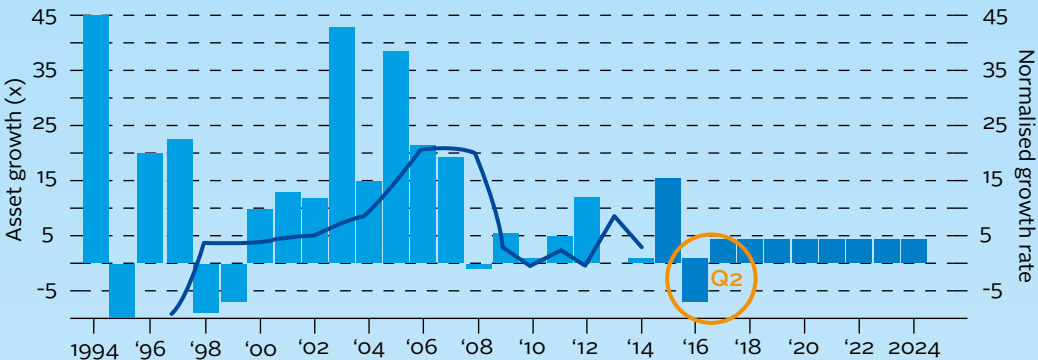
We viewed UNH's Optum data analytics business, which allows it to create cheaper, better healthcare options for businesses, governments and patients, as a strong competitive advantage and an ESG contingent asset. For instance, it identified 150 diabetic patients not taking their medication properly, 123 of whom were in Texas, which enabled its client to implement location-specific measures utilising preventative health techniques. Using Optum's data analytics, the state of Maryland discovered clusters of patients with asthma in certain streets and buildings, and found that those buildings correlated with cockroach infestations, allowing it to successfully prosecute deficient landlords and ultimately raise living standards for tenants.

IMPACT ON ANALYSIS

We assessed the materiality of all of this information and assigned a rating for the four components of the company's strengths (business model; market share opportunity; end-market growth; management & ESG). We then performed a DCF scenario analysis embedding the material ESG risks and opportunities. We prefer DCF and explicit model scenarios for sales, margins, asset turns, etc. as we see them as a more accurate method of modeling than an adjustment to a discount rate or terminal value. We also perform sum of the parts and standard financial ratio assessments.

The analysis was peer reviewed within our team, and the assumptions were stress-tested, challenged and refined before the rating and valuation were confirmed. In our peer review, assumptions are flexed in real time to see how further valuation scenarios change. These include increasing

EBIT margins and sales growth for the upside scenario, and for the downside scenario normalising sales to a lower growth rate (3%) and looking at the sales impact over more than one year.

Base case DCF scenario (a cash flow return on investment framework)	44% target company share price upside
ESG asset scenario (upside scenario): value generated from contingent assets through the use of big data analytics. Assumptions: Sales increased by 1-2% in years 5-10, but with similar EBIT margins and asset turns to the base case. Cost of capital remains the same.	+12 percentage point
ESG liability scenario (downside scenario): assuming a data breach occurs that impacts the business (sales, margins, asset growth) for a year before recovery.  Assumptions: Approximate 7% impact to sales in the year of data breach, with a 3% impact to EBIT margins, recovering in future years back to 5% sales growth, but on EBIT margins 1-2% lower than the base case forecast. Cost of capital remains the same.	-17 percentage point

CASE STUDY: Fundamental

[BACK](#)

REVENUE FORECAST ADJUSTMENT AND SCENARIO ANALYSIS

Sector/Industry	Textiles
Integration technique	Revenue and scenario analysis

Company	Caravel Management
Author	Usman Ali, Jamieson Odell

We identified a leading textile company in Pakistan as a beneficiary of increased European Union (EU) trade quotas. The EU recently awarded Pakistan GSP+ status, which is awarded to developing countries who can demonstrate sound management of ESG issues and provides preferential treatment for trading with Europe.

OPPORTUNITIES

As an exporter to blue chip global clothing and household goods firms, the company has a strong track record of supply chain compliance and as a result has the potential to materially increase garment exports to Europe.

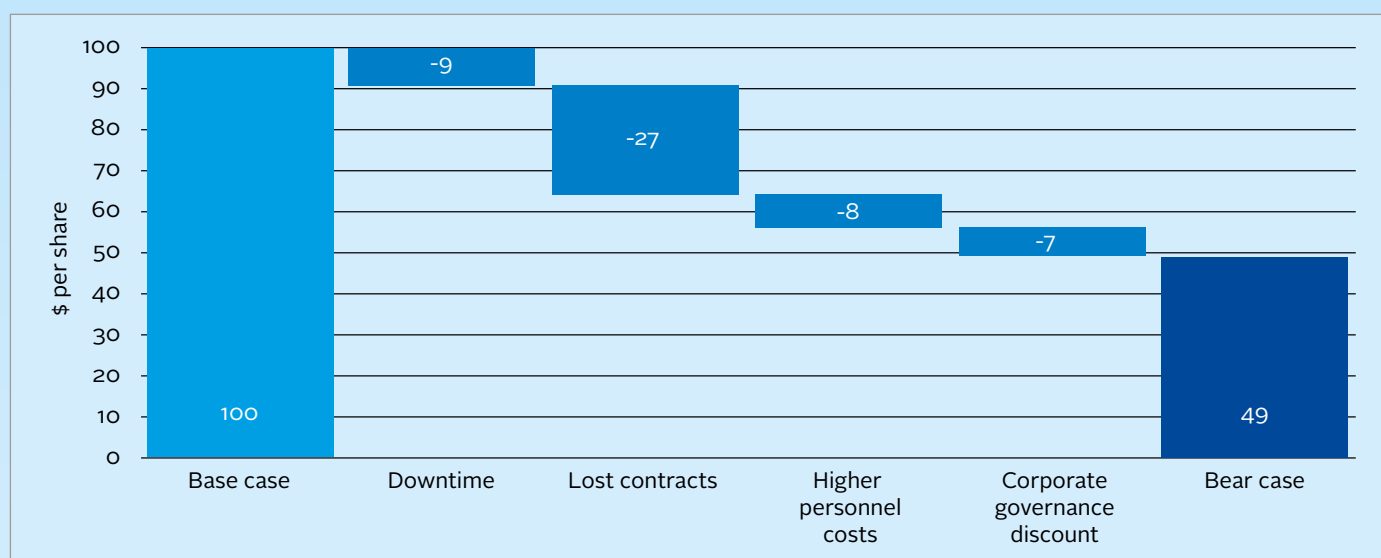
We expect that the company will double garment production to 12.5 million pieces per year over three years, and that this will add 10% to revenue growth and 12% to gross profit. Consolidated gross margins are expected to expand from 15% to 16% given the higher margins of the European garment business.

RISKS

Although there are no known cases of child labour throughout the company's supply chain, the risk exists in Pakistan, as demonstrated by data from the International Labour Organisation. Failing to meet labour standards could compromise the company's ability to export to Europe.

We model a downside scenario to reflect the consequences of potential supply chain issues. Compared to a base case of US\$100 per share, the downside scenario produces a fair value of US\$49 per share. Whilst a probability can be applied to the bear case to determine a risk-adjusted NAV, the value of this approach is to quantify the downside risk under a specific negative ESG-related event.

- **Downtime:** Should labour issues come to light, we assume six months of downtime related to addressing these issues, based on historical occurrences at similar companies in the region. The base case revenue for the export segment of the company is halved, bringing the target price down by US\$9 per share.
- **Lost contracts:** We assume that the company loses one third of its contracts as a result of child labour issues. As a result, the target price is brought down by an additional US\$27 per share.
- **Higher personnel costs:** Based on government penalties and historical occurrences, hiring new staff and compensating victims and their families were assumed to increase personnel costs by 10% in perpetuity. Accordingly, the target price is brought down by US\$8 per share.
- **Corporate governance discount:** Given the above events, we reach a new net asset value. We apply a 10% corporate governance discount to the NAV bringing down the price per share by a final US\$7. This produces a bear case scenario of US\$49 per share.



CASE STUDY: Fundamental

[BACK](#)

UNDERSTANDING THE MATERIALITY OF TAX AVOIDANCE

Sector/Industry	IT services
Integration technique	Scenario analysis

Company	MFS Investment Management
Author	Rob Wilson

In mid-2013, our ESG research analyst observed several signs suggesting that both regulations and societal expectations regarding multinational tax minimisation strategies were changing, including that debt-laden developed countries are losing hundreds of billions of dollars annually due to the use of aggressive tax minimisation strategies. According to the Organisation for Economic Co-operation and Development (OECD), developing countries lose more to tax avoidance than they receive in foreign aid. These data points, along with others, contributed to our conviction that corporate tax avoidance would become a focus for regulators globally.

After researching common tax avoidance strategies used by multinationals, we identified an initial group of the potentially higher risk companies by analysing each firm's tax gap: the difference between the weighted average statutory tax rate for a company based on its geographic sales mix and the effective tax rate shown on the company's income statement.

For the companies with the larger tax gaps, we reviewed several other factors, placing particular emphasis on companies exhibiting or benefiting from:

- large or growing unrecognised tax benefits balances;
- very low foreign effective tax rates;
- new disclosures or changes in language used in the company's tax footnote;
- recent media or governmental scrutiny regarding their tax practices.

We identified a number of companies, and engaged with their management teams to fine-tune our risk assessments.

IMPACT ON ANALYSIS

To analyse the financial materiality of the issue, our ESG research analyst gave a detailed thematic presentation, which was followed by security-level, tax-related research that was conducted in close collaboration with our industry analysts and portfolio managers.

As a result of this work, the weightings of multiple portfolio holdings have been reduced, and several analysts have normalised (increased) the tax rates used in their financial models. In some instances, analysts have also incorporated sizable tax increases into their downside scenario analyses to understand how the security might be impacted if significantly higher tax rates were imposed.

One simple example of our work in this area relates to an IT services company. After researching the firm's tax strategies and engaging with its chief financial officer, our ESG analyst determined that the firm's tax rate was likely to remain relatively stable over the next several years; however the analyst covering the stock chose to develop a bear case scenario that incorporated the risk of faster regulatory action, to ensure that the broader team understood the potential downside in the stock (figure 1).

Figure 1

	Base case analysis	Bear case analysis
Effective tax rate	14%	20%
P/E multiple	14.5x	12.5x
Pre-tax EPS impact		-2
Tax rate EPS impact		-7
Total EPS impact of bear case adjustments		-9%
Downside Vs. base case		-21%

This firm has a high proportion of recurring revenues, which otherwise would have led to minimal downside scenario adjustments. However, the addition of a higher tax rate and the associated impact on valuation and investor sentiment that would likely result from the tax risk being realised led to a bear case scenario in which EPS was estimated to fall 9% below the analyst's base case assumption, resulting in more than 20% downside potential in the stock's fair value.

LINKING HEALTH AND SAFETY TO OPERATING MARGINS

Sector/Industry	Packaging	Company	Robeco
Integration technique	Operating margin	Author	Willem Schramade

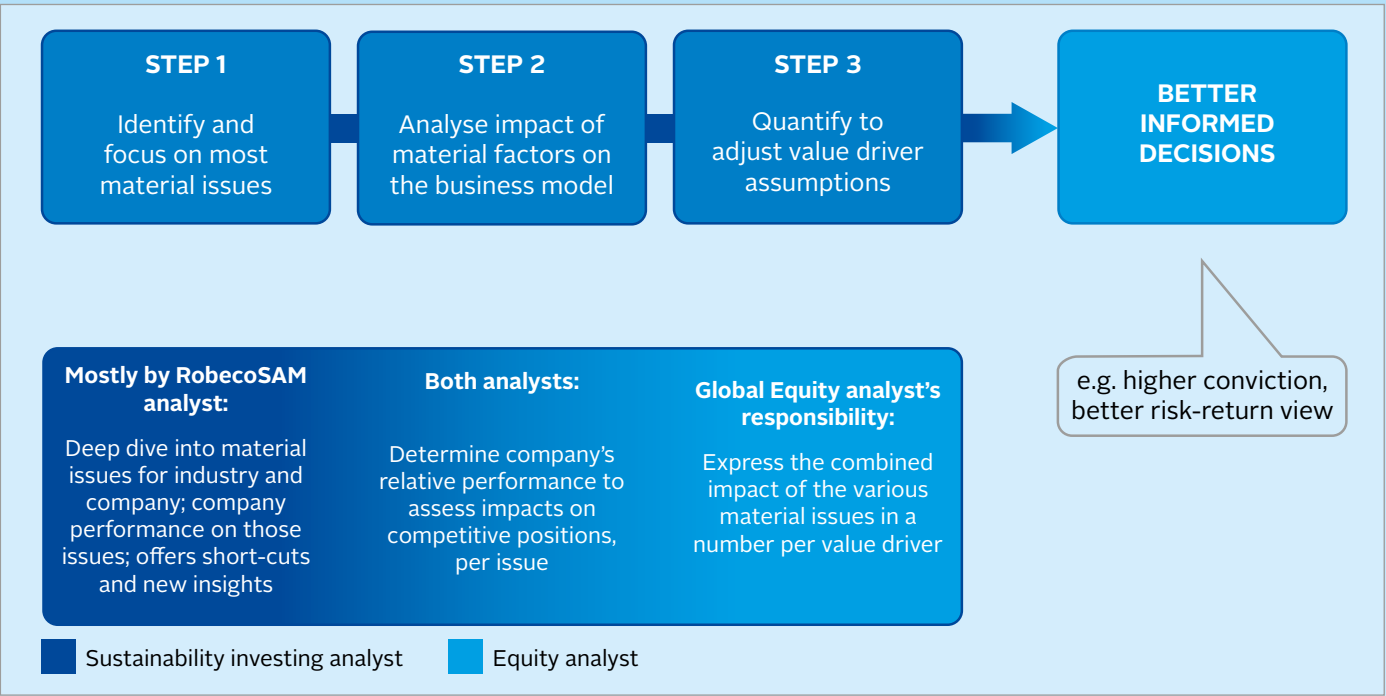
A packing company in our portfolio is one of the largest rigid can manufacturers in the world, enjoying high market share through oligopolistic markets. Given its large manufacturing footprint, operational health and safety is a major issue. The company claims to pay a lot of attention to it, but could do better in terms of measurement, reporting, and analysis.

In addition to the items it already reports, it could start reporting its lost time accident rate, as some of its peers do. More importantly, it could explain how safety permeates its culture and drives operational performance.

Aluminium maker Norsk Hydro is a major supplier to the company and has found a strong, positive relation between safety and operational efficiency at its plants. If the packaging company were to get an overview of this for its 150 plants, it could likely enhance value.

OUR PROCESS

We integrate ESG factors into valuation models and decision-making by linking the most material ESG issues to competitive positions and value drivers.



When building an investment case, our equity analysts consult their sustainability investing counterparts on their respective sector for an assessment of the company's most material factors. Based on our proprietary sustainability database, additional analyses and discussions with the equity analyst, the sustainability investing analyst then expresses an opinion in a company profile, which lists the most material issues for the company, how is it performing on those issues (absolutely and relatively) and how that affects its competitive position.

Subsequently, the equity analyst gives feedback and assesses how much better or worse the firm performs or will perform versus its peers as a result of its ESG strengths and weaknesses: if the analyst concludes that a company derives a competitive advantage from an ESG issue, then that should be reflected in value drivers that are stronger than its peers, e.g. higher growth, higher margins or a lower capital burden.

In almost half of cases, no change in the value drivers is made, either because the ESG factors cancel each other out, insufficient conviction is reached, differences within the industry are minor or the company is just average. But even then, this analysis typically give the equity analyst a deeper insight into the quality of company management and the risks involved.

IN PRACTICE

For our portfolio packaging company, the sustainability investing analyst identified weaknesses in reporting on material issues: the company lacks a framework for identifying and monitoring the most material sustainability issues. As mentioned above, the company claims a commitment on safety and provides some data on it, but there are no targets and KPIs. The company would benefit from analysing those data at the plant level and linking them to other performance metrics and potentially to personnel evaluation. The same applies to measures of environmental management, supply chain management and human capital.

After engaging with the company on these issues, the CFO and investor relations team acknowledged the potential for improvement. On our second call with them, they showed some improvements in their disclosure and had appointed a chief sustainability officer to help address them. They also told us they were working on a materiality assessment and subsequent target setting, as well as on improving their IT systems to allow for more rigorous analysis of indirect financial items such as safety.

The packaging company could potentially save several hundred millions of dollars through better analytics on the relation between margins, safety records, and materials use at individual plants. That would imply a margin expansion of several hundred basis points.

Various degrees of improvement imply the following impact on target price:

	Base scenario: no ESG improvement	Decent ESG improvement scenario	Very strong ESG improvement scenario
EBIT margin	11.5%	12.5%	13.5%
NOPAT margin	8.9%	9.6%	10.4%
Upside potential to the target price	9%	22%	38%

QUANTITATIVE STRATEGIES

OVERVIEW OF QUANTITATIVE STRATEGIES

Quantitative (quant) strategies harness data, using mathematical models and statistical techniques to outperform their benchmarks.

Quant managers define models and rules that make investment and/or portfolio weighting recommendations. Quant managers will for example make predictions on future asset price movements and/or company fundamentals, based on technical and/or fundamental data, both historical and forecast.

The investment process can be typically divided into the following three stages:

1) Analysing data and statistical testing

Some quant managers use statistical techniques to identify relationships between datasets over different investment horizons, and look for patterns, correlations and/or factors that drive asset price movements. Other quant managers will use valuation techniques to identify mispriced securities.

2) Building models and back-testing

Quant managers write algorithms, which form the basis of their models. Back-testing shows how they perform using historical data, to indicate whether they are likely to generate superior returns.

3) Implementing strategy

If the back-testing is considered successful, quant managers will implement the model. Changes in market conditions have the potential to make purely statistical approaches defunct and may require managers to restart the process, identifying new relationships and developing new algorithms.

Computers can run the models and produce suggested investment decisions. Systematic rules and portfolio construction techniques, along with integrated risk management tools, lead to portfolio weighting recommendations.

Some models are integrated into managers' trade order management systems to facilitate execution. Many quantitative managers have risk management procedures in place to ensure that model output reflects the investment teams' strategy and intentions.

perform statistical techniques to identify correlations between ESG factors and price movements that can generate alpha and/or reduce risk.

The quant managers that perform ESG integration have constructed models that integrate ESG factors alongside other factors, such as value, size, momentum, growth, and volatility. ESG data and/or ratings are included in their investment process and could result in the weights of securities being adjusted upwards or downwards, including to zero.

There are two main approaches to integrating ESG factors into quantitative models. They involve adjusting the weights of:

- securities ranked poorly on ESG to zero, based on research that links ESG factors to investment risk and/or risk-adjusted returns;
- each security in the investment universe, according to the statistical relationship between an ESG dataset and other factors.

New Amsterdam Partners' portfolio construction process uses the first approach. They found a positive correlation between ESG ratings and risk adjusted returns since the 2008 financial crisis, and their quant model adjusts the weights of stocks rated poorly on ESG to zero for

CASE STUDY

Linking ESG ratings to returns and volatility
– New Amsterdam Partners



CASE STUDY

Selecting stocks through a modular investment process
– Arabesque Asset Management



CASE STUDY

Shaping the portfolio with an ESG materiality profile
– Auriel Capital



CASE STUDY

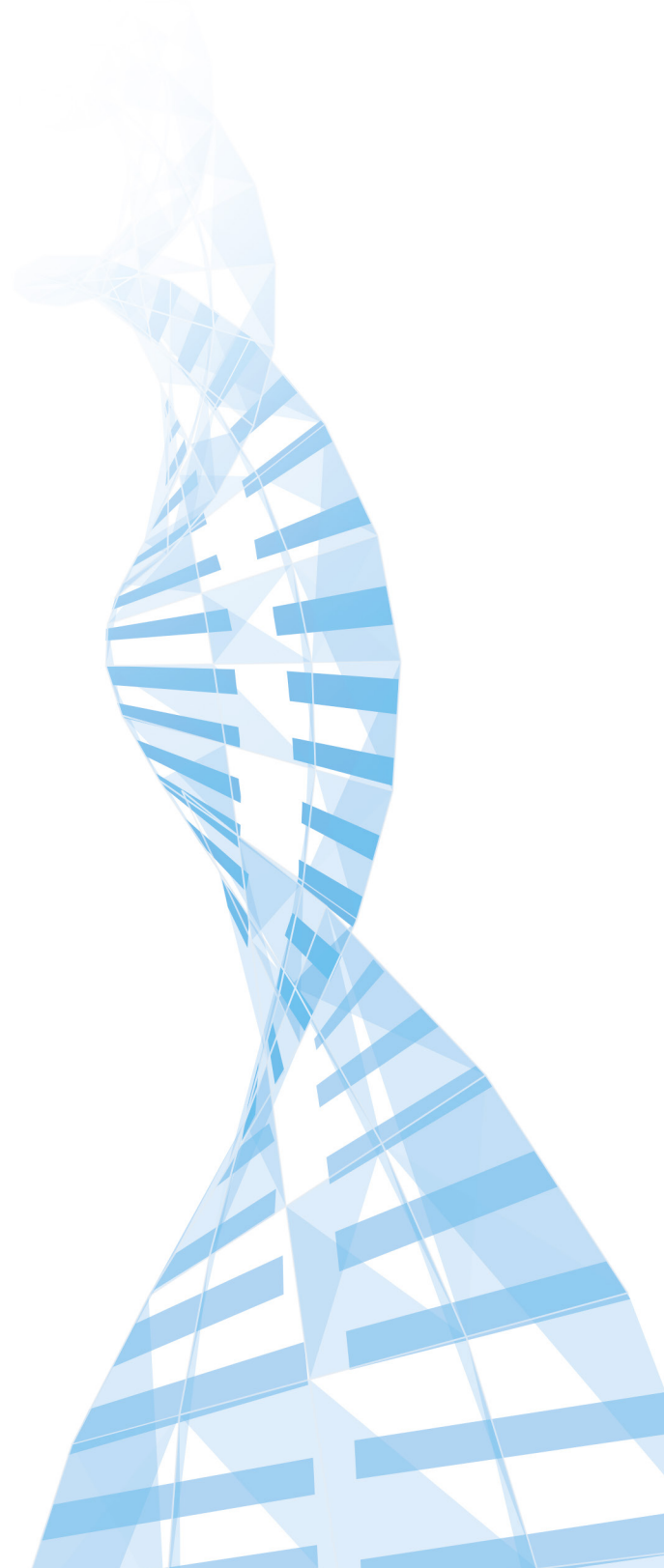
Enhancing forecasted total risk models –
Analytic Investors



ESG integration has historically only been associated with fundamental strategies, but this perception is slowly changing as several quant managers are now integrating ESG factors into their valuation models and investment decisions. As ESG data becomes more prevalent, statistically accurate and comparable, more managers are likely to

all portfolios. Asset Management also see a correlation between ESG and company/investment performance, and reduces the weights of stocks that do not pass their sustainability process to zero.

Auriel Capital and Analytic Investors provide examples of the second approach. Auriel Capital uses their research on the statistical relationship between ESG factors and investment returns to create an ESG score that adjusts the weights of securities in their portfolio. Due to their research into the links between ESG ratings and future risk, Analytic Investors' investment process uses a risk-scaling process to ratchet down the stock-specific maximum position limit as a company's ESG rating falls.



CASE STUDY: Quantitative

[BACK](#)



LINKING ESG RATINGS TO RETURNS AND VOLATILITY

Company	New Amsterdam Partners
Author	Michelle R. Clayman

ESTABLISHING A RELATIONSHIP

Researching the relationship between ESG ratings and stock returns, volatility and risk-adjusted returns since the 2008 financial crisis, we found that higher return companies in aggregate had better ESG ratings, but that there was a stronger (negative) correlation between ESG ratings and stock volatility, and this relationship was even stronger when market volatility was higher. The results held after controlling for sectors. The correlation between ESG rating and risk-adjusted return turned significantly positive in recent years, and this positive correlation strengthened further by removing the lowest-rated stocks.

The negative relationship between ESG and volatility was explored in greater depth, given the well-documented low volatility anomaly (outperformance of low volatility stocks). Chi-square frequency tests – used to evaluate whether to reject or fail to reject a statistical hypothesis – showed that stocks rated high on ESG tended to be in the low volatility group, and vice versa, and that the ESG rating had an impact independent of the low volatility effect.

Deleting the lower tail of ESG-ranked companies did not harm portfolio returns (including risk-adjusted), tending to improve the probability distribution of returns with a higher average and higher maximum.

INTEGRATING INTO INVESTMENT PROCESS

We integrate ESG research within the investment team and research reports, which include an ESG section to be completed by each investment analyst.

Our investment process starts by using a proprietary valuation model to compute expected returns for equities. A research universe is created of the highest expected return stocks, which are then analysed using traditional fundamental analysis techniques (market share and competitive analysis; financial analysis and valuation analysis). Within the final stage, ESG research informs the portfolio construction process to adjust the weights of poor ESG-rated stocks to zero for all portfolios.

INVESTMENT DECISION IMPACT

Kroger is a fundamentally attractive-looking supermarket chain, with a PE ratio around the levels of its peer group but a much higher return on equity (ROE), along with a solid balance sheet and a history of consistently beating estimates. Looking past those numbers, however, a number of ESG-related controversies raise concerns, including health and safety issues, supply chain labour standards, and an incident involving faulty reimbursement claims that resulted in a fine. Some of its stores also sell firearms, which is an issue for many investors. When passing through our portfolio construction process, these issues caused the weight of the stock to be reduced to, zero leaving it out of our ESG portfolio.

CASE STUDY: Quantitative

[BACK](#)

SELECTING STOCKS THROUGH A MODULAR INVESTMENT PROCESS

Company	Arabesque Asset Management
Author	Andreas Feiner

Between ESG and company/investment performance we see not a causality but a relatively stable correlation. Our rules-based and quantitative strategy includes fundamental analysis, portfolio optimisation and risk management, as well as our sustainability process. The strategy has daily liquidity and does not use leverage, shorting, derivatives or stock lending, and can be offered as segregated accounts. The three-stage investment process consists of:

1. a sustainability process;
2. fundamental security analysis;
3. quantitative risk and investment technology.

1) SUSTAINABILITY PROCESS

Applied: Quarterly

Our sustainability process prepares the investment universe. It has four steps:

- forensic accounting (which identifies companies with aggressive accounting and governance practices);
- UN Global Compact compliance;
- proprietary ESG scores;
- preference-based screens such as industry or company exclusions.

We apply the process to the 77,000 stocks in our database, reducing the weights of the stocks that do not pass to zero, resulting in an eligible investment universe of about 1,200 stocks.

When calculating our proprietary ESG scores, we analyse more than 200 ESG criteria from four data providers. This ESG information is then mapped into twelve sub-categories: five for environmental issues, four for social and three for governance.

To calculate best-in-class scores for companies, we identify the most material issues per sector and apply a proprietary weighting to each. The resulting ESG score is a combination of qualitative research and quantitative and statistical analysis, to avoid spurious correlations and to aid implementation and constant quality checks.

2) FUNDAMENTAL SECURITY ANALYSIS

Applied: Quarterly

For each of the roughly 1,200 stocks in the eligible investment universe, we calculate three scores based on financial data. Standard concepts such as g-score and

f-score (identifying companies with good growth prospects and strong balance sheets) are applied together with our proprietary earnings pressure measure, based on sell-side broker research. We then apply to companies' earnings estimates a statistical model driven by behavioural economics (again based on sell-side broker research).

3) QUANTITATIVE RISK AND INVESTMENT TECHNOLOGY

Applied: Daily

The quantitative investment model selects up to 100 stocks from the approximately 1,200 in the eligible investment universe. It consists of:

- an asset allocation model, which is driven by the aggregate momentum of each stock;
- a CVaR-Portfolio optimisation that integrates into its target function g-score, f-score, earnings pressure and the individual prices of all stocks in the investment universe.

Applying the analysis daily enables us to protect the assets of the investor in times of volatility or larger stock market drawdowns.

IMPACT ON STOCK SELECTION

Our process is a much more thorough and nuanced approach than simply selecting investments based on individual environmental, social or governance factors. For example, US solar power developer SunEdison could be deemed an attractive ESG proposition based solely on its environmental credentials, but the stock price has collapsed (as of early April 2016, the company is preparing to file for bankruptcy) after word came out that both the Securities and Exchange Commission and the Department of Justice were to investigate the company primarily over alleged overstating of cash positions.

When passing through our Sustainability Process, SunEdison had always scored poorly on accounting and governance risk (AGR), indicating an increased likelihood of running into litigation because of aggressive accounting practices. Consequently, the stock never passed the sustainability process and its weight was reduced to zero, meaning despite its environmental credentials it was not in our portfolios when the stock price collapsed.

CASE STUDY: Quantitative

[BACK](#)

SHAPING THE PORTFOLIO WITH AN ESG MATERIALITY PROFILE

Company	Auriel Capital
Author	Larry Abele

To identify any relationship between environmental, social and governance scores and investment returns, our research team initially conducted detailed due diligence work using scores from several research providers. We found a lack of consistency between vendors, and the results from the back-testing implied that a portfolio ranked directly on such an indicator would not significantly out-perform over historical data.

Given the weak results we decided to take a step back and approach the problem again from the angle of materiality. We researched three to eight key environmental and social issues facing each industrial sector over the next three to five years, e.g. water scarcity in the food and beverage industry, labour rights and the social right to operate in extractive industries and governance and public trust in the banking industry.

Based on these key issues, we then developed a sector-factor matrix, comprising 30 sectors by 27 factors, for each of the six regions in which we invest, and used our data vendors to fill in the matrix. Once we finished selecting the proxies to use in building our factors, we weighted each factor. We varied the weight of environmental factors by estimating the relative monetary value of all environmental externalities relative to social and governance factors.

In determining the overall ESG score for each firm (“ESG Profile” in figure 1), our ESG-integrated quant model analyses the firm’s ESG data, feeds in the ESG data associated with the key issues for its industry and calculates the corresponding proprietary factors. The sector matrix’s weightings are then applied to the proprietary factors to calculate the ESG Profile.

In terms of determining our investment view of a particular company, the ESG Profile represents our longer-term, “conviction” component. Other alpha sources represent our shorter-term components (up to a couple of weeks’ time) and adjust our portfolio to reflect our tactical views on our universe of stocks.

The below table shows how our ESG Profile is added to other alpha sources, in this case Pattern of Analysts Revisions, Earnings Forecasts, and Mean Reversion, to arrive at our final portfolio and the final position size. Koninklijke DSM, for example, has a 30bps short position in the portfolio. Without the negative Sustainability Profile, held in part due to a larger environmental impact per unit revenue than its peers, the portfolio would have held a long position of about 10bps.

Assets	ESG profile	Pattern of analysts' revisions	Earnings forecasts	Mean reversion	Weighted sum	Live portfolio
AKZO NOBEL NV	0.48%	-0.16%	0.52%	0.15%	0.69%	0.59%
ARKEMA	-0.14%	-0.07%	-0.46%	-0.08%	-0.75%	-0.64%
BASE SE	-0.01%	-0.34%	0.09%	0.30%	0.04%	0.03%
BRENNTAG AG	0.14%	0.29%	0.06%	0.18%	0.67%	0.57%
CLARIANT AGR	-0.24%	0.24%	0.04%	-0.50%	-0.46%	-0.39%
GIVAUDAN SA	0.31%	0.12%	-0.33%	-0.17%	-0.31%	-0.26%
K S AG	-0.11%	0.08%	0.32%	0.18%	0.47%	0.40%
KONINKLIJKE DSM NV	-0.43%	0.08%	-0.24%	0.24%	-0.35%	-0.30%
TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

CASE STUDY: Quantitative

[BACK](#)

ENHANCING FORECASTED TOTAL RISK MODELS

Company	Analytic Investors
Author	Dennis Bein

WHY ARE ESG RATINGS USEFUL IN QUANT STRATEGIES?

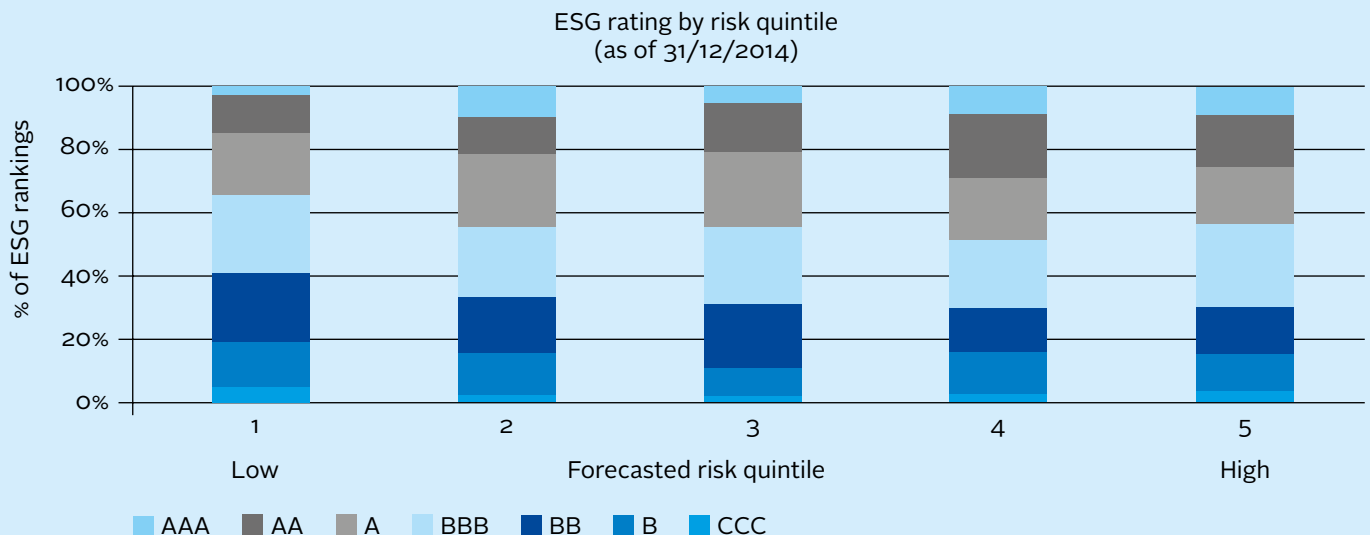
To determine whether or not ESG practices are an indicator of future risk, i.e. high future price volatility, we investigated whether ESG metrics provide insights that are not captured via traditional fundamental risk models. If they do, ESG ratings can be used to identify unknown risks found in companies that are considered low risk by traditional risk models.

Figure 1 categorises the MSCI World stocks into five 'bins' based on total forecasted risk¹. Given that all quality of ESG stocks are found in broadly similar quantities in each bin,

the chart suggests that ESG ratings are uncorrelated with the forecasted total risk that traditional fundamental risk models calculate.

Further supporting the idea that ESG ratings provide insights not found in traditional fundamental risk forecasts, figure 2 exams the residual volatility² of MSCI World securities, which is the volatility that is not forecasted by the fundamental risk model. As shown, stocks ranked poorly on ESG practices have more residual volatility and therefore possess larger levels of unknown risks than better ESG-ranked stocks, leading us to conclude that ESG ratings can help reveal companies with high future price volatility.

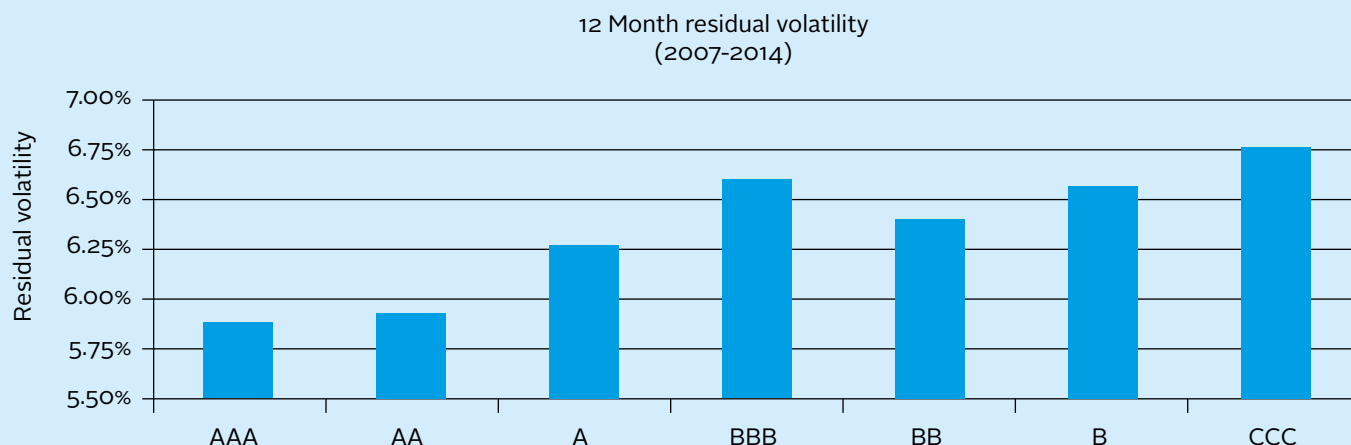
Figure 1: Percentage of ESG ratings within forecasted total risk quintiles (December 2014)



¹ Forecasted total risk is based on Barra's fundamental Global Equity Risk Model.

² Residual volatility is the average, forward twelve-month standard deviation of returns that have been purged of country, industry, and other style effects.

Figure 2: Average residual volatility (2007-2014)



HOW WE USE ESG RATINGS IN QUANT STRATEGIES

We devised a systematic way to incorporate the heightened risk profile of companies rated poorly on ESG practices into portfolio construction.

We use an optimiser to build a portfolio that has the appropriate level of risk, subject to stock-specific maximum position limits that are based on the risk of each individual stock. We use multiple lenses to identify these risks and a proprietary risk-scaling process to ratchet down our stock-specific maximum position limit based on the risks that we find. This process is applied systematically across all stocks.

We integrate our ESG research findings as a lens in our risk-scaling process. As a company's ESG rating falls, our model scales down the maximum allowable position to reflect the increasing uncertainty around volatility and the heightened probability of an outlier event.

IMPACT ON INVESTMENT DECISIONS

Offshore drilling company Seadrill Limited is considered very high risk from both a fundamental and statistical perspective, and accordingly, our maximum allowable position size would only normally be around 1.5%.

Seadrill was involved and ultimately found partially guilty for Australia's largest marine oil spill. The Montara Oil Spill in August 2009 lasted for 74 days and spilled about 150,000 barrels of oil into Australian and Indonesian waters. Seadrill faces extremely high financial and reputational risks related

to health and safety accidents and hydrocarbon spills, and has shown no evidence of diminishing those risks since 2009. Not surprisingly, Seadrill's ESG rating is CCC. Even if we think the stock is attractively priced, the additional ESG risk has reduced the maximum allowable position by two thirds – to about 0.5% of a portfolio.

While the Seadrill example is interesting, what about a stock that fundamental and statistical models do not show to be risky?

Healthcare company Baxter International exhibits low fundamental risk but has encountered numerous product safety issues. In December 2013, lawsuits were filed due to deaths potentially related to a blood thinner, Heparin. The next month, they received a letter regarding repeated violations of manufacturing standards at a plant in Illinois and in May of last year, the company recalled SIGMA Spectrum Infusion Pump tied to severe adverse events.

Fundamental and statistical models generally see the stock as low-risk and in fact, depending on how you measure volatility, the risks are approximately 20% lower than the average stock. So while the balance sheet and income statement appear to make the company seem low-risk and warrant a position size of 3%, the weak ESG evaluations resulted in us shrinking our maximum allowable position size to 1.9%.

SMART BETA STRATEGIES

OVERVIEW OF SMART BETA STRATEGIES

Smart beta investing uses a blend of both passive and active investment disciplines. It weights the constituents of a market-capitalisation index by a factor(s) other than market capitalisation – such as value, dividend yield, momentum, growth, quality or volatility – to outperform the index, lower the downside risk or increase the dividend yield. Some smart beta strategies use these types of data directly, and some use mathematical weighting schemes that can result in similar exposures.

By applying different weights, a portfolio is created that has different characteristics and returns compared to a conventional index weighted by market-capitalisation. For example, a smart beta portfolio weighted by the value factor PE ratio will consist of a higher percentage of lower PE stocks, which will therefore drive its performance. A conventional index, on the other hand, has a natural bias towards companies with a large market capitalisation and therefore its performance is largely dictated by the share price performance of large market-capitalisation companies.

Portfolio construction methodologies of smart beta products can be grouped into two categories.

Heuristic-based weighting methodologies calculate the weights of securities by using simple, heuristic rules that are applied systematically across all constituents. For example, the weights of each index constituent of a momentum-weighted index are calculated by dividing the stock's momentum score by the sum of all constituents' momentum scores. Other popular heuristic based weighting strategies are equal weighting, fundamentals weighting and risk clusters equal weightings.

Optimisation-based weighting methodologies involve complex optimisation techniques to create portfolios maximising return or minimising risk. For example, a low-volatility weighted index involves forecasting the future volatility of each index constituent and then applying a lower/higher weight to high/low volatility stocks respectively.

In smart beta strategies, ESG factors and scores can be used as a weight in portfolio construction to create excess risk-adjusted returns, reduce downside risk and/or enhance portfolios' ESG risk profile.

For example, Bank J. Safra Sarasin has analysed the relationship between governance indicators and downside risk and utilised their research in their portfolio construction process. To select innovative water solution providers for their “smart water” products, Calvert Investments uses its proprietary research system to identify financially material indicators of water efficiency and water impact among firms in sectors with high water intensity, such as food products, paper or semiconductors.

Managers who integrate an ESG factor into a smart beta portfolio often adjust holdings for other factors, such as

the value factor PE ratio mentioned above. In one of these case studies, AXA Investment Managers adjusts the weights of stocks in a global equity universe to increase the exposure to companies with a high profitability, high quality of earnings, low-risk profiles and top ESG scores.

CASE STUDY

Joining financial and long-term sustainable performance objectives
– AXA Investment Managers



CASE STUDY

Constructing a smart water index – Calvert Investments



CASE STUDY

Feeding governance insights into smart beta strategies – Bank J. Safra Sarasin



CASE STUDY: Smart Beta

BACK

JOINING FINANCIAL AND LONG-TERM SUSTAINABLE PERFORMANCE OBJECTIVES

Company	AXA Investment Managers
Author	Lise Renelleau, Catherine Soulier, Katy Sullivan

Through our statistical back-tests, we see low correlation between E, S, and G data and traditional stock fundamentals. This offers asset owners the opportunity to invest responsibly without compromising their investment beliefs, taking proper account of the ESG considerations they expect to impact the long-term sustainable performance of companies. Our approach delivers best-in-class ESG integration while leaving traditional financial goals unaffected.

One area in which we have achieved this is our smart beta strategy.

CONSTRUCTING A SMART BETA ESG STRATEGY

When constructing our smart beta ESG strategy, we combine the following three key components (see figure 1):

(1) FILTER

All stocks in the starting universe pass through four filters, covering desired factor exposures (earnings quality and low volatility) and undesirable risks (speculative value and financial distress).

Each filter is awarded a score, all of which are then combined into a single score for each company, allowing filters to interact to improve the portfolio's expected risk/

return profile, in particular by systematically avoiding uncompensated risks.

(2) DIVERSIFY

Portfolio diversification is maintained by applying a proprietary weighting scheme that avoids the high concentration of larger companies seen in market-capitalisation weighted indices, whilst limiting unrealistic over-exposure to the smallest companies. Our weighting scheme was designed to manage liquidity and capacity better than other weighting schemes.

(3) INTEGRATE ESG

We combine our filters, diversification weighting scheme and ESG scores to construct a diverse portfolio with both the targeted risk profile (high earnings quality and lower volatility) and strong ESG credentials.

ESG rules are implemented to exclude companies with the poorest ESG scores, the worst practices within their economic sector, and the most serious controversies, irrespective of their smart beta fundamental properties. Companies with higher ESG scores or those that are among the best in their sector are systematically up-weighted to further enhance the portfolio's ESG profile.

Figure 1: Investment process

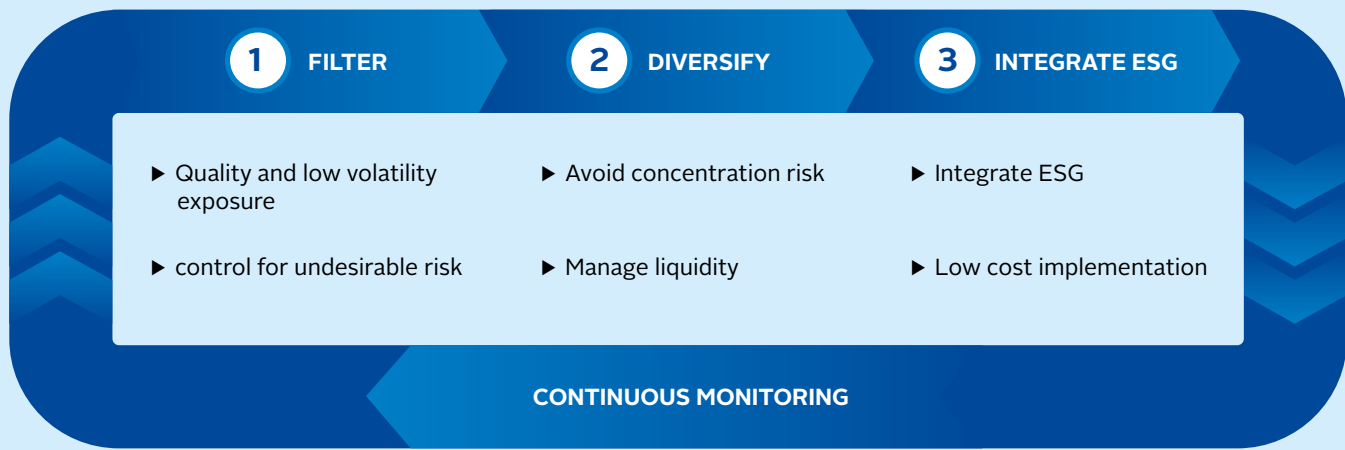
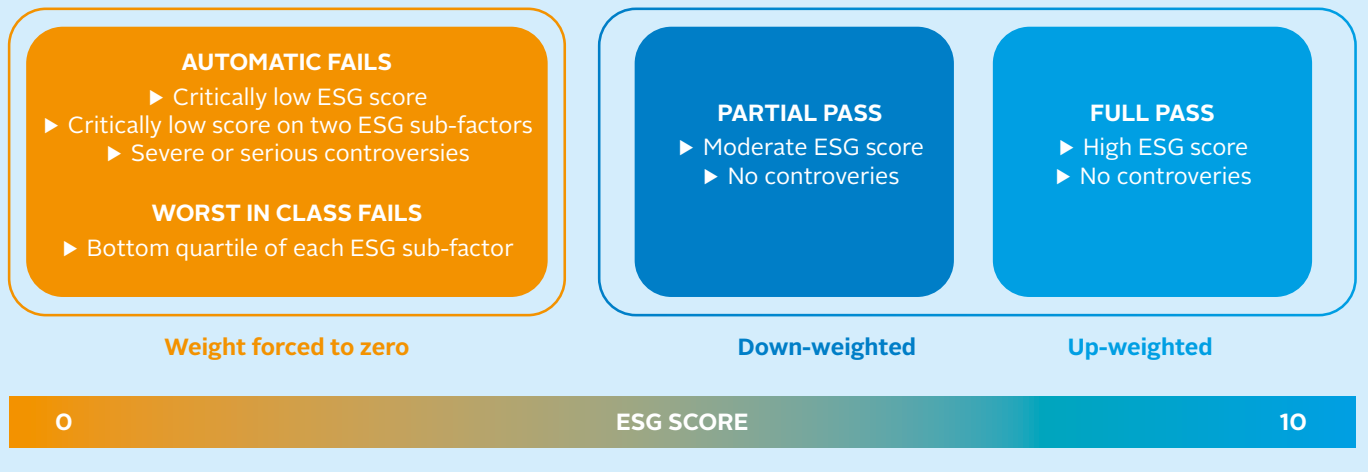




Figure 2: ESG integration



Our ESG scores are determined by our proprietary ESG analysis framework, comprising six overarching factors to measure and analyse how companies are facing up to long-term societal trends and challenges that we have identified, including resource scarcity, climate change, shifting demographics, regulation, company impact and community expectations.

We select complementary providers of raw ESG scores and combine their data to compute scores for a range of ESG sub-factors. An overall score (ranging from 0 to 10) is calculated as the weighted average of ESG sub-factors. The weights are proprietary, defined contextually based on our fundamental analysis of key ESG issues facing each economic sector. For example, for a retail company, we place a greater emphasis on social considerations (human capital, business behaviour) and focus on aspects such as working conditions (health and safety), employer-employee relationships and career management.

STOCK EXAMPLE

Company A and Company B have the same overall filter score and as their market caps are the same, the same diversification weights. Neither company is worst-in-class in any ESG sub-factor or involved in any controversy, so neither are excluded from the portfolio, but Company B's overall ESG score is much higher than that of Company A, so its weight is increased. Company C's overall ESG score is poor, so it does not feature in the final portfolio (see figure 3).

Excluding stocks like Company C can result in rejecting approximately 30% of the starting universe (by market capitalisation). Most of this is reallocated into best in class stocks with strong fundamental profiles, like Company B, doubling the capital allocated to the best ESG companies and resulting in a diversified smart beta ESG portfolio.

Figure 3: Impact of ESG score on holding weightings

	OVERALL FILTER SCORE	X	DIVERSIFICATION WEIGHT	X	REWEIGHT BY ESG SCORE	=	SMARTBETA ESG PORTFOLIO*
Company A	1		0.3%		4.0		0.8%*
Company B	1		0.3%		8.0		1.2%*
Company C	1		0.3%		0.0		0.0%*

*Final portfolio weights are rescaled so that the portfolio is fully invested. This rescaling is not linear, to preserve portfolio diversification.

CASE STUDY: Smart Beta



CONSTRUCTING A SMART WATER INDEX

Company	Calvert Investments
Author	Andreas G. F. Hoepner, John Streur

THE SMART BETA PROCESS

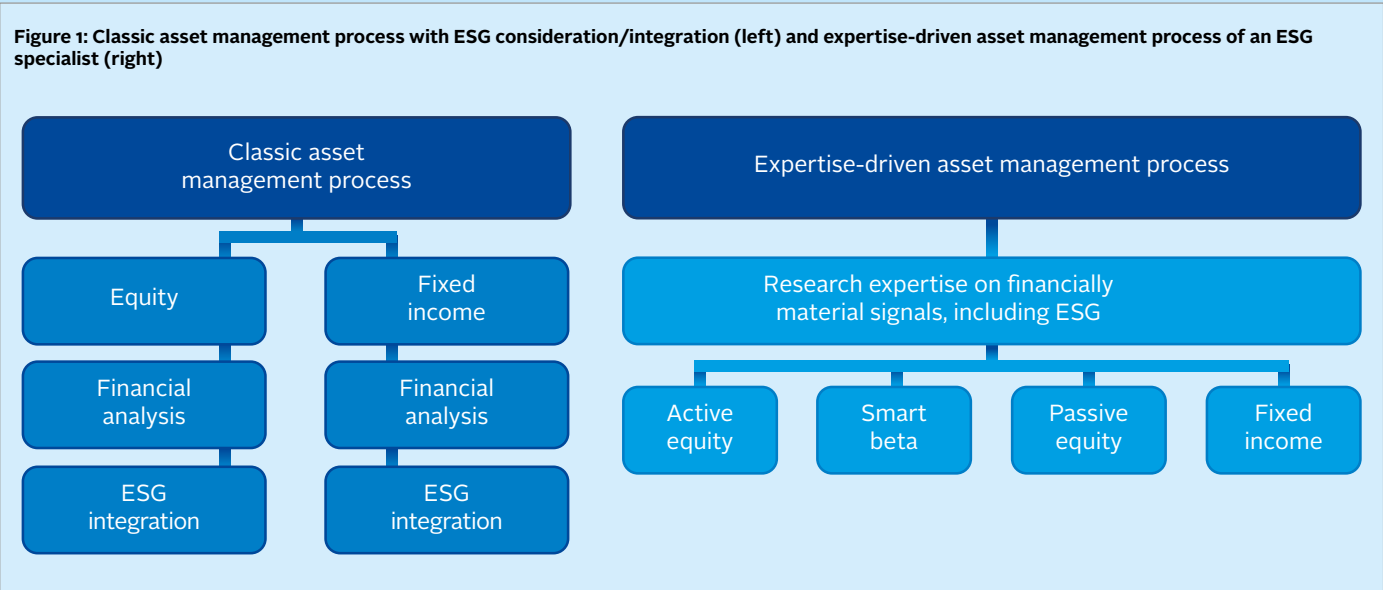
In order to support a variety of investment strategies that incorporate ESG standards, we conduct research in a manner that allows the output to be used to comprehensively score certain segments of the capital markets (equity and debt) relative to ESG criteria. This enables us to develop a high-quality ESG smart beta investment process and to integrate ESG research into the traditional investment decision-making process.

Our process has four building blocks:

1. Firm- and portfolio-level attributes: Smart beta strategies seek corporate attributes that have consistent positive performance impact across all firms sharing these attributes, as opposed to focusing on the large outperformance opportunities of a few individual firms, as some active strategies do. Smart beta generally searches for small positive moves by the dozens, if not hundreds, that when combined together can result in better, more effective overall portfolio performance. Hence, our smart beta investment process assesses attributes at the individual firm level, and understands in detail whether these firms represent the right combination of companies at the portfolio level.

- 2. Data quality and independence:** Since smart beta requires firms to be assessed on the same attributes, it is crucial to systematically source high-quality, independent data.
- 3. Financial data science:** Understanding how ESG attributes affect the risk-adjusted return of investment portfolios involves not just how any factor impacts a portfolio's return variation, but also the hierarchy between the drivers (e.g. is the return variation of this equity portfolio driven more by value characteristics or corporate governance attributes?).
- 4. Scouting for disruptive data:** Continuously scouting for new sources of data indicating risks and opportunities, and other technology breakthroughs, enhances the process. Any investment process that considers itself complete is at risk of losing out to someone able to capitalise on new opportunities.

This differs from a classic asset management process, where teams and research are usually separated by asset class, instead centring the process around and starting it with research in financially material ESG signals, which is shared with all asset class teams and applied to those that appear to have the highest probability of creating positive outcomes at low risk (figure 1).



CONSTRUCTING THE INDEX

Based on the above process, our Calvert Water Research Index is constructed by:

- selecting constituents from water supply sectors;
- identifying:
 - companies operating in water-intensive industries;
 - innovative water solutions providers.

To initially select index constituents from three water supply sectors (utilities, infrastructure and technology), we started with a universe of 30,000 publicly listed companies, which was filtered based on market capitalisation, float-adjusted market capitalisation and 20-day average trading volume to a long list of about 6,000 securities. This was reviewed to create a short list of firms with more than 30% total revenue or earnings derived from water-related business activities.

To select innovative water solution providers, we use our proprietary research system to identify financially material indicators of water efficiency and water impact among firms in sectors with high water intensity, such as food products, paper or semiconductors, and include organisations that offer particularly innovative solutions to the global water challenge, as defined by the United Nations Sustainable Development Goals.

To diversify the index, specialised water products and water supply sectors are weighted by a modified market capitalisation, with each of the three sectors receiving a quarter of the overall index weight. Water solution providers are equally weighted to represent the fourth quarter of the overall index. The index itself is rebalanced quarterly and reconstituted annually within a 5% maximum weight per security and a 20% maximum aggregated weight for emerging markets.

CASE STUDY: Smart Beta



FEEDING GOVERNANCE INSIGHTS INTO SMART BETA STRATEGIES

Company	Bank J. Safra Sarasin
Author	Andreas G. F. Hoepner, Pierin Menzli

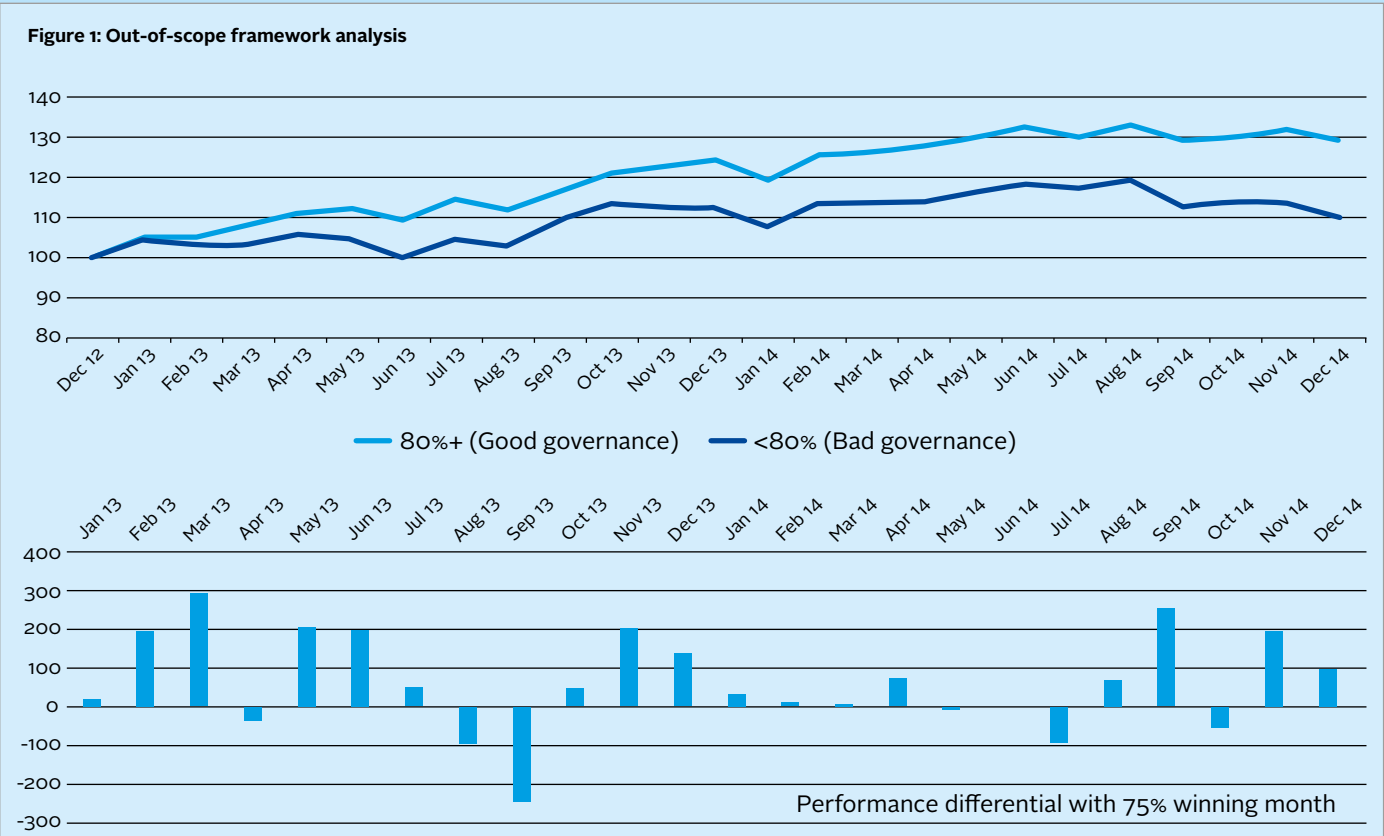
The aim of our Sustainable Investing Laboratory is to exploit the opportunities offered by financial data science, the intersection of three fields: statistical analysis of big data, investment management and computational science. In contrast to financial economics approaches which presuppose which performance indicators are theoretically key and analyse only those, financial data science analyses all performance indicators to identify any financially material signals.

Given the topicality of smart beta and sustainable investing, our Sustainable Investing Laboratory explored the possibility of a Sustainable Smart Beta strategy. As environmental and social indicators are often industry-specific, we focused initially on governance indicators, exploring 96 indicators for financially material signals.

THE PROCESS

Our data analysis process involves five phases:

1. Import the governance data plus the relevant financial market data and check data quality.
2. Define performance measures that describe the downside protection and upside opportunities we aim to identify.
3. Analyse the investment performance of tens of thousands of hypothetical portfolios of 30+ stocks.
4. Test robustness to ensure that a risk reduction opportunity does not come at the expense of a constrained return or other undesirable features.
5. Repeat the analysis with out-of-sample data to ensure that the governance indicators identified as financially material are broadly viable performance drivers.



After importing and checking the data and defining the performance measures, in the third phase, the tens of thousands of annually updated portfolios of larger than 30 stocks are formed from a global investible equity universe according to the governance indicators over a recent sample period of up to eight years. Not all of these are practically implementable. Some of the appealing results might come at the cost of a constrained alpha; others might be affected by non-comparable risk levels due to differences in portfolio diversification despite these being not too substantial beyond 30 stocks. Hence the fourth stage involves a range of robustness tests for these risk reduction opportunities to check for potential upside constraints. As a result, we identify more than half a dozen robust, financially material investment signals based on governance indicators.

With the fifth and final phase, we use the last two years of data available as an out-of-sample period. We define a few portfolio construction strategies based on the half a dozen robust, financially material investment signals identified in the fourth stage, and then repeat the full data analysis process for these strategies in the out-of-sample period to understand the financial materiality implications.

As shown in Figure 1, the strategy with the best balance between firms classified as good governance (N=2149) and those classified as poor governance (N=2097) displays 75% winning months for the good firms between January 2013 and December 2014, and sees the good governance portfolio delivering hundreds of basis points value added. Due to the equivalent balance between firms classified as good and bad, and the jurisdiction-specific nature of

corporate governance, the country exposure of the strategy is tilted towards the US, although its industry tilts are inconsequential.

The insights gained from the five stage process flow into our Sustainable Smart Beta strategy, affecting several steps in the investment process.

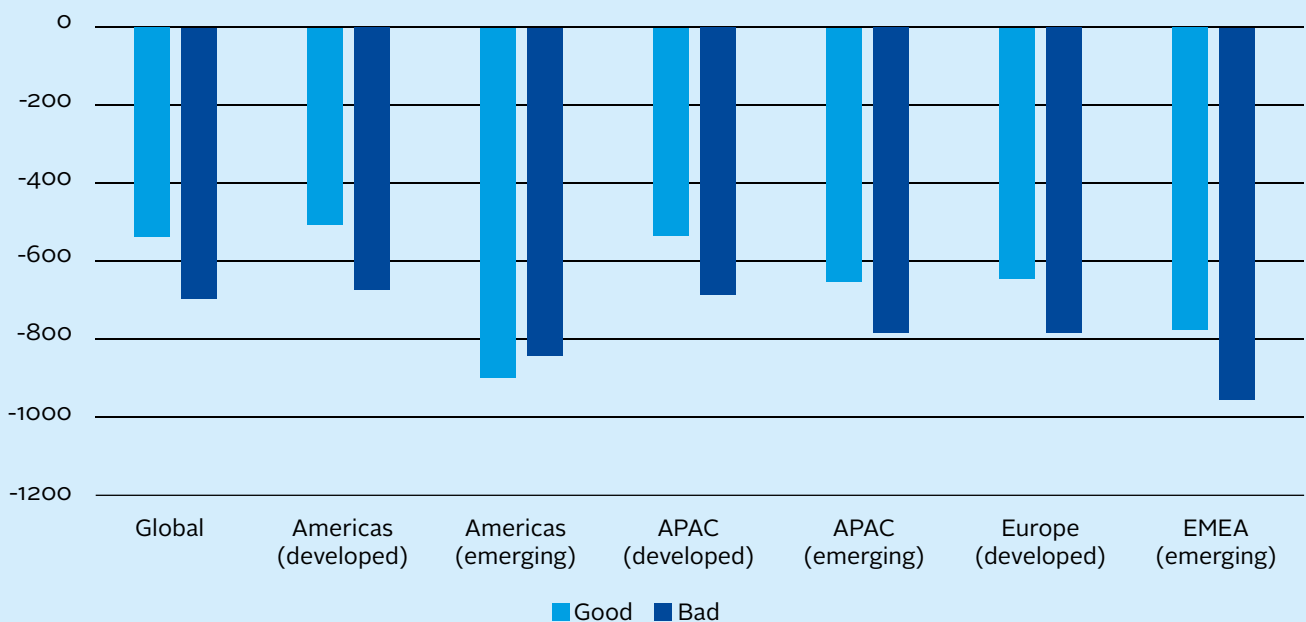
They are:

- an integral part of our ESG analysis, where they are influential in deriving our sustainable investment universe by selecting and weighting the relevant aspects of our ESG assessment of companies;
- factors in the portfolio construction process used to reduce governance risk and protect the downside portfolio risk of our smart beta strategy without limiting upside alpha opportunities.

IN PRACTICE: EXAMINING EXECUTIVE COMPENSATION

One of the half a dozen financially material governance indicators is related to long-term incentives for CEOs. A company displays good governance if there are effective stock ownership guidelines for the CEO (in cases where a CEO's ownership is worth more than five times the CEO's annual pay). Testing the robustness of this factor globally, we find it to significantly reduce risk across all developed markets and two of three emerging markets (figure 2).

Figure 2: Semi-standard deviations (in bps) of investment strategies based on CEO equity policy across regions.



PASSIVE AND ENHANCED PASSIVE STRATEGIES

OVERVIEW OF PASSIVE STRATEGIES

This publication covers passive investments that seek to match the performance of a market or a section of a market by closely tracking the return of a capitalisation-weighted index. There are a variety of methods that are used by passive investments to replicate an index.

- Full replication methodology requires buying all the constituents of an index.
- Partial replication methodology (also known as stratified sampling) sees the investment manager invest in a sample set of constituents of an index and adjust their weights so that the fund matches the index on characteristics such as market capitalisation and industry weightings. While this can lower transaction costs, it can increase tracking error as the sample may not closely follow the index. This approach is often used when the index consists of many stocks, and/or stocks with low liquidity.
- Another approach uses derivatives to track an index. (Full replication and partial replication approaches may use derivatives to some degree.)

Passive investments that track an index will buy and sell stocks periodically to reflect the changes to the underlying index.

Enhanced passive

Where the investment objective of passive investments is to match the performance of a capitalisation-weighted index, the objective of enhanced passive investments is to either reduce the downside risk relative to a capitalisation-weighted index or beat its performance. This is achieved by using the index and its constituent weights as the core of the portfolio, and engaging in restricted active strategies, including divesting certain securities, adjusting the weights of constituents and trading derivatives.

With the rising popularity of passive strategies, PRI signatories are keen to understand if integration techniques can be applied to these investments. Some investors believe that as a manager cannot make active investment decisions in passive strategies, ESG factors cannot be integrated in passive investments as this may cause performance to deviate from the benchmark's.

Passive strategies can incorporate ESG factors, however. One approach is to reduce the ESG risk profile or exposure to a particular ESG factor by tracking an index that adjusts the weights of constituents of a parent index accordingly. Funds that use a partial replication approach can also exclude companies with high ESG risk or low ESG ratings. Often these benchmarks use portfolio optimisation techniques to minimise tracking error.

Additionally, integration techniques can be applied to enhanced passive strategies. As enhanced passive strategies can make active investment decisions such as adjusting index constituent weights and excluding certain stocks altogether to lower downside risk or outperform the benchmark, managers can integrate ESG factors into these strategies.

RESPONSIBLE INVESTMENT INDICES AND CUSTOM BENCHMARKS

The market for responsible investment indices has grown steadily since the first were launched 25 years ago, and most major index providers now offer them. Although the majority exclude companies – either based on specific, absolute factors (e.g. involvement in certain products) or by assessing all companies relatively and excluding the worst (a best-in-class approach) – some re-weight constituents.

- The MSCI Global Low Carbon Target Index reweights the constituents of its parent index to reduce its carbon exposure and deploys portfolio optimisation techniques to minimise tracking error (see case study).
- The iSTOXX SD-KPI indices identify the three ESG factors that are considered most relevant to business performance for each index constituent, and overweight or underweight them based on an ESG score (see case study).

As it can be difficult for an investor to find an off-the-shelf responsible investment index that matches their policies and strategies, some create custom benchmarks, either internally or through service providers, to incorporate their specific ESG criteria.

For example, Northern Trust Asset Management collaborated with MSCI to create the MSCI Emerging Markets Custom ESG index. Starting with the parent MSCI EM Index, the customised version first screens out companies that do not comply with the UN Global Compact Principles, are involved in the production or sale of tobacco products, or are involved in the production of controversial weapons. The second screen excludes majority held companies with a controversial board composition.

As well as being used for passive investments, responsible investment indices can be used as benchmarks for active investments, allowing an active manager to select stocks from an investment universe with a lower initial ESG risk profile than the parent index. Responsible investment indices can also encourage constituent companies of the parent index to increase the standard of their ESG disclosures.

CASE STUDY

Weighting stocks of STOXX' mainstream indices according to material ESG factors – SD-M

**CASE STUDY**

Weighting vs exclusion in low-carbon indexes – MSCI





WEIGHTING STOCKS OF STOXX' MAINSTREAM INDICES ACCORDING TO MATERIAL ESG FACTORS

Company	SD-M
Author	Dr Axel Hesse

STOXX and SD-M developed the EURO iSTOXX 50 SD-KPI, iSTOXX Europe 50 SD-KPI and iSTOXX Europe 600 SD-KPI Indices for institutional investors to track their passive portfolios against and/or benchmark their active portfolios against. It is designed to better complement investment strategy and policy than other ESG indexes, in particular where the strategy/policy favours ESG integration rather than screening.

The iSTOXX Europe 600 SD-KPI is based on the mainstream STOXX Europe 600 index. The methodology entails an incremental change approach with a small tracking error and liquid derivatives available. All 600 components of the

parent index are included, but are over- and under-weighted according to Sustainable Development Key Performance Indicators (SD-KPIs). This reduces the large-cap bias associated with mainstream indices and other ESG indices.

The SD-KPIs are selected according to what we believe to be the three most relevant ESG indicators to business performance for 68 different sectors defined by investors and analysts in the SD-KPI Standard 2010-2015 as well as in the SD-KPI Standard 2016-2021. Each stock is allocated a SD-KPIIntegration score between 0 and 100, based on the stock's performance on the sector-relevant SD-KPIs.

SD-KPIIntegration Score	Component weights
0 - 20	under-weighted 50%
20.01 - 40	under-weighted 25%
40.01 - 60	not changed
60.01 - 80	over-weighted 25%
80.01 - 100	over-weighted 50%

THE SD-KPIntegration SCORE IN PRACTICE

Before the Deepwater Horizon explosion on 20 April 2010, BP was often best-in-class in broad sustainability ratings, but not in a focused SD-KPI evaluation.

The three SD-KPIs for the oil and gas industry were published in January 2010.

- SD-KPI 1 "greenhouse gas emissions of production" had a weight of 41% and in January 2010 BP reached 75 out of 100 points.
- SD-KPI 2 "greenhouse gas emissions of products" was weighted 38%, and BP scored 0 points.
- SD-KPI 3 "emission of hazardous waste and toxic materials/oil spills" had a weight of 21%. BP scored only 10 points due to a bad track record of operations incidents even before the Deepwater Horizon explosion.

The result was an accumulated SD-KPIIntegration Score of 32.85, meaning that in the iSTOXX Europe 600 SD-KPI Index, BP's weight was 25% lower than in the STOXX Europe 600.

CASE STUDY: Passive

[BACK](#)

WEIGHTING VS EXCLUSION IN LOW-CARBON INDEXES

Company	MSCI
Author	Thomas Kuh

We have two main approaches to developing indexes institutional investors may use as they decarbonise their portfolios (to mitigate carbon risks and support a transition to a low-carbon economy):

- reweighting high-carbon stocks (the MSCI Low Carbon Target Indexes);
- excluding the most emissions-intensive and reserves-intensive companies in each sector (the MSCI Low Carbon Leaders Indexes).

Figure 1: Comparison of MSCI Low Carbon Target Indexes and MSCI Low Carbon Leader Indexes

	MSCI Global Low Carbon Target Indexes	MSCI Global Low Carbon Leaders Indexes
Approach used in index design	Re-weighting	Selection & Re-weighting
Objective	Minimise the carbon exposure (emission intensity and reserves relative to market cap) while constraining the ex-ante tracking error to the benchmark to a target (default: 30bps)	Exclude based on carbon emission intensity and reserves relative to market cap, and then minimise tracking error while constraining the carbon reserve relative to market cap and emission intensity to a maximum value (default: 50%)
Opportunity set	Any MSCI market cap weighted index	Any MSCI market cap weighted index
Exclusion	No exclusions	Largest 20% emitters by number in the parent index, with a maximum of 30% by weight from any sector Largest owners of reserves (up to 50%)



	MSCI Global Low Carbon Target Indexes	MSCI Global Low Carbon Leaders Indexes
Optimisation / weighting	<p>Minimise emission intensity and minimise reserves relative to market cap, subject to the given constraints</p> <p>Ex-ante tracking error to benchmark: specified target (default: 30 bps)</p> <p>Turnover constraint: < 10% semi-annual</p> <p>Sector constraint: < 2% under- or over-weight, no constraint on Energy</p> <p>Country constraints: < 2% under- or over-weight</p> <p>Model: Barra GEM3</p>	<p>Exclude based on emission intensity and reserves relative to market cap</p> <p>Minimise ex-ante tracking error to benchmark</p> <p>Reduce emission intensity and reserves relative to market cap by at least 50% (default)</p> <p>Turnover constraint: < 10% semi-annual</p> <p>Sector constraint: < 2% under- or over-weight</p> <p>Country constraints: < 2% under- or over-weight</p> <p>Model: Barra GEM3</p>
Short-term risk	Uses optimisation to reduce tracking error to parent index	Uses optimisation to reduce tracking error to parent index
Long-term thesis	Uses optimisation to reduce exposure to companies most vulnerable to stranded assets (i.e. exposed to current and future emissions) while retaining complete opportunity set	Exposure reduction based on selecting companies with low current carbon emission and low fossil fuel reserves
Public stance	Allows for engagement with companies	Can allow subscriber to signal an intent to influence corporate behaviour

MSCI ACWI LOW CARBON TARGET INDEXES

Our Global Low Carbon Target Indexes reweight stocks to reduce carbon exposure. The indexes are designed to achieve a target level of tracking error while minimising the carbon exposure.

The inputs include carbon emissions and carbon reserves exposures of the individual securities. The objective is to minimise carbon exposure subject to a tracking error constraint of 30 bases points relative to the parent index. The optimisation parameters include country weights, sector weights and other constraints.

Put simply, the index may include two securities from the same sector with similar risk characteristics exposures, but overweight the security with lower carbon exposure and underweight the one with higher carbon exposure. Figure 2 outlines the top and bottom 10 active weighted constituents within the MSCI ACWI Low Carbon Target Index relative to the parent index. Most of the underweight and overweight securities belong to the energy sector.

Figure 2: Top and bottom active weights of the MSCI Low Carbon Target Index

		Country	Sector	Weight (%)	Active Weight (%)
TOP ACTIVE WEIGHTS	Ultrapaper part On	BR	Energy	0.2	0.2
	Spectra Energy	US	Energy	0.2	0.2
	American Water Works Co	US	Utilities	0.2	0.2
	Formosa Petrochemical Co	TW	Energy	0.2	0.2
	Grupo Mexico B	MX	Materials	0.2	0.2
	Enbridge	CA	Energy	0.2	0.2
	PrairieSky Royalty Ltd	CA	Energy	0.1	0.1
	Inter pipeline	CA	Energy	0.1	0.1
	Fortis	CA	Utilities	0.1	0.1
	Transcanada Corp	CA	Energy	0.2	0.1
BOTTOM ACTIVE WEIGHTS	Exxon Mobil Corp	US	Energy	0.0	-1.0
	Chevron Corp	US	Energy	0.1	-0.4
	Total	FR	Energy	0.0	-0.3
	Royal Dutch Shell B	GB	Energy	0.0	-0.3
	Royal Dutch Shell A	GB	Energy	0.0	-0.3
	BP	GB	Energy	0.0	-0.3
	Occidental Petroleum	US	Energy	0.0	-0.2
	Duke Energy Corp	US	Utilities	0.0	-0.2
	NextEra Energy	US	Utilities	0.0	-0.2
	Southern Company	US	Utilities	0.0	-0.1

SELL-SIDE RESEARCH

Sell-side brokers started integrating ESG factors into research over 15 years ago. Their approach is to integrate ESG information with traditional financial information – by leveraging their financial information systems, their access to company management, and the expertise of mainstream, sector-focused investment analysts – to improve research. Sell-side brokers were driven to publish ESG-integrated research by investment managers that wanted new investment opportunities, demanding studies on the financial implications of broad ESG themes on the economy, industries and companies, and on the impact of specific ESG issues on stocks in their portfolio(s) and investment universe.

To meet these demands, sell-side brokers have produced various types of research that cover ESG themes and issues. How deeply any of these approaches are integrated into investment recommendations by the sell-side analysts varies: sell-side analysts can generate ideas and investment themes for investment managers to integrate, or they can directly integrate ESG factors into fair values and investment recommendations (e.g. buy/hold/sell) themselves.

This chapter describes the main types of ESG-integrated research from sell-side analysts. To map out the types of ESG-integrated research, we requested submissions from all sell-side brokers known to be active in responsible investment. We received 84 research submissions covering most stock market sectors, geographies and research types:

- **Sectors** – Aerospace and defence, autos, banks, beverages, building and construction, chemicals, education, electrical equipment, energy, food retail, food products, home and personal care (HPC), insurance, media, metals and mining, pharmaceuticals, real estate, retail, semiconductors, technology, telecommunications, transport, utilities;
- **Geographies** – Asia, Australia, Europe, USA, global;
- **Research formats** – Company notes, sector notes, cross-sector thematic reports, value chain analyses, macro trend research, event impact analysis.

APPROACHES TO INTEGRATED RESEARCH

Sell-side analysts will integrate ESG factors, alongside other financial factors, into their forecasted company financials and/or models (commonly the discounted cash flow model). (See chapter 1: [Integration Techniques](#) for the different integration techniques used).

INTEGRATION IN THE FINANCIAL FORECASTING PHASE

ESG considerations can affect economic analysis, industry analysis and company analysis. The results are applied to a company's forecasted financials (e.g. revenues, costs, asset, liabilities, tax rates, etc) via the income statement, balance sheet and cash flow statement.

ECONOMIC ANALYSIS

Sell-side analysts assess the impact of ESG factors on the economy to adjust forecasted economic growth rates, and apply these to a company's forecasted financials.

Political governance has long been an integral part of economists' forecasts, as have many of the other ESG-related trends that form the basis of responsible investment analysis, such as the aging population, biotechnology and emerging market growth. However, the idea of explicitly investigating the impact of individual ESG factors on the economic outlook of a country or region has only recently started to become popular (largely as a result of fixed income investors' interest in differentiating sovereign bonds on the basis of their issuer's approach to these issues).

Report title	Energy Darwinism II (August 2015)
Sell-side broker	Citi
Lead analysts	Elaine Prior, Jason Channell and Liz Curmi

Citi contributes to the debate on climate change and its impact on economic growth by mapping the expected mitigation and adaptation costs of two scenarios:

- Inaction scenario: "We allow macroeconomics to drive demand for energy by ignoring the implications for emissions and feeding energy demand based purely on (often short term) economics and the immediate availability of fuel. To meet rapidly growing energy demand, this scenario will result in an enormous 'energy bill' for the world, and alongside this we must also consider the potential financial implications of climate change."
- Action scenario: "We mold our energy future driven by a blend of emissions, economics, avoided costs and the implications of climate change. This requires an assessment of how much 'extra' we will spend on transforming the global energy mix to a low carbon energy complex, and what the other associated costs will be in terms of lost global GDP, stranded assets etc., offset against the avoided costs of climate change."

By assessing the global spend required under each scenario from 2015-2040 (action = US\$190.2trn; inaction = US\$192.0trn) and the relative damage costs (cumulative losses from inaction are estimated at US\$2trn-US\$73trn or 1.5%-5% of GDP, in subsequent years), Citi uses scenario analysis to construct a direct line-of-sight argument from energy and climate to economic growth forecasts.

Figure 1: The 3 scenarios of the Potential Costs of Climate Change, Showing the Significant Effect that Different Discounting Rates Have. Source: Citi Research

Discount rate	NPV of lost "GDP"		
	Low (\$ trillion)	Central (\$ trillion)	Upper (\$ trillion)
0%	-20	-44	-72
1%	-14	-31	-50
3%	-7	-16	-25
5%	-4	-8	-13
7%	-2	-5	-7

INDUSTRY AND COMPANY ANALYSIS

Integrating ESG factors within industry and company analysis highlights the impact of sector-specific factors on industries and the competitive positioning of companies within them.

Value driver adjustment

This type of integrated research identifies one or more ESG factors material to a particular sector, and integrates it/ them into valuations and investment recommendations of companies across that sector.

As well as the case studies on the next page, an example of this approach is provided by [Evaluating ESG impact on project costs – Morgan Stanley Research](#) in Chapter 1, where Morgan Stanley analysed the impact of water scarcity on the mining sector.

Report title	What keeps energy analysts awake at night (June 2015); What keeps utilities analysts awake at night (June 2015)
Sell-side broker	Credit Suisse
Lead analysts	Sandra McCullagh

Credit Suisse's sector analysts identify megatrends affecting the sector, then flag which specific ESG issues affect the sector and finally analyse how those issues impact individual company valuations.

Figure 1: Megatrends affecting utilities

	Sustainability		
Description	AGL.AX	APA.AX	AST.AX
Emerging risks			
Renewables/aversion to fossil fuels	Negative	Warning	
Energy storage	Warning	Warning	Warning
Waste & recycling			
New materials	Warning	Warning	Warning

Figure 2: Environmental issues for utilities

	Environmental		
Carbon emissions	Negative	Negative	Negative
Upstream carbon emissions	Warning		
Energy efficiency	Negative	Negative	Negative
Insuring climate change risk			Positive
Opportunities in renewable technologies			

Figure 3: Utilities MSCI ESG rating and target price impacts

Company	Target Price (AUD)	ESG downside included	Market cap (\$mn)	ESG impact (\$mn)	Analyst view on rating
AGL.AX	18.10	-2.1%	10,775	229	Positive
APA.AX	8.10	-3.0%	10,218	316	Neutral
DUE.AX	2.40	-1.0%	3,794	38	Positive
ENE.AX	8.00	-3.1%	1,201	39	
ORG.AX	11.00	0.0%	14,680	-	Negative

Report title	Two degrees (2°C) of separation (March 2016)
Sell-side broker	Barclays
Lead analysts	Mark Lewis

Barclays evaluates two environmental factors in the German utilities sector:

- short-term outlook for both (companies) overshadowed by nuclear-funding uncertainty;
- COP-21 and the long-term implications for fossil-fuel generation.

These have fundamental implications for valuation of the major companies (RWE and E.ON). With the first factor, Barclays applies a nuclear-funding discount to both companies' sum of the parts (SOTP) valuations to derive its price targets.

When assessing the impact of the second environmental factor, Barclays calculates the EUA (carbon credit price) that would be necessary for gas to displace coal and for the share of renewable energy to grow in sufficient quantities for emissions reductions commensurate with 2°C. This price is then applied to the merit order for German power generation with the results for asset valuation shown below.

Figure 1: Sensitivity of E.ON's German and European fossil-fuel assets to our 2°C analysis (€m). Source: Barclays estimates

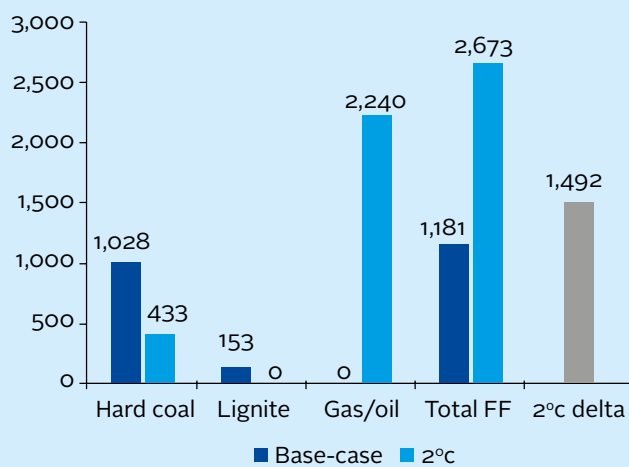
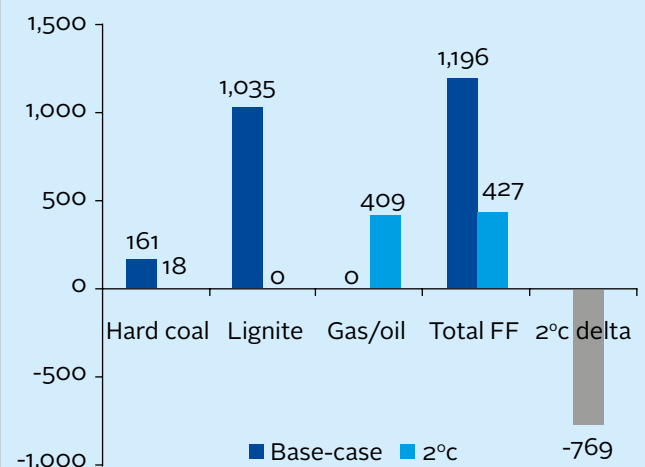


Figure 2: Sensitivity of RWE's German fossil-fuel assets to our 2°C analysis (€m). Source: Barclays estimates



Report title	Getting Real: The New Emissions Era (October 2015)
Sell-side broker	Exane
Lead analysts	Stuart Pearson, Edoardo Spina, Dominic O'Brien, Erwan Créhalet

Exane conducted a review of likely developments in the regulatory environment in the wake of the VW scandal, assessing the short-term impact on compliance costs, as well as the long-term impact on powertrain mix: "We estimate EUR22bn in gross emissions compliance costs by 2021e – of which EUR5-6bn are incremental post VW."

Exane draws four valuation-relevant conclusions from its review of emissions and the autos sector. Each conclusion affects the valuation of companies in a different way:

- Air quality concerns over diesel engines are adjusting the product mix of OEMs. (Differing margins between products means that an adjusted project mix leads to a change of margins.)
- CO₂ compliance targets are becoming harder to reach, due to moves towards 'real world' testing, and compliance costs are growing.
- The preparedness of OEMs for the emergence of a "a new powertrain order" (of hybrids and electric vehicles) is likely to be defined by their current footprint and relative levels of R&D capex.
- Risks and opportunities for suppliers (from a swifter decline in diesel) would show in revenues, but the impact of rising selective catalytic reduction (SCR) penetration balances with the declines shown in diesel volumes.

Figure 1: Europe's CO₂ reduction by technology area, and potential additional headwind, g/km CO₂. Source: Plastic Omnium, Exane BNP Paribas estimates

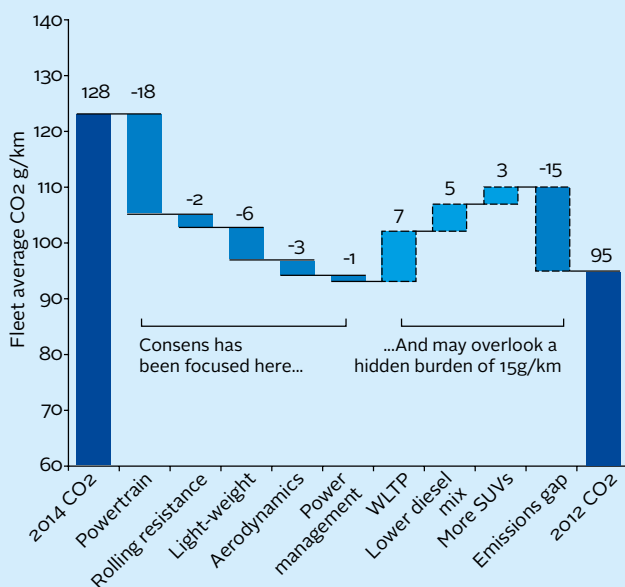
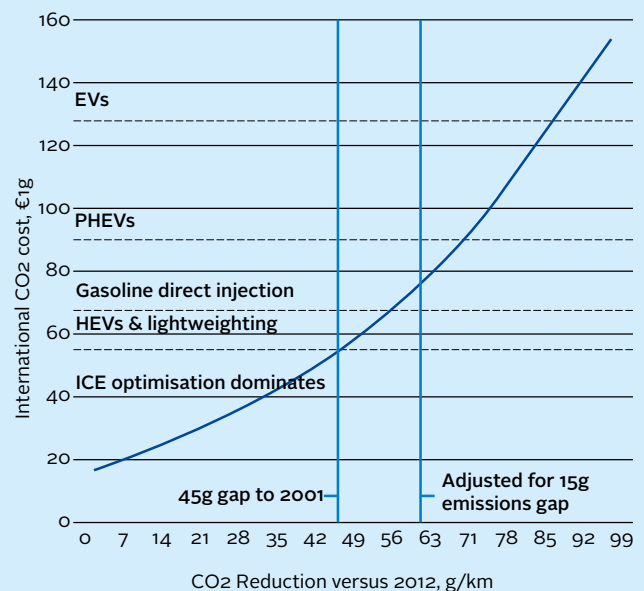


Figure 2: Incremental CO₂ reduction cost per gram (in 2014 costs), EUR/g. Source: Exane BNP Paribas estimates



Theme exposure

One of the most common forms of ESG-integrated research explores which industries are associated with an ESG theme, and in turn which companies within it. Typically, the research can be split into five stages.

Report title	Investing in Education (September 2014)
Sell-side broker	Kepler Cheuvreux
Lead analysts	Andrea Beneventi, Samuel Mary

Stage 1 - In Investing in Education, Kepler Cheuvreux notes the size of the market: “USD4.6trn is spent every year on education globally, second only to healthcare, and more than defence and R&D combined. Most of the money goes into salaries, making education an underinvested space. The global investable market cap is USD70bn, versus USD4.0trn in healthcare and USD370bn in defence. [...] The global educational market benefits from a set of demand macro-drivers, which have been detailed in-depth by economists and industry participants in recent years, [including]: ever-increasing global government spending in basic education; growing global market for higher education; growth of the global middle class.”

Stage 2: Identify investable entry points

Identify how (if at all) it is possible to gain exposure to the market via equity investment.

Report title	You've been hacked! (September 2015); Feed the world (March 2015)
Sell-side broker	Bank of America Merrill Lynch
Lead analysts	Sarbjit Nahal

Stage 2 - Bank of America Merrill Lynch identifies:

- “multiple entry points for investors wishing to play the Cybersecurity theme and anticipate fast growth for the likes of: analytics, APTs, automated incident response, biometrics, cloud security, cognitive security, consulting, critical infrastructure & homeland security, e-commerce & payments, endpoint security for IoT, encryption, mobile security, next-gen firewalls, network security, PAM, and threat intelligence”;
- “eight entry points for investors wishing to play the food security theme: (1) Agricultural Equipment; (2) Agricultural Inputs; (3) Agribusiness, Protein & Dairy; (4) Farming; (5) Food Safety & Animal Health; (6) Water; (7) Healthy Eating; and (8) Reducing Food Waste.”

Stage 1: Identify trends

Find out the size and segment of the market that is exposed to the ESG theme and forecast the market's growth potential.

Report title	Telecom: the great equaliser (April 2016)
Sell-side broker	HSBC
Lead analysts	Robert Walker

Stage 1 - HSBC analysts estimated the future market growth potential of mobile services. “The cumulative market size of these mobile services (mobile money, m-Health and m-Education) supporting social inclusion is estimated to grow over five-fold to USD210bn by 2020. We consider mobile-money to have the greatest positive impact on the top lines of the telecom operators and it could be truly disruptive as it could in theory completely remove the need for conventional banking infrastructure in rural areas, where banking requirements are normally basic, i.e. deposits and withdrawals.”

Stage 3: Identify stocks

Identify the individual stocks that are exposed to the theme.

Report title	Telecom: the great equaliser (April 2016)
Sell-side broker	HSBC
Lead analysts	Robert Walker

Stage 3 - HSBC analysts identified which banks are exposed to mobile money and other mobile financial services. “We identify two Kenyan banks [...] that benefit from this collaboration – both of which we rate as Buy.

- “In March 2015, Kenya Commercial Bank (KCB) launched its KCB M-Pesa product in collaboration with Kenya's largest mobile operator, Safaricom, offering mobile phone-based lending and deposits. After only nine months of operations KCB M-Pesa had achieved (i) 4.7m customers, (ii) disbursed loans over KES9.1bn (2.6% of KCB's net loans), and (iii) total transactions of KES21.6bn (almost double the transactions in 2014).
- “In April 2014, Equity Group Holding received its mobile virtual network operator (MVNO) licence and partnered with Airtel Kenya to offer mobile phone-based services. Equity Group's MVNO is called Equitel. In a market dominated by Safaricom M-Pesa, Equitel has grown its subscriber base to 1.7m as of January 2016.”

Stage 4: Analyse stock exposure

Quantify how exposed a company is to the theme. The best stock exposure analysis details the precise revenue exposure of companies.

Report title	"Green Impact Screener" (April 2014)
Sell-side broker	Kepler Cheuvreux
Lead analysts	Samuel Mary

Stage 4 - Kepler Cheuvreux details the EBIT and/or sales exposure to green themes.

Figure 1: Exposure to green themes (2013 and 2016E)

Company	Sector	Exposure (2013)	Exposure (2016E)
Alternative Energy and transport			
Alstom	Capital goods	Total group: 56% of sales	60% of sales 48% of EBIT
o/w:		Rail transport: 28% of sales 21% of EBIT	Rail transport: 30% of sales 25% of EBIT
		Energy efficiency (grid management solutions): 19% of sales 14% of EBIT	Energy efficiency (grid management solutions): 20% of sales 16% of EBIT
		Renewable energy (power generation): 9% of sales 6% of EBIT	Renewable energy (power generation): 10% of sales 7% of EBIT
Ansaldo STS	Capital goods	100% of sales	100% of sales
CAF	Capital goods	100% of sales	100% of sales
Groupe Eurotunnel S.A	Transport	94%	NA
Vossloh	Capital goods	100% of sales	100% of sales
Biomass resources			
Ence	Paper	27% of sales	27% of sales

Report title	Semiconductors - a driving force for energy efficiency (July 2015)
Sell-side broker	DZ Bank AG
Lead analysts	Marcus Pratsch

Stage 4 - DZ Bank argues that energy efficiency is a key revenue driver for the semi-conductor industry, and identifies a number of companies that can benefit from demand from major industrial sectors for products that help reduce CO2 emissions. "IFX (Infineon Technologies) generates around 60% of sales with its products and solutions for a more efficient use of energy. It has a firm position in the power semiconductor market where it is the global leader. Infineon's semiconductors control the power supply for electric drives, household devices and lighting systems, among other things[...]. With its current portfolio, IFX has reported average annual sales growth of around 9% between 1999 and 2014. The four segments with a focus on the key challenges energy efficiency, mobility and security remain in high demand. IFX anticipates it will continue to generate growth in the range of its historic growth rates and targets an average of 8% p.a."

Stage 5: Stock valuation and investment recommendation

Connect the ESG theme, the market trend, the entry points and the exposure of individual companies with the stock valuation of those companies, delivering an ESG-driven investment recommendation.

Report title	Battery Rush (December 2015)
Sell-side broker	CLSA
Lead analysts	Ken Shin

Stage 5 - CLSA's Asian clean-tech report Battery rush connects climate change with the emergence of new battery technology, forecasted growth in the electric vehicle market, subsequent demand for lithium-ion batteries, the dynamics of the battery market, the positioning of the companies within it and the valuation of those companies.

INTEGRATED PERFORMANCE BENCHMARKING

When the ESG issue is clearly significant in shaping the competitive dynamics within an industry, but it is less clear how this can be translated to the company's financials, analysts often apply a score. They assess companies based on ESG and other financial factors, and then allocate a score that reflects their absolute performance and performance relative to industry peers.

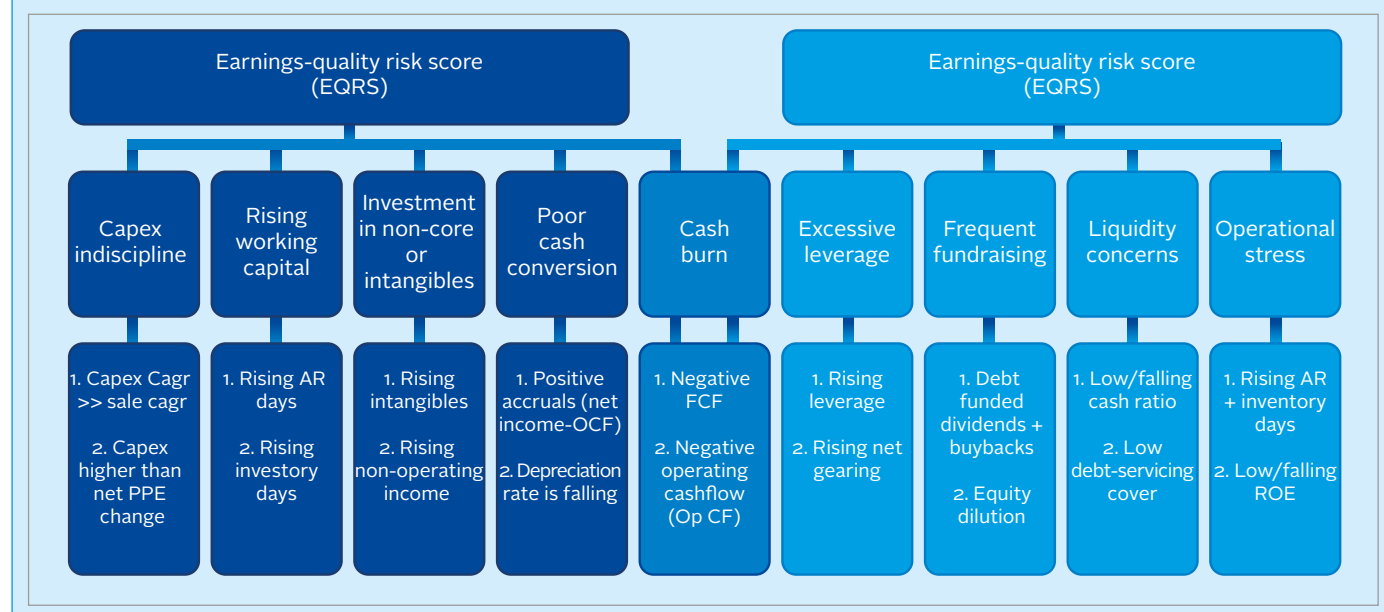
The score guides the buy-side investor on which stocks have performed well and badly based on the relevant factors, and hence could affect investment decisions. These scores differ from ESG ratings by ESG research providers, as they explicitly consider the financial impact of ESG issues.

Report title	Red Flags: Forensic analysis of accounting anomalies (August 2015)
Sell-side broker	CLSA
Lead analysts	Desh Peramunetilleke

Through quantitative back-testing, CLSA develops a set of 20 indicators that are combined into two scores – earnings-quality risk score (EQRS) and balance-sheet-quality risk score (BQRS) – to help investors identify companies that may be manipulating their accounts in a way that risks hiding chronic value destruction or acute accounting blow-ups.

While the analysts are keen to stress that there is no immediate read across to stock recommendations (“every red flag raised by a quant screen is not a smoking gun”), they also highlight how “companies with high EQRS scores have underperformed by 7% per annum since 2000” and those with “high BQRS scores have underperformed by 18% per annum”.

Figure 1: Framework to identify companies with poor earnings and balance-sheet-quality



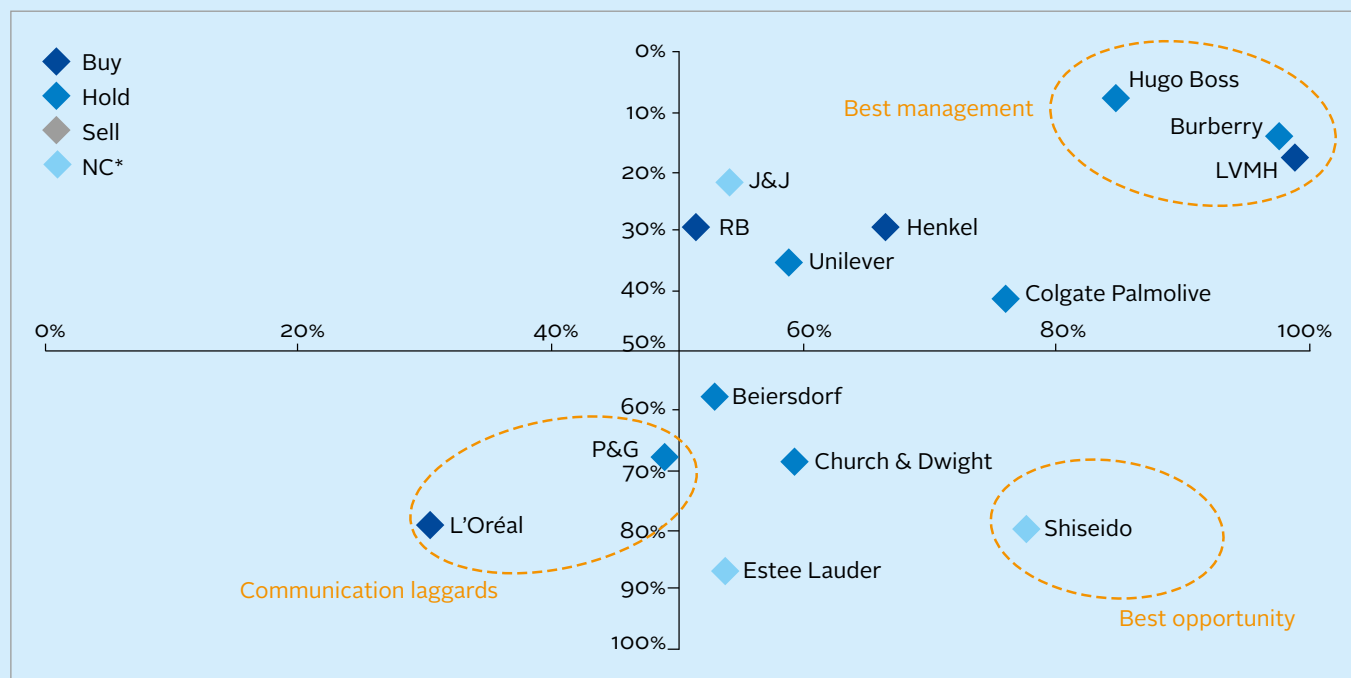
SUBJECT-SPECIFIC BENCHMARKING

This indicates potential disruptions to competitive positioning within individual sectors. The indicators in this technique are sector-specific and must be deeply rooted in the competitive dynamics of the sector if they are to be valuable.

Report title	Natural beauty: Controversial chemicals in the HPC industry (October 2015)
Sell-side broker	Societe Generale
Lead analysts	Carole Crozat

This examines controversial chemicals in the HPC industry. Analysts have drawn on consumer-accessible information (market research, campaigning organisations and web search), and combined them with operational and financial metrics (notably category exposure and US market exposure) in order to weight indicators that give insight into potential disruption to competitive positioning within the industry.

Figure 1: 2015 controversial HPC matrix



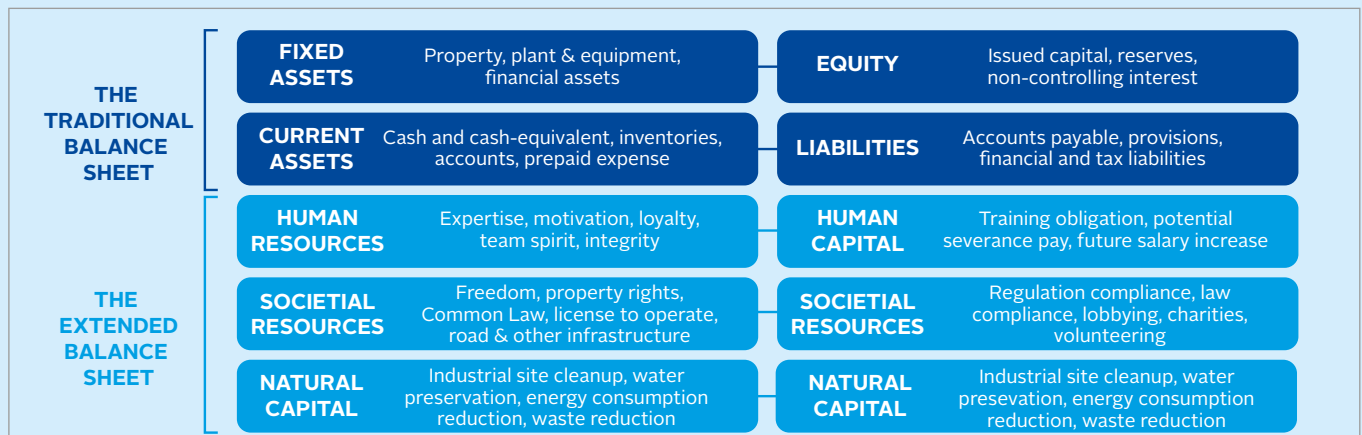
INTEGRATION IN THE COMPANY VALUATION MODEL PHASE

This is the stage in the valuation process at which analysts adjust their models and calculate a fair value/target price for a company.

Report title	Aerospace & Defence: is ESG ready for lift-off? (December 2011)
Sell-side broker	Oddo Securities
Lead analysts	Jean-Philippe Desmartin

One example of sell-side research that applies integration techniques at the valuation phase is Oddo Securities' development of a Weighted Average Cost of All Capital (WACAC). Oddo argues that emerging environmental and social themes make it necessary to take a broader perspective of companies' assets and liabilities and to reflect this in the cost of capital that is used within a discounted cash flow (DCF) valuation.

Figure 1: Broadened panorama of a business' various assets and liabilities



This approach adds Natural Capital and Human Capital to the cost of equity and the cost of debt such that the weighted average cost of all capital is calculated as follows:

$$WACAC = \left[\frac{E}{E+D+N+H} \right] r_e + \left[\frac{E}{E+D+N+H} \right] r_d + \left[\frac{E}{E+D+N+H} \right] r_n + \left[\frac{E}{E+D+N+H} \right] r_h$$

Oddo further argues that “the cost of shareholders' equity also needs to be re-examined using the following formula:

$$\text{Adjusted Cost of Equity} = R_f + \beta_s E [R_s - R_f] + E(R_c)$$

where R_f remains the traditional risk-free cost. In contrast, R_s corresponds to the profitability required for the sector by investors in light of specific risks. The environmental and social risks are evaluated, a Sustainability Intensity and Intellectual Capital Intensity assigned and combined (on a weighted basis) to give an ESG Intensity score which can then be applied to the valuation of stocks.”

In the example submitted in November 2014, this resulted in the following adjustments to valuations within the European real estate sector: “As the real estate sector is assigned an ESG intensity score of 2, the impact on our target prices will be as follows:

- Unibail-Rodamco: the target price would rise from € 207.0 to € 222.5 (+7.5%) since the group has a Strong opportunity (1) recommendation in a sector with weak ESG intensity.
- Klépierre: the target price would rise from € 39.0 to € 41.0 (+5%) as the company has an Opportunity (2) recommendation in a sector with average ESG intensity.”

INCENTIVISING THE SELL-SIDE TO PRODUCE ESG-INTEGRATED RESEARCH

As well as the strength of the underlying investment case for integrating ESG factors' influences on economies, industries and stocks, the sell-side's production of ESG-integrated research can be motivated by requests and commission-based incentives from the buy-side.

Our research identified the following bases being used for determining the amount of commission to be allocated to ESG-integrated research:

- **Brokerage commission percentage**
Allocating a percentage of overall commission, to incentivise further ESG-integrated research.
- **Fund-specific commission percentage**
Allocating a percentage of the commission generated from specialist responsible investment funds' trading.
- **Voting for brokers**
The investment team, including ESG specialists and managers, can vote on which sell-side broker(s) provides the best ESG-integrated research.
- **Scoring brokers**
Brokers that are rated higher than a base score on their ESG-integrated research and offering are considered eligible for selection. Those rated below a base score have one year to exceed the base score, after which they can no longer be selected.

BACKGROUND ON SELL-SIDE COMMISSION

Traditionally, buy-side investors have paid for sell-side research by directing their stock-trading activity towards those brokers that provide them with the best research.

Typically managers either tag individual trades (e.g. "I'm doing this trade via ABC Capital Markets because of the great research on income inequality written by Jenny Jones") or use a broker vote process whereby analysts and managers are invited to consider which sell-side analysts and salespeople have delivered the best research and to use this to set commission allocation weightings for the period (typically quarter) ahead.

Importantly, there is no fixed price at the point that the research is delivered: it is purely at the discretion of the investment manager and dependent on the volume of trading in the period ahead.

ASSESSING EXTERNAL MANAGERS




To integrate ESG considerations into their externally-managed assets, asset owners (or their investment consultants) will assess external managers' integration practices. They do this through their existing selection, appointment and monitoring (SAM) process in order to identify, hire and appraise managers that will be able to comprehensively meet their mandate.

To do this, asset owners need a good understanding of the manager's investment approach and performance, risk management, stock selection and portfolio construction decisions. This chapter provides guidance on how to assess external investment managers' integration practices at each stage of an asset owner's existing SAM process, and includes interviews with asset owners providing their insights on each stage of the process.

It builds on the 2013 publication [Aligning expectations – Guidance for asset owners](#) on incorporating ESG-factors into manager selection, appointment and monitoring, which focuses on developing, reviewing and setting responsible investment expectations, and assessing managers' responsible investment practices, including integration, screening, thematic investing, voting and engagements.

SELECTING, APPOINTING AND MONITORING MANAGERS

The table below outlines opportunities to integrate ESG considerations throughout the process of selecting, appointing and monitoring managers. These opportunities are covered in more detail in the "Selection", "Appointment" and Monitoring" sections of this chapter.

SELECTION 	
Assessment topics	Investment policy and firm structure Investment process Active ownership practices Reporting
Assessment methods	Market screening Requests for proposals (RfP) Questionnaires Meetings
APPOINTMENT 	
Contract topics	Investment approach Monitoring Active ownership Reporting
MONITORING 	
Assessment topics	Security analysis and selection Active ownership examples
Assessment methods	Reporting Peer analysis Questionnaires Meetings

As ESG integration techniques vary widely (See chapter 1: [Integration Techniques](#)), it is important for asset owners to define what ESG integration means to them in their investment strategy, policy and SAM process. This enables asset owners to evaluate external managers that meet their expectations for the level and style of ESG integration applied to their portfolio, and allows investment managers to clearly understand those expectations.

When interacting with managers, an asset owner must tailor their expectations according to various characteristics.

- **Location:** ESG integration is not uniformly applied across the world. For instance, North American managers do not typically use the same integration techniques as European managers.
- **Size:** Smaller firms may have fewer responsible investment tools and staff to integrate ESG factors into processes, and so cannot be expected to have the same ESG offering as larger firms. Alternatively, some smaller firms are responsible investment specialists and therefore particularly well-equipped.
- **Style:** Different investment styles can have different integration techniques and different ESG risk characteristics. For example, a value manager can invest in companies that have been assessed to have previously performed badly based on ESG criteria but are now showing signs of improvement and an opportunity to generate alpha. If the manager holds a significant number of companies that have a poor but improving ESG performance, the ESG risk of the portfolio could be high.
- **ESG experience:** Managers that have only recently started to incorporate integration practices may offer less than managers that have been doing so for longer, but the respective managers' intention to continually develop their integration practices is important in the long term.

A TWO-WAY DIALOGUE

Investment managers should play their part in discussions by proactively asking about their client's investment strategy and policy, their integration practice expectations and the integration practices of their other external managers.

Example questions:

- What, in depth, is the rationale behind your investment strategy and policy?
- What are the most material ESG issues and themes that impact your whole portfolio? What drives materiality? What are your views and expectation on them?
- To what extent do ESG factors play a part in the manager selection and monitoring process?
- What are your integration practice expectations of your investment managers?
- What information do you require on our investment process, integration practices and investment decision-making?
- What information, including regular reports, do you require about the portfolio holdings?
- Do you expect your investment managers to integrate ESG factors into their valuation models?
- Do you monitor the ESG risk exposure of your portfolio?

Managers should also keep up-to-date on changes to their client's requirements, such as around investment strategy, policy or other changes that could alter their operating environment. Reporting timeframes could determine the depth of the discussion, e.g. investment policies do not change very frequently, whereas elements within the operating environment may.

Example questions:

- Has your investment strategy or policy changed?
- Has your operating environment changed, resulting in material changes to the investment scope?
- Do you have any examples of ESG integration best practice from other managers?

SELECTION

The manager selection process starts by defining the portfolio requirements in the mandate, before issuing a Request for Information (RfI) and/or Request for Proposals (RfP) (sometimes with an accompanying questionnaire). The short-listed investment managers will usually be required to complete a more detailed questionnaire and attend one or two meetings with the asset owner, after which an investment manager will be chosen. The approach will differ from asset owner to asset owner, depending on portfolio level expectations, investment horizons and size.

Selecting an investment manager that can act in accordance with an asset owner's investment preferences requires thorough due diligence of the manager's investment approach and performance, investment process, stock selection and portfolio construction decisions. The due diligence of an investment manager's ESG integration techniques can be included in the existing selection process, within each assessment method listed below.

SELECTION	
Assessment topics	Investment policy and firm structure Investment process Active ownership practices Reporting
Assessment methods	Market screening Requests for proposals (RfP) Questionnaires Meetings

ASSESSMENT TOPICS

For investment managers to effectively perform ESG integration practices, ESG factors should be systematically and explicitly included in all processes and tools within an investment management firm. Therefore, questions on ESG integration should be included amongst all questions related to the key assessment topics listed above.

Example questions:

Investment policy and firm structure

- Does your investment policy refer to your integration practices? If so, please enclose.
- Which person/team/committee is responsible for implementing a responsible investment programme and who is responsible for ESG analysis within the investment process?
- Does your organisation have a dedicated ESG team?
 - If so, then please describe:
 - how the investments team works with the ESG team;
 - the ESG team's responsibilities and how their work is used by the investments team;
 - how the ESG team interacts with the investments team and how often;
 - where the ESG team is located relative to the investment managers (e.g. same building, same floor).

- if not, please describe:
 - if mainstream analysts/managers have been trained on ESG issues, and how;
 - what ESG research mainstream analysts/managers conduct.

Investment process

- What are some specific examples of how ESG factors are incorporated into your investment analysis and decision-making process (e.g. asset allocation, definition of the investment universe, portfolio construction, fundamental or sector analysis, stock selection)?
- What ESG data, research, resources, tools and practices do you use to integrate ESG factors into your investment process, valuations and decisions?
- What weighting do ESG factors have on the decision-making process and investment decisions?
- How often do you review the ESG risk exposure of the portfolio and how often do you review your past ESG research and investible universe?
- How do you attend to both financial and ESG criteria during stock analysis and portfolio construction?

Active ownership

Asset owners may decide to hold and execute the shareholder rights internally, but if they outsource active ownership to the investment manager, the following questions are relevant:

- How does your active ownership practices impact investment decisions?
- What are some specific examples of how information acquired from voting and engagement activities translates into investment decisions?
- How are portfolio managers involved in active ownership activities?

Reporting

- How often and how (e.g. meetings, written reports) will you report on ESG integration activities and performance?
- How do you communicate your ESG integration performance to your stakeholders (e.g. investors, staff, consultants, service providers, intermediaries)?

ASSESSMENT METHODS

There are a number of ways that an asset owner can assess an investment manager's integration practices using the questions listed above.

Market screening

Asset owners can screen the market, using consultants or an in-house team, to shortlist eligible managers that meet their investment needs, including on ESG integration.

Consultants or in-house selection teams can use managers' annual financial reports, responsible investment reports and the PRI's publicly available Transparency Reports to gain insight into investment managers' investment performance, decision-making and ESG integration approach. The PRI's Assessment Reports provide more detailed information on a manager's ESG integration capabilities. (Publishing these is voluntary – if a manager has not already disclosed theirs publicly, asset owners should ask managers to provide them with a copy.)

An investment manager's performance and integration practices could be monitored for a set period of time while they are being considered for selection, to gain some insight into their likely future performance.

Request for Information (RfI) and Requests for Proposals (RfP)

As a key first step resource in assessing managers' capabilities, asset owners should ask managers to answer questions on their ESG integration capabilities within the RfI and/or RfP.

Questionnaires

Asset owners can expand the questionnaires typically included in their RFPs and first round meetings (covering track record, recent investment performance, investment style, firm structure and governance, investment process and investment policy) to include questions on ESG integration. Questions used here usually focus on how ESG factors are included in the investment process, what ESG research is used and how ESG factors affect investment decisions.

Embedding ESG-related questions throughout the questionnaire, rather than separating them out into an ESG-specific section, makes it more likely that they will be responded to by portfolio managers rather than a separate team that is not involved in the investment decisions.

Meetings

Meetings that asset owners hold with the managers that have made it through the RfP stage provide another opportunity to assess managers' investment approach, investment process and ESG integration capabilities.

It is an imperative to meet the portfolio manager, investment team and ESG team (if the manager has one) in person. Visiting the teams of a prospective manager gives a better understanding of the level of responsible investment conviction they hold, as does their level of willingness to discuss their approach and performance in person. It is also an opportunity to verify the responses to the questionnaire, by seeing the investment process in action.

INTERVIEWS WITH ASSET OWNERS ON SELECTION PHASE

CASE STUDY

Zurich Insurance Group



CASE STUDY

The Pensions Trust



CASE STUDY

California State Teachers' Retirement System (CalSTRS)



CASE STUDY

Environment Agency Pension Fund



INTERVIEW

[BACK](#)


SELECTION PROCESS

Company	Zurich Insurance Group
Interviewee	Manuel Lewin

PLEASE DESCRIBE YOUR SELECTION PROCESS

We have an in-house asset manager selection team that selects and monitors the external managers. We do not usually recruit investment consultants.

Our process consists of:

1. **Defining the guidelines for the portfolio:** It is crucial to start the selection process by defining:
 - a. the specific investment objective of the portfolio or portfolios that will be part of a mandate;
 - b. the type of manager we are looking for;
 - c. the desired characteristics of the portfolio, including any ESG integration requirements.
2. **Issuing Request for Information (RfI) and/or Request for Proposals (RfP):** To create a large pool of candidates for a particular mandate, we send out an RfI and then an RfP. (Depending on the circumstances, for example how well we know the market, we will sometimes only issue a RfP.) We will then select the successful candidates for due diligence reviews.
3. **Conducting due diligence:** This consists of on-site visits and presentations.
4. **Selecting a candidate:** After evaluating the short-listed candidates, a manager is selected for the mandate. We may ask for additional data after the due diligence review has been performed.

These procedures are conducted by the manager selection team and overseen by a manager selection committee. The composition of the committee can change depending on the type and nature of the mandate, but typically involves all the stakeholders, including a local chief investment officer, balance sheet representative and regional investment manager.

WHAT INFORMATION DO YOU SOURCE DURING THE SELECTION PROCESS?

We look at: track record, investment performance, investment style, firm structure and investment process, investment beliefs, ESG integration and many other aspects (including fees, of course).

We give all these aspects a weight in our assessment of an external manager. ESG consideration is typically weighted 5%, depending on the mandate, and the responsible investment and manager selection teams work together on the assessment of ESG performance.

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF POTENTIAL PORTFOLIO MANAGERS?

The ESG element of our assessment is not treated any different to the non-ESG element of the assessment and is part of the core process at the RfI, RfP and due diligence stages.

WHAT DO YOU LOOK FOR WHEN YOU ARE ASSESSING POTENTIAL PORTFOLIO MANAGERS' ESG INTEGRATION PRACTICES?

We focus on integrated analysis as we believe that ESG issues are relevant factors from a risk and return perspective, and we want to make sure that they are part of the managers' security selection process.

We look for four elements that are absolutely critical for an integrated analysis approach, which are applied to both our external and internal managers. These four elements form the framework for our questions in RfIs and RfPs as well as in the appointment and monitoring phase.

1. Training and awareness – As ESG issues are complex and not always intuitive, managers should receive training to correctly identify material ESG factors.
 - Please describe any relevant ESG-related training that managers and equity analysts receive.



2. Access to information – Once you understand what ESG issues are all about, analysts and managers should analyse these issues, which requires access to ESG data, ratings, analysis and research.
 - What resources (research, analytical tools, etc.) are available to managers and analysts to assess ESG factors?
3. Investment process – Once you have the training and have access to research, there should be a process that integrates material ESG factors in a systematic way into your security analysis and selection.
 - Please describe how you integrate environmental, social and governance (ESG) factors into your investment process, particularly with respect to security/asset selection and risk management.
 - Using a specific example of an ESG-related risk or opportunity, describe how the process in place has influenced the decision-making.
4. Active ownership – Managers are expected to actively execute proxy votes based on best-practice policies addressing ESG issues, and to integrate relevant ESG issues in discussions with investee companies, either as part of regular company meetings, or through separate channels.
 - Do you discuss specific ESG issues as part of engagements with investee companies' management? If yes, please describe the process and provide three examples. If no, please explain why not.

In evaluating answers, it's important to understand how these ESG integration practices apply to the specific mandate and staff in question, not just how they relate to a high-level position statement that the manager may only apply in certain regions or strategies.

INTERVIEW

[BACK](#)


SELECTION PROCESS

Company	The Pensions Trust
Interviewee	Jennifer Anderson

PLEASE DESCRIBE YOUR SELECTION PROCESS

We outsource our day-to-day investment decision-making to external fund managers, so selecting and appointing the right fund managers is fundamental to the success of our investment strategy.

Our process starts by screening Mercer's manager research database to create a long-list of suitable managers that potentially meet our search criteria. Then we spend time reviewing all of the available research on the manager to whittle down the long-list to a short-list of four or five preferred managers.

The next stage involves getting to know the short-list of managers better. We typically do this by spending half a day meeting with them at their offices, during which we will familiarise ourselves with their investment philosophy, investment process, business model and people. We also try to get a feel for the culture of the team and the organisation more generally.

Once all of the meetings with the short-listed managers have been completed, the investment team meets to discuss the merits of those managers. We may decide to have a second round of meetings with one or two of the candidates before we invite our preferred manager to meet with our investment committee. From a governance perspective, the investment committee is responsible for final approval, at least for all of our alternative asset classes.

WHAT INFORMATION DO YOU SOURCE DURING THE SELECTION PROCESS?

Ultimately, if it is an active manager, we are looking for a set of attributes that gives us conviction that the manager has sufficient skill to outperform a benchmark index or performance target.

We have an internal document setting out the key attributes that we look for in a manager, including things such as the business model, appropriate remuneration structures, long-term mind set, low portfolio turnover, strong risk management, decision-making processes that embed ESG, to name a few.

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF POTENTIAL PORTFOLIO MANAGERS?

The review of a manager's integration of ESG is now reasonably well-integrated into the selection process, although we would tailor our expectations depending on the asset class and style of the investment manager.

We have developed a specific set of criteria in terms of ESG: we want to know more about their over-arching philosophy on responsible investment/ESG, and how well it is aligned with our own investment beliefs and policy. We like to see evidence of CEO- or CIO-level commitment, and that the manager is advancing responsible investment practices within its peer group. Following this, we normally spend more time trying to understand how these over-arching corporate policies translate to the strategy that we are interested in allocating to. We certainly think that portfolio managers should be able to talk about ESG integration at both the portfolio construction level and at the regional and/or sectoral level before drilling down into one or two securities, explaining how ESG factors have been taken into account in the valuation and the investment decision.

Sometimes we find it is helpful to pick a couple of the relevant topics and try to discuss these in more detail. One of the main topics we have focussed on in the last year or so is climate change. We have had a number of discussions with our active equity managers on their long-term view on the energy transition and how this is reflected in the portfolio.

WHAT DO YOU LOOK FOR WHEN



YOU ARE ASSESSING POTENTIAL PORTFOLIO MANAGERS' ESG INTEGRATION PRACTICES?

The answer to this question really depends on how experienced and knowledgeable the manager is about responsible investment. In the best cases we select a manager that has a long-term investment philosophy on responsible investment aligned with our investment policy, and who is able to demonstrate how ESG factors are integrated in their research and investment decisions.

But we are also willing to work with managers that are new to ESG, as long as they are committed to being aligned with our philosophy on responsible investment. If they are at the start of their journey, buying in some ESG data alongside internal training for analysts is a good step in the right direction.

INTERVIEW

[BACK](#)


SELECTION PROCESS

Company	California State Teachers' Retirement System (CalSTRS)
Interviewee	Brian Rice

PLEASE DESCRIBE YOUR SELECTION PROCESS

The in-house selection team works closely with our consultants throughout the process. We would first identify a need for a portfolio, for example a US large-cap value fund, and put out a call for managers. The RfP will include the portfolio requirements and a request for managers to submit responses to a list of questions, including ESG-related questions.

Based on the manager's responses, we select a subset to interview and for due diligence review. Consultants are involved in the RfP review, recommending who to interview and sitting in on the interviews. We also talk to other parties to get some broader insights on the managers.

We would then select an even smaller subset of managers, some of which we will hire whilst others will be kept on record as pre-qualified for future RfPs.

WHAT INFORMATION DO YOU SOURCE DURING THE SELECTION PROCESS?

Information structured around what we refer to as the 4Ps - philosophy, process, people and performance:

- **Philosophy**
What guides your overall strategy?
- **Process**
What are the steps that you take to put the strategy into action? What do you look at when you invest in a security and when you continue to re-evaluate securities during the holding period?
- **People**
Who are the key contributors to the portfolio? Have they had training and are they compliant?
- **Performance**
What is the track record with the strategy?

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF POTENTIAL PORTFOLIO MANAGERS?

We look at managers' ESG integration practices at every step of the process. There are ESG-related questions in our RfPs, due diligence questionnaires and interviews. We ask questions that cover the 4Ps:

- **Philosophy**
Is ESG integration a part of your philosophy? Do you consider ESG issues in what you invest in?
- **Process**
How do you incorporate ESG factors into your strategy and as a part of your risk analysis? Where do you source the ESG research and tools? Do you make your own assessment on ESG issues or use third-party ESG ratings? How are active ownership practices and outcomes integrated into investment decisions?
- **People**
What is the level of investment and ESG expertise in the team? Where in the team is the ESG expertise? Do you have ESG specialists? Is ESG a part of everyone's focus?
- **Performance**
Do you measure the ESG risk of the portfolio?

The responses to ESG-related questions may or may not have an impact on the final decision. If they have a good process, good people and adhere to a strategy, but the ESG component is not quite as strong, then we could hire them. On another occasion, there could be similar managers that perform well in our assessments but one has better ESG credentials than others. Then, ESG integration can influence the final decision.



Another approach we use is to monitor managers' performance and practices before considering them as a candidate in our selection process. We like to get to know them. On occasion, we would meet managers at a conference and then follow their organisation by reading their performance updates and pitch books to find out if they align with our beliefs.

Our consultants also provide information on managers' ESG integration practices.

WHAT DO YOU LOOK FOR WHEN YOU ARE ASSESSING POTENTIAL PORTFOLIO MANAGERS' ESG INTEGRATION PRACTICES?

We analyse whether the manager really takes material ESG issues seriously. We expect our managers to spend time making their own assessment rather than, for instance, objectively applying bought-in ESG ratings.

We find the best way to find out how seriously the manager takes ESG issues is to visit them to confirm answers in questionnaires. We would interview not only the portfolio managers, but also people associated with them.

INTERVIEW

[BACK](#)


SELECTION PROCESS

Company	Environment Agency Pension Fund
Interviewee	Faith Ward

PLEASE DESCRIBE YOUR SELECTION PROCESS

We will define the portfolio guidelines for a new mandate after we have reviewed our strategic asset allocation and made a risk assessment of our overall portfolio. The guidelines and expectations of all our mandates vary, and some require more detail than others: for instance, our emerging market mandates where we believe the identification of environmental, social and environment risks is particularly important when selecting stocks.

Once the guidelines have been set and the RfP has been created, our in-house selection team will work with consultants, including dedicated ESG consultants who provide additional insights on managers' integration practices, to short-list prospective managers.

A panel, usually around eight people, will then assess the RfPs of the short-listed managers and score responses to each question. The scores are weighted and then summed to contribute to a manager's overall score. The managers are ranked and moderated before approximately five managers are chosen to attend interviews with a chief pensions officer, chief investment officer and chief responsible investment and risk officer. We also actively encourage members of our investment committee to participate.

Finally, a full proposal is presented to the investment committee, who must approve the manager's appointment. We aim to undertake a due diligence visit to the manager's office in the early days of the mandate implementation. We like to examine their systems, see the portfolio manager, the ESG lead and other staff perform their daily tasks and see interaction between teams.

The chief investment officer and responsible investment and risk officer assess managers during every step of the process. The same officers are also responsible for the on-going monitoring, which helps ensure that there is a good shared understanding of expectations.

WHAT INFORMATION DO YOU SOURCE DURING THE SELECTION PROCESS?

During the selection phase, we look at track record, investment style and information related to what we summarise into the 6Ps:

- 1. Philosophy**
their overall investment philosophy, including how they think integrating ESG factors adds value and how this is evidenced;
- 2. Policies**
including ESG policies;
- 3. People**
the people involved, their quality and any external resources used;
- 4. Processes**
whether their investment process clearly integrates ESG into investment analysis and decisions;
- 5. Participation**
in industry groups;
- 6. Partners**
their willingness to see us as partners in delivering our investment strategy.

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF POTENTIAL PORTFOLIO MANAGERS?

We ask managers to explain their technical capacity to take account of ESG issues at the expression of interest, request for proposal and interview stages.



Our mandates and RfPs explicitly set out our ESG expectations of prospective managers. Managers are required to demonstrate, among other things, their ESG policies, capabilities, track record and performance. We assign a specific percentage (10%-25%) of the overall score for each potential mandate and manager to their ESG capabilities and integration. ESG integration is also taken into account when scoring other areas, including the investment proposition, and the manager's track record and pipeline.

At the interview stages, we discuss ESG integration with the key decision-makers in the investment team. Specifically, we request to interview: the fund manager who will be responsible for the portfolio on a day-to-day basis, the ESG lead and the client contact.

We also analyse the client's PRI Transparency Reports to validate responses and generate questions for on-site meetings.

WHAT DO YOU LOOK FOR WHEN YOU ARE ASSESSING POTENTIAL PORTFOLIO MANAGERS' ESG INTEGRATION PRACTICES?

We look for evidence that demonstrates the managers are assessing the impact of any financially material ESG issues on the future prospects of investee companies or debt, and are taking this into account in their decision-making processes. It is therefore essential to have face-to-face meetings and discuss ESG integration with the portfolio managers and the ESG lead. The ESG lead should demonstrate that they can make an impact on investment decisions and that they are respected by the portfolio managers.

We also like to see evidence of managers assessing themselves on their ESG performance. It is a good indicator that a manager has strong ESG credentials if they produce their own reports on their ESG integration techniques and proactively discuss them with clients.

It is important to stress that what we look for depends on the style of the fund: for example, with active fundamental strategies, we would expect to see the fund manager produce their own research on ESG issues in companies, with systematic strategies the research would focus on process (say for example ESG metrics could be used) and with passive strategies the emphasis is more on stewardship activities.

APPOINTMENT

Once the most eligible asset manager is selected, asset owners can include ESG terms in the investment management agreement (IMA) to formalise their expectations. Legal counsel can advise on specific and objective language.

A legally enforceable side letter agreement, providing a formal record of the owner's wishes and the manager's intention to abide by them, is an alternative to writing ESG-

specific requirements into the IMA. They can also be used to amend existing agreements.

Whilst including ESG-specific terms in IMAs and side letters are ways to hold a manager accountable to the ESG policies, practices and reporting agreed upon during the appointment process, an asset owner may instead, or additionally, focus on regular monitoring to ensure that their managers are consistently improving their implementation of the policies and practices agreed (see section C).

APPOINTMENT 	
Contract topics	Investment approach Monitoring Active ownership Reporting

CONTRACT TOPICS

Example terms:

Investment approach

- The Manager acknowledges that ESG issues have the potential to impact investment risks and returns and that considering these issues alongside traditional factors in investment decision-making can improve long-term risk-adjusted returns.
- The Manager agrees to integrate ESG risks, opportunities and/or performance in their investment process.
- The Manager will ensure that its staff receives adequate training, access to relevant data and information, including considering the extent to which ESG factors generate investment risks or opportunities.

Monitoring

- In pursuing the investment objectives set forth in the Client's (responsible) investment policy, the Manager will have a process for assessing and monitoring current or potential investments in relation to relevant long-term factors such as environmental, social and corporate governance issues (ESG factors).

Active ownership

- The Manager shall act in line with all ESG integration and active ownership responsibilities as outlined in the Investment Management Agreement.

Reporting

- The Manager will report to the Client on the development and/or implementation of any policies, process and fund terms regarding ESG integration.
- The Manager will report to the Client on how the manager considered ESG factors when making investments including any examples of where it impacted the investment decision during the reporting period.

For other examples and a model Investment Management Agreement, see [ICGN's Model Contract Terms Between Asset Owners and Managers](#).

INTERVIEWS WITH ASSET OWNERS ON
APPOINTMENT PHASE

CASE STUDY
Zurich Insurance Group




CASE STUDY
The Pensions Trust



CASE STUDY
California State
Teachers' Retirement
System (CalSTRS)



CASE STUDY
Environment Agency
Pension Fund



INTERVIEW

[BACK](#)


APPOINTMENT PROCESS

Company	Zurich Insurance Group
Interviewee	Manuel Lewin

DO YOU INCLUDE ESG TERMS IN IMAS?

We are working to include ESG in all our Investment Management Agreements (IMAs), to encourage managers to adopt the four elements we look for in selection (training and awareness, access to information, investment process, active ownership) and to ensure that information about the portfolio's ESG performance is made available to the client.

The following is used as a template to introduce ESG language into IMAs :

“In pursuing the investment objectives set forth in the Investment Guidelines, the Investment Manager will have a process for assessing and monitoring current or potential investments in relation to relevant long-term factors such as environmental, social and corporate governance issues (the ‘ESG Factors’). The Investment Manager will ensure that its staff receives adequate training, access to relevant data and information, and applies due care and diligence to applying this process, including considering the extent to which the ESG Factors generate investment risks or opportunities. The Investment Manager seeks to act in the best long-term interests of <client> by taking ESG Factors (identified as relevant) into account when making investment decisions. All else equal,

the Investment Manager will prefer securities which, in the Investment Manager’s assessment, show superior environmental, social and governance practices.”

The ESG terms are not yet in all of our IMAs. This is ongoing work but generally we are having productive discussions with existing managers about getting ESG terms into IMAs, starting with the most substantial relationships. We started to include the ESG terms in new IMAs over a year ago and have managed to retroactively incorporate ESG terms into some of our existing IMAs.

We work with managers and allow them time to improve and achieve the goals across our four elements. It is a discussion, not an ultimatum, but we expect them to comply at some time in the future.

APPOINTMENT PROCESS

Company	The Pensions Trust
Interviewee	Jennifer Anderson

DO YOU INCLUDE ESG TERMS IN IMAS?

We have been including wording on ESG and responsible investment in our IMAs for the last two or three years. We still find that ESG is more applicable to some asset classes and strategies than others so we tailor the wording that we incorporate into IMAs, carefully supported by the advice from our lawyers.

Below is an example of the type of wording we have included in our IMAs to reflect our expectations on ESG.

The manager should:

- research, analyse and incorporate material environmental, social and governance (“ESG”) factors into the credit research and lending process;
- explicitly consider how climate change regulation and the transition towards a low carbon economy might impact the longer-term risk and return of investments and demonstrate to the Investor how it has applied the Investor’s policy on climate change when making investments to high carbon sectors.
- continue to monitor material ESG performance of Underlying Investments and, in the event of poor performance, seek to engage with the relevant Investee Company;
- develop and implement an appropriate and regular reporting process to communicate ESG information back to the Investor as part the quarterly and annual performance reports.

INTERVIEW

[BACK](#)


APPOINTMENT PROCESS

Company	California State Teachers' Retirement System (CalSTRS)
Interviewee	Brian Rice

DO YOU INCLUDE ESG TERMS IN IMAS?

We include ESG terms that say managers' investment analysis should cover 21 pre-defined ESG risk factors: monetary transparency; data dissemination; accounting; payment system: Central Bank; securities regulation; auditing; fiscal transparency; corporate governance; banking supervision; payment system: principles; insolvency framework; money laundering; insurance supervision; respect for human rights; respect for civil liberties; respect for political rights; discrimination based on race, sex, disability, language, or social status; worker rights; environmental; war/conflicts/acts of terrorism; human health.

While the list does not attempt to identify all forms of risk that could be appropriate for any given investment transaction, they do provide a framework of to avoid any of these widely relevant factors being overlooked.

Managers have to affirm at least annually that they have considered the factors when making investment decisions on our behalf.

For several years now, the ESG term has been included in new mandates. It has been tougher to change existing mandates to include these terms, however it is getting easier and we ask some existing managers to affirm that they consider the 21 ESG risk factors without revising the original mandate.

APPOINTMENT PROCESS

Company	Environment Agency Pension Fund
Interviewee	Faith Ward

DO YOU INCLUDE ESG TERMS IN IMAS?

We have covenants that require all managers to consider the ESG risks and opportunities that are financially significant for our fund. Active equity and bond managers are required to carry out annual environmental exercises including measuring a portfolio carbon footprint.

One of our covenants is:

“The Client has appointed the Manager because the Client and the Manager share the view that concentrating on fundamental performance of businesses, integrating sustainability, and the integration of environmental, social and governance (ESG) risks is most likely to deliver a successful long term performance outcome. The Client takes a long term view of its fiduciary duties and expects the Manager to act as if it were a fiduciary investing for the long term in operating this mandate.”


We have always included ESG terms in all our IMAs since 2005. We originally had ESG terms in our mandate, but reverted to some aspects being covered in our covenant as we felt that it improved dialogue and portrayed that the relationship between the client and manager is a partnership, where we work together to achieve the long-term investment objective of the portfolio.

We find it straightforward to use our own IMA in segregated mandates. When we use collective investment vehicles – pooled funds – we work with the providers to make sure we are able to monitor such portfolios from an ESG perspective.

MONITORING

The monitoring phase is crucial to assess the actual delivery of the terms and conditions on which the manager was appointed. This will cover a multitude of areas, includes assessing their investment approach and decisions and their ESG integration practices and performance, including their ability to manage the portfolio in line with the mandate and investment management agreement.

To review investment performance and managers' integration practices, asset owners: organise periodic monitoring meetings with investment managers; ask them to complete questionnaires/regularly report; and/or use methods such as peer analysis, internal scoring systems and portfolio analytic tools.

MONITORING 	
Assessment topics	Security analysis and selection Active ownership examples
Assessment methods	Reporting Peer analysis Questionnaires Meetings

ASSESSMENT TOPICS

For investment managers to effectively perform ESG integration practices, ESG factors should be systematically and explicitly included in all investment decisions. Therefore, questions on ESG integration should be included amongst all questions related to the key assessment topics listed above.

Example questions:

Security analysis and selection

- Have there been any changes to your ESG integration process over the reporting period (e.g. additional resources, information sources)? If so, why?
- Which integration practices/tools have worked and have not worked over the reporting period, and why?
- What are some specific examples of how ESG factors have impacted investment decisions?
- What are some specific examples of major ESG risks that you identified in the holdings in the portfolio over the reporting period, and what have you done to mitigate them?
- Have concerns over tracking error prevented you from divesting a holding with high ESG risks? If so, what is a specific example?
- What are some specific examples of ESG factors contributing to buy and sell decisions, e.g. are there any examples of instances where you chose one company over the other due to ESG considerations?
- What are some specific examples of valuations being adjusted due to an ESG factor? How did this impact the investment decision?

- Regarding the recent revelations about company X in the portfolio, why did you buy/hold/sell the stock or increase/decrease your holdings?

Active ownership

- How was ESG information that had been gathered through active ownership activities used to identify investment risks and opportunities? What impact has this had on investment decisions?
- How have you measured success of the engagement? Was this quantifiable? If not, what were the qualitative results?
- How are portfolio managers involved in active ownership activities?
- What are some specific examples of engagement activities or voting outcomes resulting in a stock being sold or bought?

ASSESSMENT METHODS

There are a number of ways that an asset owner can assess an investment manager's integration practices using the questions listed above.

Reporting

The amount, frequency and type of information that asset owners request from investment managers depends on the mandate, the agreed ESG policies and practices and the asset owner's capacity to review the information. The investment managers' investment process and integration techniques should be included in their reporting and their reports should be regularly updated with examples of ESG integration in the current reporting year.

In 2015, a group of 14 UK pension funds published [A Guide to Responsible Investment Reporting in Public Equity](#), outlining some preferred ESG integration reporting requirements for managers.

Peer analysis

An asset owner can execute, or ask their investment consultant to execute, a peer analysis of ESG integration performance based on publicly available information such as responsible investment reports or the PRI's Transparency Reports. The PRI's Assessment Reports provide more detailed information on a manager's ESG integration capabilities. (Publishing these is voluntary – if a manager has not already disclosed theirs publicly, asset owners should ask managers to provide them with a copy.)

Questionnaires

Questions should cover the assessment topics listed in the table on the previous page, with a particular focus on portfolio construction and stock selection. Information in questionnaires should create a basis for discussions in monitoring meetings (more details below).

Meetings

ESG integration should be discussed alongside investment performance. The asset owner should ensure that they are meeting with the key decision-makers, such as investment analysts, the portfolio manager and the ESG team.

The meetings should discuss the portfolio's investment performance, the level of investment risk in the portfolio, what changes have been made to the investment process and integration practices, and whether the investment manager is actively and successfully integrating ESG factors into investment decisions.

ESG-specific questions should focus on integration practices, portfolio construction and stock selection decisions, including specific stock and sector examples that demonstrate managers' integration techniques and reveal their level of responsible investment conviction. They should refer to the specific issues that are material to the company – e.g. cyber risk for banks, labour standards in supply chains – rather than merely referring to ESG in general.

INTERVIEWS WITH ASSET OWNERS ON MONITORING PHASE

CASE STUDY

Zurich Insurance Group



CASE STUDY

The Pensions Trust



CASE STUDY

California State Teachers' Retirement System (CalSTRS)



CASE STUDY

Environment Agency Pension Fund



INTERVIEW

[BACK](#)


MONITORING PROCESS

Company	Zurich Insurance Group
Interviewee	Manuel Lewin

PLEASE DESCRIBE YOUR MONITORING PROCESS

We have quarterly performance reviews with all our managers (consisting of more quantitative analysis), and annual relationship meetings with key managers that hold multiple mandates (consisting of more qualitative assessments, and covering more aspects of the manager's practices). We are discussing ESG in both these contexts.

We have an internal scoring process that is based on a qualitative assessment of the managers. Every local investment team and our regional investment managers will score asset managers on a number of dimensions, including performance, service, ESG integration etc.

WHAT INFORMATION DO YOU SOURCE DURING THE MONITORING PROCESS?

Whilst the selection process is about the managers' capabilities and what their process looks like, the monitoring process is about what the managers actually do in practice and what is happening in the portfolio.

We look at investment performance and any changes to investment style, whether the portfolio is conforming with the mandate and how proactive the managers are when issues arise.

We want to understand the composition of the portfolio and how integrating ESG factors has impacted it.

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF YOUR PORTFOLIO MANAGERS?

ESG integration is always discussed at annual relationship reviews and, since 2015, we discuss ESG performance of specific portfolios at one of the quarterly performance reviews every year.

There is an additional step for responsible investment in the broader process: a questionnaire is sent out once a year that includes questions based on the four elements mentioned above.

Some of the questions are:

- List all the staff that manage our assets.
- Disclose if they have received training on ESG issues.
- Disclose what data they have access to.
- Describe the investment process used by these staff members.

Based on all these steps, managers are then evaluated on ESG integration as part of our internal manager scoring process.

HOW DO YOU IDENTIFY WHICH OF YOUR PORTFOLIO MANAGERS ARE FULLY INTEGRATING ESG FACTORS INTO THEIR INVESTMENT DECISIONS?

It is not hard to find out how attuned a manager is with ESG issues and to identify those who integrate ESG factors into investment decisions and those who do not. We can immediately tell when asking questions such as:

- Why do we have security XYZ in the portfolio?
- The portfolio possesses a security with a poor ESG rating: tell me a bit more about it.
- What outcome did you expect from COP21? What impact will it have on the holdings of the portfolio?

A manager should understand what drives an ESG rating and should be able to explain why security ABC is in the portfolio despite any ESG issues. It's really the conversation about specific portfolio holdings that reveal the strength of the process. When someone just talks about the ESG rating without going any deeper and assessing what this actually means, then that may be a start, but it is not ultimately sufficient.

We acknowledge, though, that this takes time and sometimes it boils down to the individual rather than the process. We find that, particularly with large asset managers, the quality of the conversation can vary greatly for different portfolios managed in different parts of the organisation.

INTERVIEW

BACK



MONITORING PROCESS

Company	The Pensions Trust
Interviewee	Jennifer Anderson

PLEASE DESCRIBE YOUR MONITORING PROCESS

Our monitoring process involves analysing investment reports and holding regular meetings with managers. Our investment team also have ad-hoc meetings with managers, which allow us to discuss specific issues in more detail.

WHAT INFORMATION DO YOU SOURCE DURING THE MONITORING PROCESS?

The monitoring process gives the opportunity to investigate any changes to the organisation, and the investment team and to really understand the manager's philosophy and process and how it is being applied within the portfolio.

In particular, we talk about:

- anything significant that has happened/was anticipated in the market and how they were/are positioned for that;
- the rationale behind investment decisions that they have made over the last six to nine months;
- examples, including reasons, of buying and selling certain stocks;
- any ESG issues we know are affecting a particular company.

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF YOUR PORTFOLIO MANAGERS?

To complement our existing manager rating system, we have developed an ESG rating framework that rates all our managers across asset classes and strategies. The ESG manager rating is based on four pillars:

1. Values & Investment Philosophy
2. ESG Integration
3. Stewardship
4. Transparency & Reporting (in document)

We review the scores at least annually and disclose how many of our managers have scored A, B, C and D in our annual reports and on our website.

The rating system allows us to monitor the ESG performance of our managers and our portfolio.

Our expectation is that, over time, more of our managers will be either A or B, as we become more confident about expressing our expectations with regard to ESG and responsible investment.

We also request the manager's PRI Assessment Reports, quarterly voting records and information on their engagement activities.

HOW DO YOU IDENTIFY WHICH OF YOUR PORTFOLIO MANAGERS ARE FULLY INTEGRATING ESG FACTORS INTO THEIR INVESTMENT DECISIONS?

It is a good indication that managers are integrating ESG factors when the portfolio managers are willing and capable of discussing ESG issues and how they are integrated into the portfolio, referring to specific holdings/assets. We also look for evidence of ESG integration throughout the discussion, rather than simply as a separate conversation at the end, which is where a number of managers continue to put information related to questions on ESG and responsible investment. We believe it needs to be embedded throughout.

INTERVIEW

[BACK](#)


MONITORING PROCESS

Company	California State Teachers' Retirement System (CalSTRS)
Interviewee	Brian Rice

PLEASE DESCRIBE YOUR MONITORING PROCESS

We have a policy to speak to managers once a quarter and to visit them and have them visit us once a year.

Every quarter, they will prepare a slide deck that contains information on their investment performance and risk, attribution analysis, holdings and ESG analysis. There is no questionnaire but the Global Equities team ask managers to complete a voluntary survey on their beliefs on climate change.

WHAT INFORMATION DO YOU SOURCE DURING THE MONITORING PROCESS?

We are mainly concerned about what has changed since the last time we spoke and we want to understand what influences their stock selection and portfolio construction decision-making.

We would like to know if there were any major organisational changes and personnel changes (for instance any new staff, reduction in staff or changes to support staff), and if there are any changes to the investment process.

We are also very keen to understand what motivates the manager to buy a certain stock, how they deal with investment risks and what the process behind constructing a portfolio is. Examples of questions we ask are:

- Why is security XYZ in the portfolio?
- Please give examples where one or more of the 21 ESG risk factors influence an investment decision.
- You have a lot of energy exposure but not a lot of renewable companies. How have you been looking at the transition to a cleaner economy?
- This company is in a water stress region. Have you considered how water risk will impact its stock price?
- What are the main drivers of portfolio return?
- Why is there a lot of exposure to this sector?

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF YOUR PORTFOLIO MANAGERS?

As well as regular meetings and onsite visits, we use third-party risk analytics tools. These tools help our internal managers to analyse the risk exposure of an individual manager's portfolios and of our overall portfolio. The tools also encourage our internal managers to do research on ESG issues themselves.

The outputs of the risk analytics software tell us what the portfolio holds, and what the portfolio and individual securities risk exposures are, but they do not tell us to what degree ESG analysis is integrated into investment analysis or how it has contributed to investment performance. A manager may have got lucky by choosing companies that had good ESG scores and reduced the portfolio's ESG risks, or a manager may have a robust system that considers ESG factors but they have made bad decisions.

However, the outputs of the risk analytics software are a good way to get the conversation with the manager going and can generate questions that will help identify whether a manager is successfully integrating ESG factors into their investment analysis, for example:

- According to our tool, the portfolio seems to have a high exposure to this ESG issue. Are you aware of that and how did you consider this ESG issue when analysing securities?
- We have identified a couple of securities in the portfolio that are rated badly on ESG criteria. Are you aware of that and how did you look at ESG risks?



HOW DO YOU IDENTIFY WHICH OF YOUR PORTFOLIO MANAGERS ARE FULLY INTEGRATING ESG FACTORS INTO THEIR INVESTMENT DECISIONS?

We talk directly with the managers to gauge how important ESG integration is to them and to focus the questions on their stock selection and portfolio construction decision-making.

For example, one of our managers initiated the conversation on ESG when running through their slide deck. They explained that they had a reasonable exposure to the manufacturing industry because they had invested in companies that produce components or products that provide solutions to energy transition and water use management, and should therefore have strong long-term investment performance. As we didn't have to tease it out of them and they are able to answer the ESG questions and also link ESG issues with their long-term strategy, this manager clearly demonstrated that they integrate ESG factors into their investment analysis.

On the other hand, at a meeting with another manager, we noticed that the manager has significant exposure to clothing manufacturers. We asked whether they analysed the supply chain risks associated with the investee companies and whether they thought that this is a risk to the companies and to their client. The manager had no idea about this issue and struggled to answer the questions.

INTERVIEW

[BACK](#)


MONITORING PROCESS

Company	Environment Agency Pension Fund
Interviewee	Faith Ward

PLEASE DESCRIBE YOUR MONITORING PROCESS.

We require all our managers to report quarterly or annually (largely depending on what suits their investment process) on how they have been integrating ESG factors. We will ask for different information for different types of asset classes.

In addition to formal annual reviews, we expect our managers to maintain regular dialogue, such as when we meet up at events.

WHAT INFORMATION DO YOU SOURCE DURING THE MONITORING PROCESS?

With every manager, we look at any changes to policies, processes and personnel, and predominantly investment performance – since inception and over one, three and five years. The longer time periods are considerably more important in assessing performance.

We expect each fund manager to regularly outline any ESG considerations or analysis that have arisen, and explain any controversial investments or any engagement and voting on ESG issues that it has conducted with investee companies. This includes asking for examples of specific companies and specific ESG issues.

We ask for in-house or external broker research on environmental issues that are currently financially material, and for an account of their engagement and voting undertaken on environmental issues.

Active equity and bond managers are required to provide data and reporting as part of their commitment to carry out annual environmental exercises including measuring a portfolio carbon footprint. This has helped us to reduce our carbon footprint by 50% since we started measuring it in 2008.

HOW DO YOU ASSESS THE ESG INTEGRATION PRACTICES OF YOUR PORTFOLIO MANAGERS?

We regularly evaluate our managers' performance against similar, but more detailed, criteria to those used to select them. The manager is assessed, in multiple areas, on a five-point scale from "excellent, exceeding expectations" to

"potential breach of IMA" (as many of our ESG requirements are part of our investment management agreements).

Although the areas are the same for each manager, the ratings are relative to their mandate. The areas assessed are:

- policy
- philosophy
- people/resources
- voting
- engagement
- ESG integration
- transparency
- reporting
- thought leadership
- advocacy
- research (RI/ESG)
- added value.

Each manager's performance is reported to the investment sub-committee three times a year, although the factors contributing to the assessment are over the longer term.

We also ask for and review managers' PRI Assessment Reports and scores. These are also reported to our investment committee annually, alongside our own PRI Assessment report.

HOW DO YOU IDENTIFY WHICH OF YOUR PORTFOLIO MANAGERS ARE FULLY INTEGRATING ESG FACTORS INTO THEIR INVESTMENT DECISIONS?

It is really a matter of instinct. You can tell when a portfolio manager is really integrating ESG factors by their passion when they talk about responsible investment, ESG issues and their portfolios' carbon footprint. Another good sign is when there is evidence of internal ESG-integrated research reports and strong collaboration and advocacy within the responsible investment industry.

IMPACT ON INVESTMENT PROCESS

Fully integrating ESG factors into a new or existing investment process takes time and often requires trial and error. Many variables are involved and approaches differ between organisation and even between teams.

This chapter aim to assist investment managers with how to integrate ESG factors into investment processes and integration practices, and illustrates to asset owners some good practice examples of processes and models that investment managers use.

The first step, applicable to all investors, is to get senior management buy-in regarding the benefits of integrating ESG factors into investment processes. If senior management does not believe that integrating ESG can add value, it is unlikely that sufficient budget for resources and personnel will be allocated for it to have an impact on investment decisions.

STRUCTURING TEAMS

There are two common options for incorporating ESG integration into the organisational structure:

Integrated investment teams: Portfolio managers and investment analysts conduct the ESG analysis and integrate it into overall investment analysis and decisions. Portfolio managers must allocate a sufficient amount of

Pros:	Cons:
<ul style="list-style-type: none">■ ESG factors are included within the portfolio manager's research, alongside other material investment risks and opportunities.■ ESG issues are included in discussions, alongside other material investment risks and opportunities.■ Engagement activities on ESG issues will include portfolio managers.	<ul style="list-style-type: none">■ Portfolio managers may not have time to conduct comprehensive ESG research.■ Portfolio managers may not be sufficiently familiar with ESG issues and trends to identify material ones.■ Portfolio managers may not have time to engage with companies on ESG factors.

time to researching ESG issues and the latest ESG themes, and they may choose to receive training to deepen their understanding.

Dedicated ESG team and investment teams: An ESG team conducts the ESG analysis, which the investment teams integrate into overall investment analysis and decisions.

Pros:	Cons:
<ul style="list-style-type: none">■ Investment manager will have employees who advocate ESG integration.■ Comprehensive ESG research conducted on all investments in the investible universe and portfolio.■ ESG team can liaise with equity analysts for a more holistic approach to ESG analysis.■ Engagement activities on ESG issues will be performed.	<ul style="list-style-type: none">■ ESG team may not have buy-in from the portfolio managers.■ Portfolio managers may not read the ESG analysis performed by the ESG team.■ The ESG research may not be in a form that the portfolio manager can integrate into valuation models.■ Portfolio managers may not be aware of the engagement activities being carried out by the ESG team.

The environment must be conducive to openly sharing and debating ESG and investment research and information

CASE STUDY

Combining analysis from dedicated ESG and fundamental teams – bcIMC



amongst the teams, especially on ESG materiality and ESG impacts on investment valuation and decisions. There should be consistent, timely and proactive communication between the teams, which can be helped by regular meetings between teams (see [Combining analysis from dedicated ESG and fundamental teams – bcIMC](#)) and close proximity.

A third structure is emerging, featuring a dedicated ESG team, investment teams and integration specialists who sit alongside the portfolio managers. These integration specialists can be either ESG specialists, investment analysts or portfolio managers specifically assigned to integrating ESG factors into analysis.

SHARING DATA

However the teams are structured, combining resources provides a holistic picture of all the material factors that can impact a portfolio. It can also improve dialogue between the ESG team and investment teams, increasing the ESG team's understanding of stock selection, portfolio construction and other financial drivers, and ensuring that the investment team analyses the ESG research that's been carried out.

CASE STUDY

Reporting ESG information on summary sheets – AMP Capital Investors



One way to combine resources is to use dedicated ESG research sheets (or include a section on ESG research and scores on traditional research notes/stock sheets). These can be discussed in meetings and can feed quantitative ESG information into internal systems where analysts can examine ESG data and other financial data side-by-side (see [Reporting ESG information on summary sheets – AMP Capital Investors](#)).

CASE STUDY

Integrating ESG analysis into a centralised database – Sycomore Asset Management



An alternative method is to create centralised databases and dashboards (see [Integrating ESG analysis into a centralised database – Sycomore Asset Management](#)), where both teams can access traditional financial data, ESG data and valuations.

REVIEWING RESEARCH

As with any research, company and sector ESG research is driven by market events and should be regularly reviewed to identify new and unknown ESG risks and opportunities in the portfolio and the investment universe.

As there can be a large amount of ESG research that needs to be reviewed, this can be time- and resource-intensive, especially for an ESG team covering multiple investment desks and portfolios/funds.

CASE STUDY

Reviewing existing holdings – Boston Trust & Investment Management Company



One way to review existing ESG research is through regular sector meetings where investment professionals and ESG specialists discuss news, modifications to companies' business models and changes to ESG research, ESG ratings and investment valuations.

Another method is to review product and service changes, new controversies and/or changes to ESG ratings by external ESG research providers (see [Reviewing existing holdings – Boston Trust & Investment Management Company](#)).

CASE STUDY

Identifying material factors – APG Asset Management



Periodically reviewing which ESG issues are most material for each sector is necessary to ensure all research that evaluates companies' exposure to those issues remains relevant (see [Identifying material factors – APG Asset Management](#)).

In addition, there should be a review of the impact of ESG factors on valuations (see [Reviewing the impact on the portfolio – Robeco](#)).

CASE STUDY

Reviewing the impact on the portfolio – Robeco



Structural reviews of the research process and organisational architecture should also be regularly undertaken to ensure that ESG integration practices best respond to underlying market movements and client demand.

MONITORING RISK

The portfolio manager will need to regularly review the portfolio (including monitoring the ESG profiles of individual holdings) to remain aware of its ESG risk levels (in absolute terms and relative to the chosen benchmark), and to adjust accordingly to avoid or offset holdings with large ESG risks.

Portfolio monitoring can encourage internal discussion on holdings and the wider investment universe.

CASE STUDY

Visualising data for analysts, managers and clients – Columbia Management Investment Advisers



CASE STUDY

Using proprietary tools to inform engagement – Hermes Investment Management



ANALYSING PERFORMANCE

Some portfolio managers are examining the impact of ESG factors on portfolio returns, as part of the common performance review process.

Portfolio managers will either carry out a performance analysis on their own portfolio or a dedicated performance team will be measuring, evaluating and attributing investment performance of all portfolios managed by their investment firm.

CASE STUDY

Identifying ESG factors' contribution to performance – Auriel Capital



[Identifying ESG factors' contribution to performance – Auriel Capital](#) demonstrates a performance contribution analysis method used to measure the impact of ESG factors on a portfolio's total return.

[Attributing performance to ESG factors – Quotient Investors](#) uses multi-factor performance attribution analysis to extract the excess returns of the portfolio over its benchmark by size (the excess returns of small-cap over large-cap), value (the excess returns of value stocks over growth stocks), environmental factors, social factors and governance factors.

CASE STUDY

Attributing performance to ESG factors – Quotient Investors



INTEGRATING ACTIVE OWNERSHIP PRACTICES

Integrating active ownership practices into investment decisions is one of the most difficult features of a fully integrated investment process to get right. When voting and engagement is carried out, this is often initiated by the ESG team and service providers and can be detached from the investment process, leaving the portfolio manager unaware of engagement activities/outcomes and voting choices. Also, ESG considerations should be included, but rarely are, in the existing communications used to evaluate investee companies, such as roadshows and analyst meetings. This can result in there being little-to-no impact on stock selection and portfolio construction.

For an organisation using a dedicated ESG team, some of the tools and processes mentioned above will help, such as regular cross-team meetings and the inclusion of active ownership data in shared resources.

Portfolio reviews and risk monitoring tools can be used to identify portfolio holdings with high ESG risks, which are then selected for engagement and/or for voting decisions.

CASE STUDY

Engagements affecting portfolio construction – VietNam Holding Ltd



Best practice ESG-integrated investment processes will have a mechanism to rebalance portfolio holdings to reflect investee companies' level of interaction/response to, and/or the outcome of, engagement (see [Engagements affecting portfolio construction – VietNam Holding Ltd](#)).

CASE STUDY

Engaging companies on sustainability strategy – Ownership Capital



Another best practice feature is a procedure where active ownership practices are linked not just to current holdings but also to potential future investments (see [Engaging companies on sustainability strategy – Ownership Capital](#)). This can have a big impact on companies' behaviour, mitigating reputational risk and improving the ESG profile of the portfolio.

In all cases, engagement and voting activities should have long-term objectives, and portfolio managers and ESG specialists should work with company boards and senior management teams to continually encourage them to improve their firms' performance.

CASE STUDY

[BACK](#)

COMBINING ANALYSIS FROM DEDICATED ESG AND FUNDAMENTAL TEAMS

Company	bclMC
Author	Amy Chang, Randy Evans

We used the analytical expertise of both fundamental research and ESG specialists during the due diligence of a utility company's initial public offering (IPO).

Specific ESG issues that were uncovered as a result, included:

Negative	Positive
<ul style="list-style-type: none"> significant influence on board composition by the largest shareholder lack of detailed disclosure surrounding performance measurement metrics in management compensation plans a complex transition from a crown corporation to a publicly traded entity, which could impact efforts to improve customer service lack of sector-specific expertise among some executives and the Board of Directors 	<ul style="list-style-type: none"> an employee shareholder plan that aligned interests and mitigated labour-relations risk

ESG INTEGRATION THROUGHOUT THE INVESTMENT PROCESS

Challenges associated with evaluating IPOs can include:

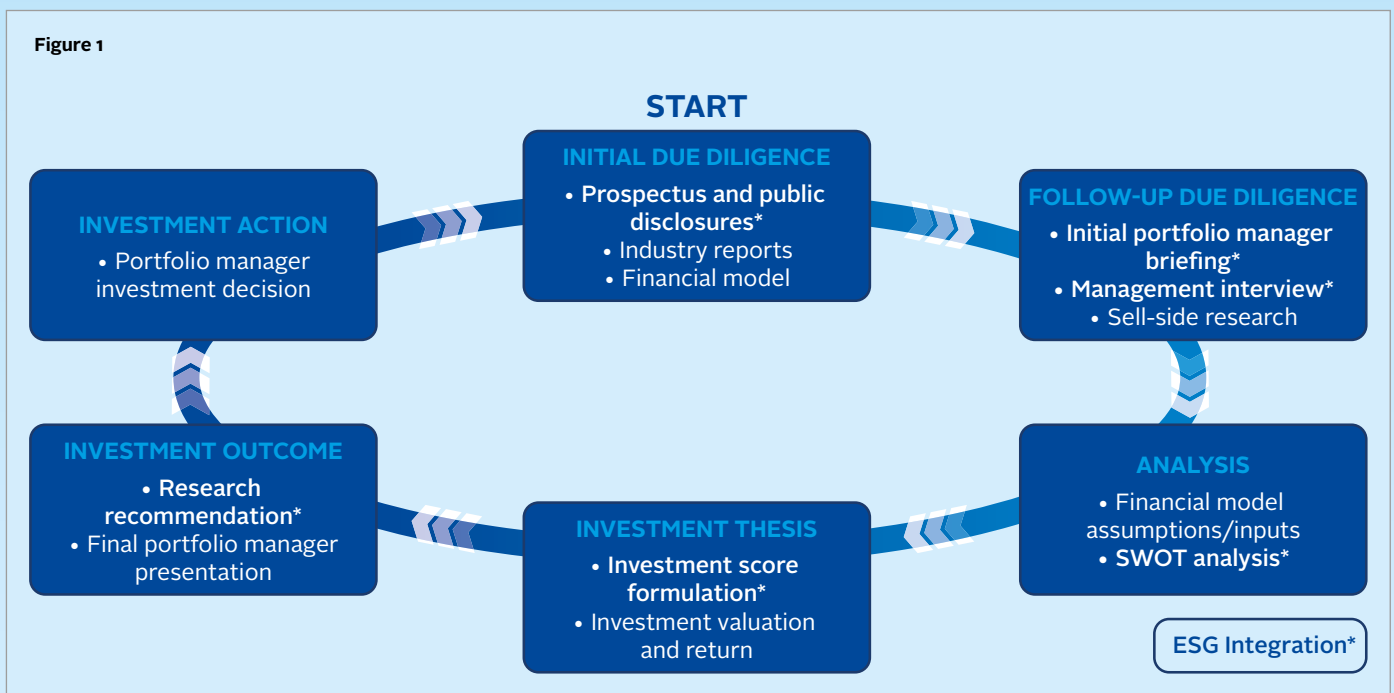
- over-reliance on prospectus document disclosures;
- lack of publicly available information;
- short track records (often with new management and Board of Directors);
- absence of third-party research;
- tight timelines to make an investment decision.

In evaluating the utility company, there were several steps where ESG analysis directly added value. These steps are highlighted and indicated with asterisks in figure 1, and described below.

Prospectus and public disclosures

Both the fundamental and ESG teams reviewed the prospectus and other public disclosures and reported key initial findings. The teams operated independently to uncover issues from different perspectives.

Figure 1



Initial portfolio manager briefing

The two teams' reports were combined into a presentation for the Portfolio Management team, which identified the key outstanding issues listed above as requiring further investigation. Using a presentation format enabled a frank and wide-ranging discussion of the pros and cons of the investment opportunity.

Company management interview

The reviews generated questions for the utility company's management, including ESG-focused questions, which the fundamental research team was responsible for raising during the due diligence process. Investigating these questions provided the opportunity to learn how the company's management was addressing key issues raised by the Portfolio Management team, and sent a clear signal that ESG considerations were a high priority for bclMC.

Topics included:

- how the company intended to address operational efficiencies (based on past experience);
- the potential influence that the largest shareholder would have on the Board of Directors nomination process;
- further information on how executive performance would affect pay.

SWOT analysis

A SWOT analysis was based on discussion and analysis of the information gathered during due diligence (see figure 2).

Investment score and research recommendation

We established an overall investment score using the analysis, including the SWOT framework and other fundamental research. The overall score included a weighted, risk-adjusted ESG score, which had collaborative input from the fundamental research and ESG teams. The ESG score was derived from a proprietary weighting of a number of environmental, social and governance factors that are specific to the sector. Along with proprietary weighting of four other fundamental categories, the overall investment score formed a key component of the fundamental research team's investment recommendation.

Figure 2: SWOT analysis of the utility company

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Significant scale ■ Cash flow stability ■ Low cost of capital 	<ul style="list-style-type: none"> ■ Lack of detailed disclosure of management compensation ■ Lack of sector-specific expertise amongst executive and Board of Directors
Opportunities	Threats
<ul style="list-style-type: none"> ■ High barriers to entry (monopolistic) ■ Constructive regulatory environment ■ Efforts to improve operational efficiency and customer service ■ Consolidation 	<ul style="list-style-type: none"> ■ Complex transition from a crown corporation to a publicly traded company ■ Competitive pressure for growth opportunities

CASE STUDY

BACK

REPORTING ESG INFORMATION ON SUMMARY SHEETS

Company	AMP Capital Investors
Author	Ian Woods

Our ESG company research is used by both fixed interest and listed equity teams for a variety of funds, with different investment styles (e.g. quantitative, fundamental, long only, long/short funds) and objectives (e.g. income, ethical, core mandates). It is done as part of a sector review that identifies both a company's exposure to sector sustainability drivers and the company's intangible assets.

This analysis provides both quantitative and qualitative information, which along with recent proxy voting analysis is summarised on company ESG summary sheets. These ESG summary sheets are available to all investment analysts and portfolio managers.

Figure 1: ESG summary sheet. Source: AMP Capital Investors

AMP Capital Investors ESG Research				20-Feb-16											
ESG Profile		XYZ	XYZ Limited		ESG sector: Diversified financial		Analyst: #N/A								
ESG and sustainability assessment summary						Last Review: 22-Dec-15									
ESG Scoring Summary			XYZ	Sector Avg	Sustainable Fund Summary			XYZ	Sector Avg	Exclusions		Y/N	Details		
(CG) Corp. Governance:			5.0	4.0	Sustainability Score:			3.0	2.9	Gambling			N		
(E) Environment:			4.0	4.0	ESG score (CG, E, W & C)			4.5	4.2	Alcohol			N		
(W) Workplace:			4.0	3.6	ES Score (ESG & Sustainability):			5.0	4.4	Tobacco			N		
(C) Community:			4.0	3.7	Rating (Sustainable Fund):			Not Investment Grade		Nuclear			N		
										Armaments			N		
										Pornography			N		
ESG Score (CG,E,W,C)			4.5	4.2						Other			0		
Corporate governance summary						Last Review: 22-Dec-15									
Structural assessment															
Board				Audit committee:				Remuneration committee				Related party transactions in last 3 years			
Composition: Majority Independent -				Composition: Fully independent -				Composition: Fully independent -				Related party transactions: No			
Chair person: Independent -				Chair person: Independent -				Large vote ag. last rem. report? Y !!				Involving chair/executive/msh No -			
Voting summary															
Year	Type	Vote	Letter	Comments											
2015	AGM	For all. Except Mr Spock	Met	Support D/E except self-nominated Mr Spock. Support RemR and LTI. Note: Excessive sign-on for new CFO.											
2014	AGM	Support all	-	Support D/E and RemR. Significant engagement re Rem. Pay weighted towards equity but high and material in context of profit. Thorough disclosure of complex structure (& divs on unvested)											
2014	EGM	Support all	-	Support CEO's remuneration and retirement arrangements. Co consulted with shareholders extensively. Even removed automatic vesting on change of control.											
2013	AGM	Support all	-	Support D/E, RemR and Termination payments. Co engaged extensively throughout the year. Rem much improved. Termination now removes auto vesting.											
2012	AGM	Against 5&8	done	Support D/E. Name change, buy-back. Against RemR & LTI (very dilutive, hurdle is to meet 'either' TSR or EPS, changes have lowered ex-price and increased qty, etc)											
2011	AGM	Abstain RemR	prev	Support D/E, Abstain RemR - marginally better since we voted 'against' last year. However still dilutive - hurdle not ideal. Loans.											
2009	AGM	Against 6&7, for rest	done	Support D/E. Against RemR & LTI. Various concerns incl. Generous options no rel perf hurdle; vest if either abs EPS or abs TSR growth hurdle is met.											
ESG drivers (sector level)															
Sustainability drivers (Diversified financial)						Intangible drivers (Diversified financial)									
1) Climate change and natural catastrophes (sustainability-related products) 2) Demographic and lifestyle changes (ageing population, baby boomers) 3) Regulatory change (Johnson report, Cooper review, Henry tax review, FOFA) 4) Technology change and increased complexity (product complexity)						1) Corporate governance structure 2) Risk management and disclosure 3) Quality of workplace (ability to attract and retain human capital) 4) Quality of human capital and processes (ability to perform) 5) Commitment to sustainability and the environment 6) Commitment to the community									
ESG SWOT analysis (company level)						Review: 22-Dec-15									
Strengths (S) / Opportunities (O)						Weaknesses (W) / Threats (T)									
(O) XYZ is well placed to benefit from sustainability drivers as increased longevity means a demand for both income and yield. Investment products for retirees is a growth opportunity. (S) XYZ has a majority independent board with fully independent committees and its board comprises a broad mix of relevant skills / experience. (S) XYZ displays good workplace management focus. While disclosure on actual results could improve, XYZ runs semi-annual engagement surveys (and are acting on the results), has adopted gender diversity objectives, has OH&S reporting to the board and has focus on flexible working arrangements. (S) XYZ has community giving program and has a 'community' committee to build community relationships. (S) XYZ seeks to maximise NABERS energy accreditation to its tenancies and has various internal initiatives on energy efficiency, recycling, etc.						Main ESG-related weaknesses and threats: • (W) Use of options for directors – each NED bought 200,000 options for 24c with strike price of \$2.65 at listing (115% premium to issue price) and life of 5 years. At \$3.30, these options deliver a profit of \$82,000 at 7/12/15. • (W) There seems to be no discussion / disclosure of ESG risk management framework or ESG in general. The only policies relate to governance issues such as gender diversity and remuneration. • (W) The company is considering diversification – we do not know whether this will include consumer finance generally. • (T) Potential for higher cost of funding as APRA changes securitisation rules in 2016. XYZ securitises its loans and leases. • (T) Legislative change. In 2013, the Federal Government proposed changing the way FBT are calculated, which would have required log books to substantiate business use claims. The Federal Coalition did not proceed with this proposed change but it remains a risk.									

The sheet is split into three sections:

1. QUANTITATIVE ASSESSMENT

This summarises a quantitative assessment of the company in four key ESG areas: corporate governance, environment, workplace and community. An overall ESG score is generated based on sector-specific weights of the scores for each of the four areas.

As well as the ESG score, this section contains a sustainability score, which rates the core sustainability issues facing the industry. An overall ES score is calculated based on both the ESG and sustainability scores.

The analysis:

- provides input into the stock ranking system (discussed further below);
- identifies key ESG areas of concern;

- identifies whether the company is investment grade from an ESG perspective for various of our funds;
- identifies whether the company has exposure to any particular areas we exclude or are concerned about, such as fossil fuels.

2. CORPORATE GOVERNANCE

This looks in more detail at the concerns driving the corporate governance score and describes how we have voted over recent years, including whether and how we have engaged the company on areas of concern.

3. QUALITATIVE ASSESSMENT OF THE COMPANY

This describes a qualitative assessment of the company through an ESG SWOT analysis. It forms part of the qualitative overlay that investment analysts use in their company valuations and provides a focus for ESG discussions with the company.

Figure 2: Screenshot of the stock ranking system

Ticker	Sustainable	Conviction -3 to +3	Target price	Total shareholder return	Momentum -3 to +3	Company rating on environment, social and governance 1 to 6	Rating on ESG and sustainability factors	Total Score	Rank
COH	1.5	2	106.83	30%	0.99	4.0	2.5	1.97	1
RHC	1.5	1	75.43	30%	0.52	3.5	2.0	1.54	2
SUL		2	11.00	29%	-0.37	3.0	3.0	1.39	3
WBC	-0.54	1	26.35	-13%	0.15	4.0	4.0	0.75	48
MRM		0	2.24	75%	-0.10	3.5	4.0	0.75	49
VRT		0	6.13	22%	0.17	4.5	3.0	0.74	50
PRG		0		26%	0.06	4.0	4.5	0.46	94
PME		0		0%	0.28	5.0	4.0	0.45	95
MQG	1.18	0	61.59	-17%	0.85	5.0	4.5	0.45	96
TCL	0.91	0	8.87	-8%	-0.05	4.0	4.5	0.18	140
FLT		0	33.00	-5%	-0.81	3.5	3.5	0.18	141
FBU		0	4.54	-23%	0.07	4.0	4.5	0.18	142
FMG		0	2.14	38%	2.10	4.0	5.5	-0.89	186
CDD		0	2.10	-25%	0.01	5.5	5.0	-0.95	187
CCL		0	9.00	4%	-0.59	4.0	5.0	-1.00	188

As identified above, for each of the fundamental equity funds, the quantitative scores are integrated into the stock ranking system along with other traditional financial/analyst metrics such as momentum, analyst conviction and company target price (figure 2).

Equally important to the ESG summary sheets is the interaction between the ESG team and the investment analysts to discuss them, including:

- combined morning meetings, including ESG team in weekly portfolio meetings and shared company meetings;
- weekly ESG-specific meetings;
- ESG sector report presentations;
- shared commentary on company results or announcements.

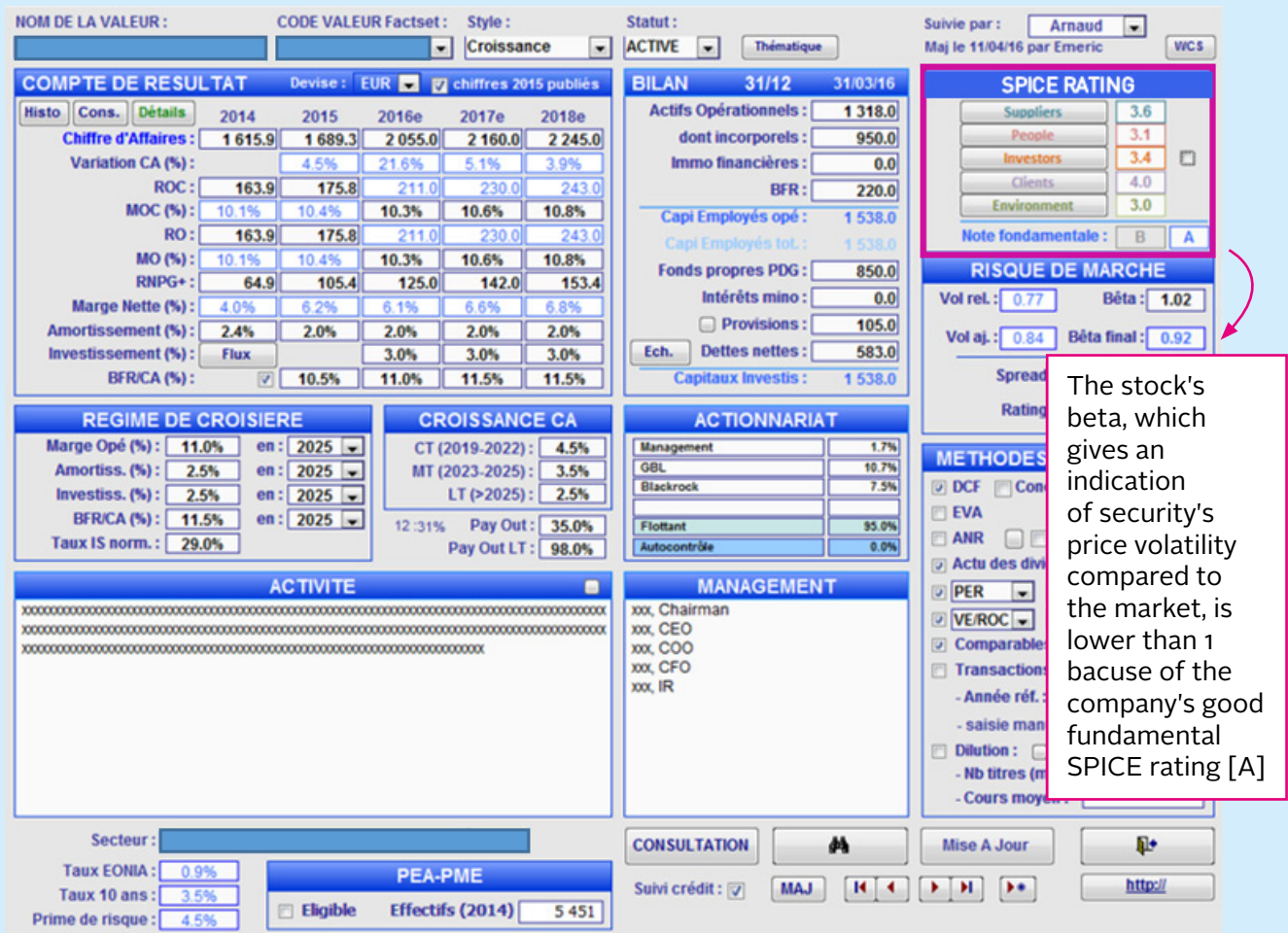
CASE STUDY

[BACK](#)

INTEGRATING ESG ANALYSIS INTO A CENTRALISED DATABASE

Company	Sycomore Asset Management
Author	Bertille Knuckey

Figure 1: A screenshot from SYCOVALO showing the company's SPICE rating. Source: Sycomore AM



SYCOVALO is our proprietary centralised database and valuation tool. Used by our 15 investment professionals to make investment decisions, it enables us to easily:

- access companies' key financial and ESG data;
- screen investment universes;
- define target prices using multiple valuation methods;
- log company- or sector-specific news and controversies.

SYCOVALO also provides a robust valuation framework, where entry and exit prices are systematically determined to ensure disciplined portfolio construction.

In 2015, the team logged close to 1,700 contacts with companies in the database, including 150 on-site visits, covering both financial and ESG topics.

By combining financial and ESG information, it ensures that our analysts and managers review ESG factors whenever they assess a company.

CASE STUDY

BACK



REVIEWING EXISTING HOLDINGS

Company	Boston Trust & Investment Management Company
Author	Aaron Ziulkowski

An investment manager's process to monitor companies once in client portfolios is equally as important as the initial buy decision. Companies bring to market new products and services, operational and management practices change over time and new information (particularly ESG data) can become available – all of which can alter the ESG profile of a company.

Our ESG review discipline includes three types of systematic review (product, controversy and sectoral), along with ad hoc reviews triggered by emerging events.

All companies are reviewed quarterly for product and service changes and monthly for controversies using tools from third-party research providers.

Biennially, we also strive to review holdings by GICS sector, comparing all companies in client portfolios to sector leaders from outside the portfolio to provide a more comprehensive understanding of the spectrum of performance on key ESG issues.

Breaking news can prompt an immediate review. While the news could relate to ESG opportunities, they tend to relate to potential ESG risks.

Hundreds of companies have been reviewed through this process. In 2007, we analysed Nestlé and determined that the ESG risks were too great to invest. Numerous operational, environmental and social challenges were identified, ranging from the sustainability of groundwater withdrawals around Nestlé bottling facilities; the recyclability of its packaging and container recovery; a spotty record on product nutrition, safety and quality; and its much-criticised infant formula marketing practices in developing countries. Among the most troubling were concerns relating to international labour practices and alleged involvement in perpetuating what the ILO defines as “the worst forms of” child labour through purchases of cocoa beans.

Over the course of the following two years we monitored Nestlé, gaining a deeper understanding of the company's practices and its progress in addressing the issues we had identified of concern. We examined company publications, analyses conducted by independent research organisations, and information from traditional resources and gleaned from internet and media searches. To assess the company's responsiveness to stakeholders, we interviewed investor groups and NGOs engaged with Nestlé, as well as its outspoken critics in the US and Europe.

While still facing challenges, based on this research, we determined that Nestlé was taking important steps to address and eliminate child labour in its supply chain, and had much improved its marketing practices of infant formula. We observed gradual improvement in the nutritional quality of some of its products, such as reducing sodium, fat and sugar. The company had also introduced measures to reduce the environmental impact of its packaging and had engaged positively on related public policy. Additionally, we observed a significant improvement in the company's ESG disclosure. Guided by a new CEO and in response to stakeholder pressure, Nestlé in 2008 published its first sustainability report, [Creating Shared Value](#).

After this comprehensive review we determined Nestlé to be an acceptable investment based on tangible progress in major ESG areas and plans to engage with the company.

CASE STUDY

[BACK](#)

IDENTIFYING MATERIAL FACTORS

Company	APG Asset Management
Author	Terhi Halme

Our Industry Frameworks summarise material sustainability issues for each industry, to:

- support company analysis;
- inform investment decisions;
- guide company engagement;
- facilitate portfolio monitoring.

The Industry Frameworks were developed jointly by sustainability and governance specialists and portfolio managers to interpret the UN Global Compact's Ten Principles in the context of specific industries. These followed four internally developed issue papers that were written in 2014, one for each of the UN Global Compact themes (human rights, labour, environment and anti-corruption).

One of the outputs of the Industry Frameworks is an issue map for each of the 38 industries (figure 1), which at a glance highlights the risk exposures within each UNGC theme.

From an initial set of 18 sustainability issues, we identified, for each industry, which issues were the most material as a business risk and as a public concern. For example, we assessed one of the material issues for the banking industry to be data security: with the risk of cyber-crime becoming more frequent and sophisticated, it can lead to significant business and reputation risks if the company's systems are not up-to-date and don't include strong protection measures.

Companies are then analysed using the Industry Framework, with a special focus on the sustainability issues identified as most material.

Figure 1: An example issue map

Exposure:		High	Moderate	Monitor	BUSINESS RISK	PUBLIC CONCERN
ETHICAL BUSINESS CONDUCT & PRACTICES	Bribery & Corruption					
	Political Influence					
	Insufficient regulations / operations in high risk countries					
	Marketing & Communications					
	Competitive Behaviour					
	Product Quality & Safety					
ENVIRONMENT	Climate Change					
	Pollution					
	Waste					
	Biodiversity					
	Scarcity of (Natural) Resources					
HUMAN RIGHTS	Stakeholder Engagement					
	Sourcing from Conflict Areas and Security Forces					
	Privacy & Data Security					
	Access to Basic Needs					
LABOUR	Labour Relations					
	Operational Health & Safety					
	Human Capital Development					

REVIEWING THE IMPACT ON THE PORTFOLIO

Company	Robeco
Author	Willem Schramade

In January 2014, our Global Equity team started a review of ESG integration's impact on their investment process and portfolios, to understand whether ESG factors are material: whether they affect company valuations and investment decisions resulting in a change to portfolio holdings. It was also important to demonstrate to our clients that we are integrating ESG factors, not just claiming to.

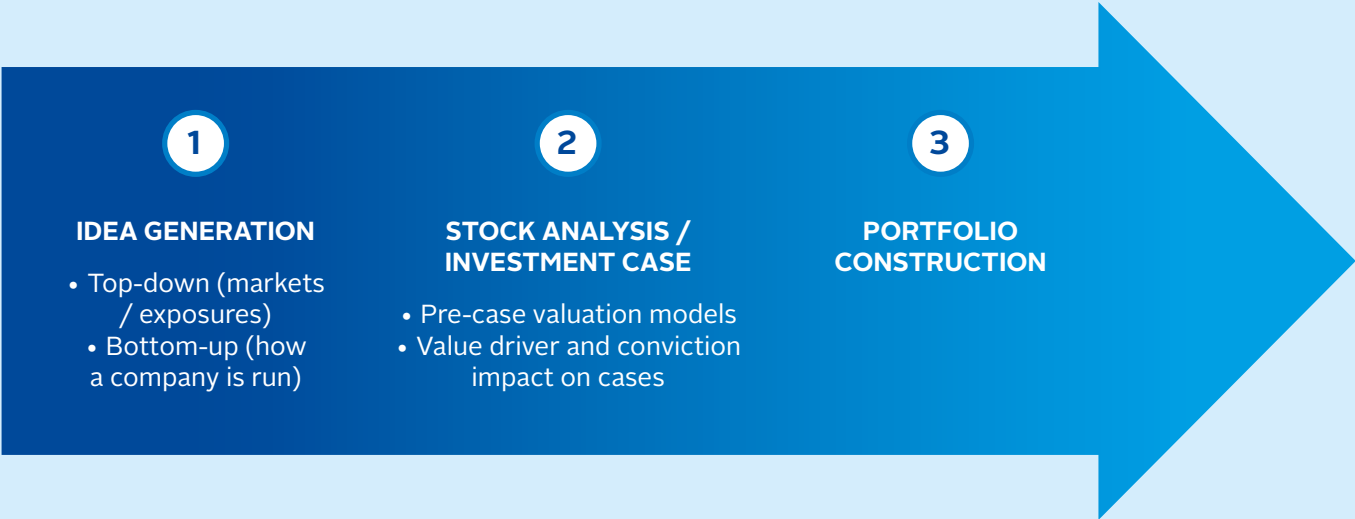
When valuing companies, we integrate ESG analysis right from the start, so to calculate the impact of ESG analysis on target prices we had to revisit our valuations and isolate the ESG element: we revalued a company without considering its ESG-related competitive advantages and disadvantages, and subtracted this from the target price reached when ESG analysis was integrated.

CATEGORIES OF INVESTMENT DECISIONS

ESG factors' impact on decision-making can happen at several stages of the investment process. Before we started recording investment decisions, we defined three categories (see figure 1).

At the idea generation stage, ESG considerations can impact the decision of where to look in the first place, and whether or not to explore the idea further. For example, top-down screening on the ESG exposure of different markets made us look into exposure to recycling in metals recycling (Umicore) and medical waste (Stericycle) and exposure to car emission reduction in the IT, industrials, materials and consumer discretionary sectors. Bottom-up ESG performance (how a company is run) can also trigger further

Figure 1: Three categories of investment decisions



interest in a company (if positive or at an inflection point) or, when negative, lead us to dismiss it as fundamentally unattractive.

In the stock analysis / investment case phase, analysts' decisions can have an impact without resulting in a change in the portfolio. For example:

- We had several cases of increased conviction on current holdings as they scored well on the most material issues in their segment.
- We found stocks that were not in the portfolio and initially screened well, but turned out to have sources of negative ESG value, resulting in an unattractive valuation and hence not being recommended.

Alternatively, ESG considerations can affect decisions on holdings, thus impacting the portfolio construction phase.

RESULTS

During 2014 and the first two months of 2015, our Global Equity team produced 127 investment cases. In 52% of cases, ESG factors had an impact of company valuations, with adjustments ranging from -23% to +71%.

The most popular metric to adjust was profit margins (46% of all cases), followed by sales growth (35%) and the cost of capital (13%). Capex and working capital have been adjusted in just a few cases so far.

Figure 2: Frequency of valuation adjustment

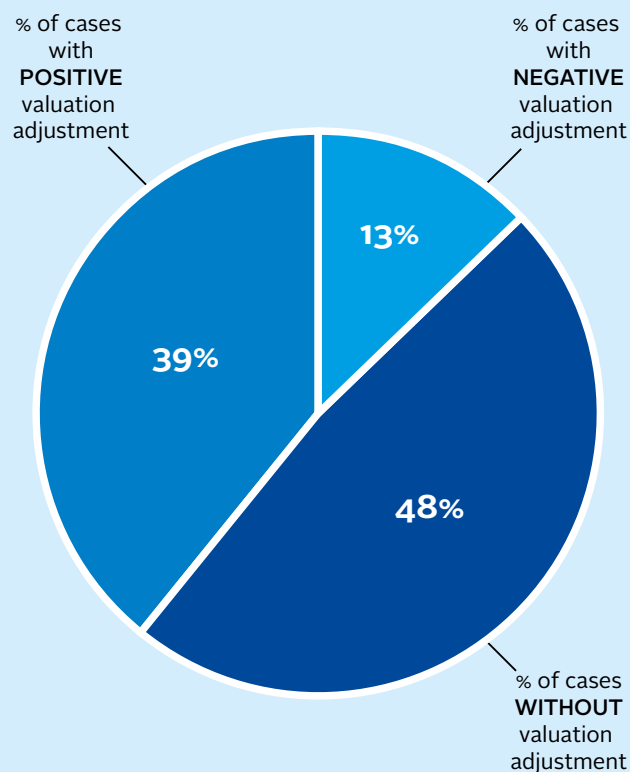
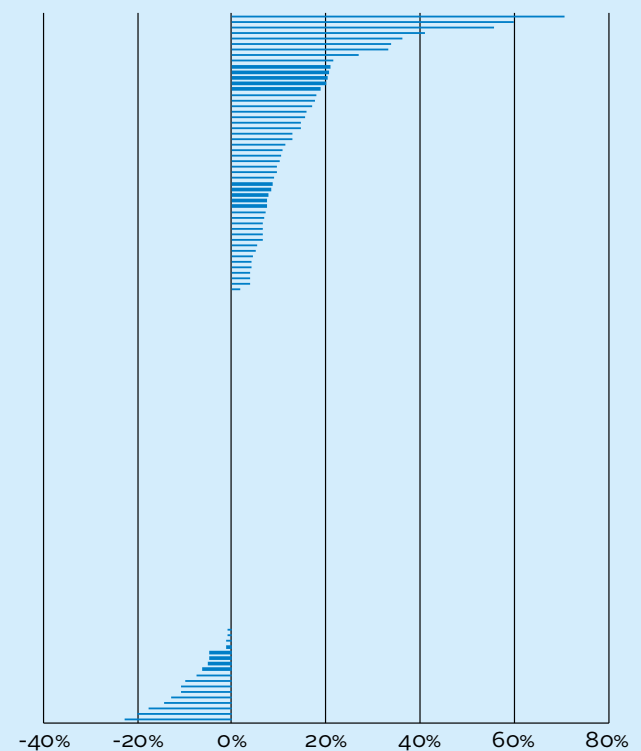


Figure 3: Valuation adjustments as a percentage of the Target price



Over the same period, the Robeco NV Fund had 178 portfolio changes (90 additions, 88 reductions). In 28% of those cases, ESG considerations played a part, and in 9% they were a major factor. A third of the 28% that were affected by ESG considerations related to top-down ESG issues (such as trend exposures or segment views) and 71% to bottom-up considerations (individual factors or management quality). ESG factors affected considerably more buy decisions (two thirds of decisions with an ESG angle) than sell decisions (one third).

Our investment cases have given us a better view of what's material per sector and how material such factors really are. By making ESG explicit in our valuation models, we are able to show ESG impact to our clients and more importantly, it helps to further boost awareness and discipline among our analysts and portfolio managers, even after five years of increasing ESG integration in our team.

VISUALISING DATA FOR ANALYSTS, MANAGERS AND CLIENTS

Company	Columbia Management Investment Advisers
Author	Malcolm A. Ryerse

Our global research team developed a tool that enables a third-party suite of ESG data to be systematically considered in our mainstream investment processes. We supplement that tool with internal research and external research from a variety of sources. Our goals were to encourage integration of ESG factors by developing high-quality portfolio-, sector-, issuer- and risk-level analytics from the ESG data suite for easy use by our analysts and portfolio managers, while simultaneously meeting clients' growing need for insight into their ESG exposures.

We built a system that maximises outputs (e.g. ESG factors for thousands of companies across dozens of portfolios) while minimising inputs (e.g. programming time, ESG data and benchmark/financial performance/time series data).

Our interactive data visualisation tool has multiple dashboards that allow users to analyse the ESG criteria underlying ESG risk factors. The tool feeds information from multiple databases into a graphical interface displaying data in infographics, heat maps, pop-up boxes and detailed charts. Users can then manipulate that data or drill into the portfolio-level or issuer-level ESG data.

Instead of relying on an issuer's overall ESG score or ratings to determine the suitability of a security, the multiple data sources feeding this tool help our users identify exposure to particular risks, which we prioritise in shades of red to green. With a single click on any color-coded risk, a user can unpack all the underlying data, definitions and data sources to analyse the nature and extent of the risk along with company management's efforts to mitigate that risk over a multi-year period.

Users can compare an issuer's range of ESG factors against those of its sector or industry peers, or see how many issuers from that sector with red-, yellow- or green-coded risks appear in a given portfolio. They can also analyse all the ESG ratings for a given portfolio in a color-coded heat map and compare the results against a portfolio's benchmark. Clicking on any issuer in the heat map reveals the underlying ESG factors (and their underlying criteria, sources and definitions) or sorts the portfolio by the sectors represented: in a heat map, in a 'bacteria chart' based on a combination of market weight and risk rating or in a table.

We can test, modify, augment and organise ESG data to allow our analysts and portfolio managers to adopt it into their own workflows as they wish. We can compare multiple portfolios side-by-side, or overall to understand aggregate ESG risk exposures across the firm.

Research teams and investment teams working with the tool encourages more meaningful ESG integration than relying on a standalone team of ESG specialists or on isolated, absolute data.

IN PRACTICE

The tool highlights that an exposure to data privacy and cybersecurity risk factors exists among the securities in a portfolio. The portfolio manager queries the issuers with exposure to those factors, sorting the list by sector, portfolio weight or benchmark weight, to see the issuers' scores and the extent of respective management's response to mitigate the risk.

Upon analysing the risk and response, the portfolio manager seeks greater understanding of the issues and meets with the fundamental analyst covering the issuer to review how the risk may affect the issuer, its clients and stakeholders, and ultimately how that may bear on the long-term valuation and sustainability of the firm. Internal and external issuer-specific ESG research and thematic research on cybersecurity is consulted to further inform engagement with the issuer on the topic as needed.

If the portfolio manager believes our clients would be best served to reduce the position in the security or sell, the ESG screening tool can also be used to identify potential replacements: it includes ESG risk data on thousands of issuers plus our internal fundamental and quantitative ratings, all of which can be screened by rating, sector or benchmark.



CASE STUDY

BACK



USING PROPRIETARY TOOLS TO INFORM INVESTMENT DECISIONS AND ENGAGEMENT

Company	Hermes Investment Management
Author	Will Pomroy, Louise Dudley

To maintain a consistent approach as we integrate ESG factors across all asset classes and investment strategies, each of our investment teams use two tools developed by our Global Equities team: our ESG Dashboard and our ESG Portfolio Monitor. Our Responsibility team works with each investment team to share best practice and to identify ESG risks that necessitate engagement by our engagement team, Hermes EOS.

Each investment team can be aware of ESG issues by using the ESG Dashboard to access proprietary and third-party ESG research on each stock in their investible universe. Companies can (subject to available data) be compared against their peers by sector, by region or globally. Information provided includes a proprietary score we assign each stock capturing how well the company manages its ESG risks, and whether this is improving or not.

This stock-specific analysis contributes to both our initial investment decisions and our ongoing monitoring of, and (where appropriate) engagement with, companies.

Alongside the Dashboard's stock-specific information the ESG Portfolio Monitor provides a portfolio-level view.

This tool lets us observe the aggregate ESG risk across our portfolios in both absolute and benchmark-relative terms. Investment teams are able to break these measures down into the constituent environmental, social or governance risks and view the ESG metrics for each portfolio company, along with the best and worst performers in aggregate and for each aspect. Analysts are also able to see whether the company is currently being engaged with by our stewardship team, the progress made in the engagement and whether we have voted against management at general meetings.

The Marketing and Sales teams also use the information provided when communicating with existing and prospective clients.

USING THE DATA

OVERSEEING RISK

Our Investment Office, which provides independent oversight of our investment teams in the interests of clients, actively monitors fund risk, helping to deliver sustainable, risk-adjusted alpha while acting as an early warning system to identify potential problem areas. They use the Portfolio Monitor report to promote discussion about thematic ESG risks within and across teams.

OBTAINING A FULLER PICTURE

Our Responsibility team coordinates the development of our policies, and their subsequent integration, across our funds and stewardship services. Quarterly meetings are held with investment teams to discuss their portfolios. In advance of the meetings, the Portfolio Monitor provides the starting point to analyse the ESG risks within the portfolio. During the meetings, teams identify which companies might be at risk and, recognising that data does not provide a full picture, mark them for further analysis. Companies are prioritised based on an attribution analysis of the ESG risks in the portfolio and a discussion regarding any changes to how effectively they are managing material concerns.

Formal meetings are held with each investment team at least every two months, along with ad hoc interactions, to discuss more detailed ESG analysis of stocks identified as 'at risk'. ESG specialists and portfolio managers will discuss the analysis and, if appropriate, agree engagement objectives. We systematically measure and monitor progress on engagements by setting clear objectives and measuring progress against four milestones:

1. raising the issue with the company;
2. the company recognising that the concern is valid;
3. a plan to address the issue;
4. successfully delivering the objective.

MITIGATING CARBON RISK

The portfolio-level view makes portfolio managers aware of the estimated carbon level and intensity of their portfolios, including which investments are the largest contributors. We systematically engage with the highest-emitting stocks with a view to reducing their emissions. The data also provides a starting point to assess the best options to manage carbon risk in the context of a fund's particular performance and risk objectives as agreed with the client.

ACTIVE OWNERSHIP INFORMS OUR ASSESSMENT OF RISK

Not only does effective engagement – accompanied by intelligent voting – help appraise the level of ESG risk: if successful, it will also mitigate the risk. In turn, our engagement and investment activities are able to focus on the risks that are most relevant and material.

Figure 1: Output of the ESG Portfolio Monitor

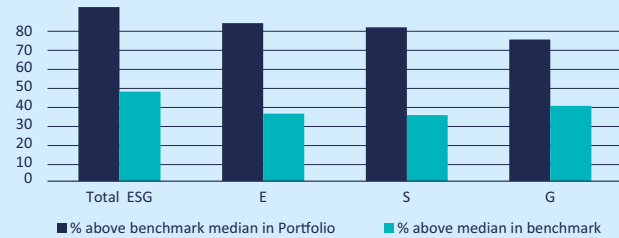
Hermes US All Cap Equity Fund (47 stocks) vs. Russell 3000 (3006 stocks) As at 30/06/2016

QESG	QE	QS	QG	Trucost GHG	Sus Controversy	EOS Controversy	EOS Engagement	EOS Voting in Favour
91% (47%)	83% (35%)	81% (35%)	74% (39%)	43.5% (51.9%)	3 (6.4%)	2 (4.3%)	14 (30%)	30 (64%)

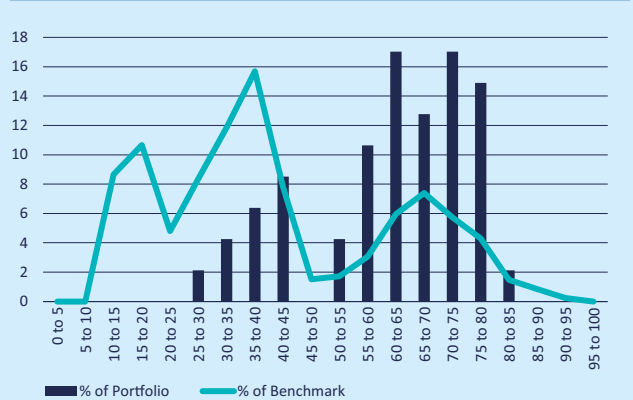
Total QESG scores % above median

	USAC	Benchmark	Median
QESG	91%	47%	37
QE	83%	35%	0
QS	81%	35%	14
QG	74%	39%	67

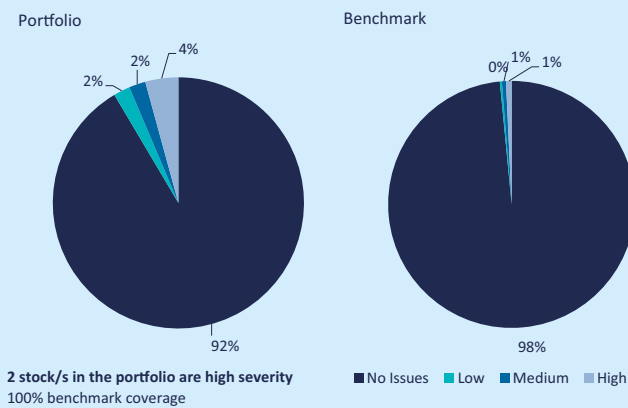
Hermes' proprietary QESG score is calculated in-house and utilises sources including Sustainalytics, Bloomberg, Trucost and information provided by Hermes EOS. The scores range from 0 to 100, 100 being the best.



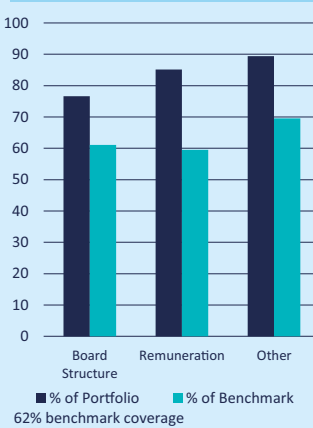
QESG Score



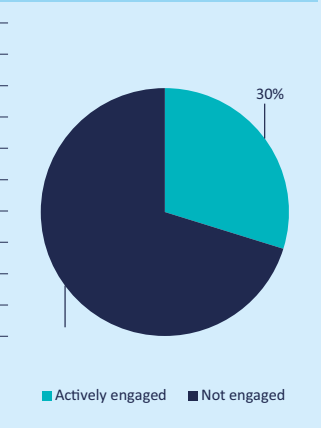
EOS Controversy Indicator



EOS Votes in favour of Management



EOS Engagement - % of Portfolio



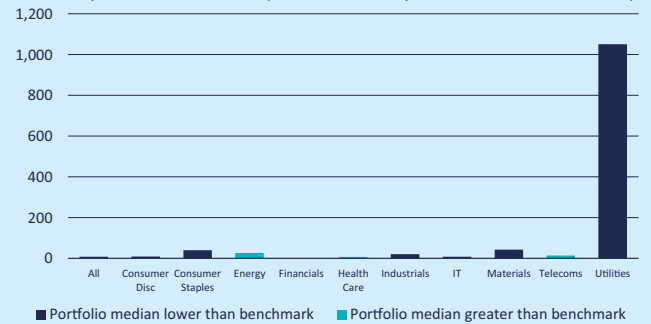
Trucost Greenhouse Gases

Trucost Greenhouse Gas emissions, Scope 1 (Direct) and Scope 2 (Indirect), tonnes CO2e per USDm revenue.

	Benchmark	Difference
All	43.5	51.9
Consumer Discretionary	34.1	43.6
Consumer Staples	79.7	119.9
Energy	283.8	257.6
Financials	13.6	13.3
Health Care	49.6	42.8
Industrials	89.5	109.7
IT	23.7	32.3
Materials	270.7	313.4
Telecoms	39.5	25.2
Utilities	121.5	1172.7

42% of stocks in the portfolio are above benchmark median (33% benchmark coverage)

Portfolio exposure versus benchmark (difference between portfolio and benchmark medians)



CASE STUDY

[BACK](#)

IDENTIFYING ESG FACTORS' CONTRIBUTION TO PERFORMANCE

Company	Auriel Capital
Author	Larry Abele

Our quantitative strategy is centred on long-term forecasts derived from ESG factors. These long-term views are complemented by shorter-term, tactical trading programmes designed to protect the long-term positions from adverse, short-term price movements. They do this by utilising behavioural insights at and around firms' earnings announcements, and the natural tendency of stock prices to revert to mean over time.

Our attribution analysis involves measuring and analysing the return contributions of the portfolio's four underlying trading books (ESG, Earnings forecasts, Pattern of analysts' revisions and Mean-reversion), which contain positions in line with our long-term ESG views and tactical trading

programmes. Similar to an in-house, multi-manager programme, trades from each trading book are submitted separately, allowing us to identify which effects are coming from which trading books. Trades are then netted and executed centrally to manage risk correlations across the trading books.

The analysis shows that ESG factors have added about 65bps per year to our fund's return (see figure 1) and about 32bps per year to fund volatility, since going live in August 2010. (Volatility was calculated by taking the difference between the ex-post volatility with and without the ESG trading book.)

Figure 1: Contribution analysis of the trading books. August 2010 – February 2016

	ESG	Earnings forecasts	Pattern of analysts' revisions	Mean-reversion	Totals
Australia	0.0%	-0.9%	0.6%	0.4%	0.1%
Canada	0.8%	-0.4%	0.8%	1.0%	2.2%
Europe	1.1%	1.7%	2.5%	1.5%	6.8%
Nordic	0.7%	2.0%	0.9%	0.6%	4.1%
Japan	0.9%	-0.5%	1.0%	0.5%	1.9%
United Kingdom	0.1%	3.3%	1.0%	0.6%	4.9%
Totals:	3.6%	5.1%	6.8%	4.6%	

We then examine the return contributions of the 27 proprietary indicators within our ESG trading book. We categorise the indicators as either environmental, social or governance indicators, and sum the return contributions for

each of the six regions to arrive at the table shown in figure 2 showing that governance factors play the biggest role, followed by environmental, with minimal though still positive impact from social factors.

Figure 2: Contribution analysis of ESG indicators

	Environmental	Social	Governance
Australia	0.2%	0.0%	-0.2%
Canada	-0.5%	0.3%	1.0%
Europe	0.6%	-0.1%	0.6%
Nordic	0.4%	-0.2%	0.4%
Japan	0.5%	-0.3%	0.6%
United Kingdom	0.1%	0.2%	-0.2%
Totals:	1.4%	0.03%	2.2%

CASE STUDY

[BACK](#)

ATTRIBUTING PERFORMANCE TO ESG FACTORS

Company	Quotient Investors
Author	Andre Bertolotti, Andreas G. F. Hoepner

Our attribution methodology allows an investor to determine the impact of ESG integration on their fund's returns, and to assess the importance of ESG factors on performance through a sensitivity analysis.

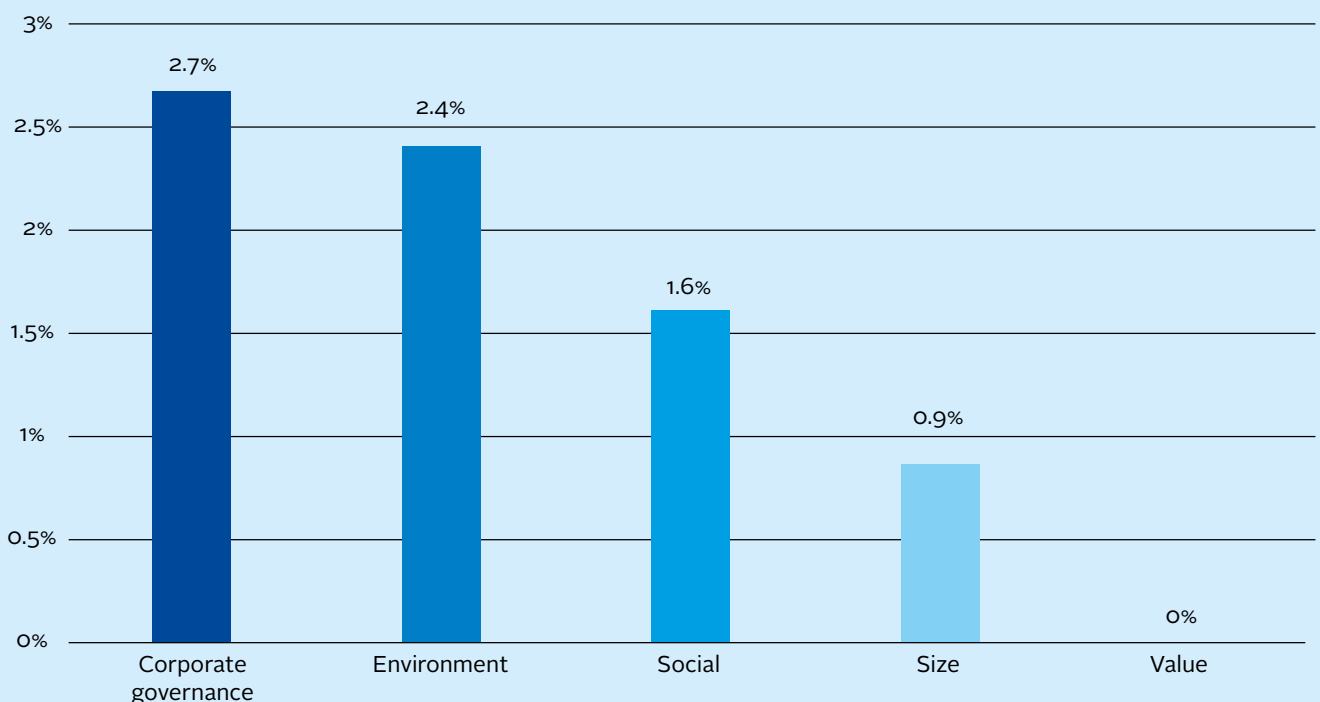
Our U.S. Large Cap Sustainable Alpha fund is based on the premise that ESG characteristics are systematically mispriced in the market and that excess returns can be earned by combining ESG with other fundamental data. To assess the impact of ESG factors on investment returns, we run a performance attribution analysis including the fund's monthly returns and the monthly returns of its benchmark Russell 1,000 from January 2010 to June 2015. In addition, we retrieve the US risk-free rate and the Russell 1,000's size factor and value factor from the Kenneth French database. These data sets allow us to do performance attribution using the Fama-French model, which can explain a portfolio's return by: the market's excess return, the size factor (the excess returns of small-cap over large-cap) and

the value factor (the excess returns of value stocks over growth stocks).

To make it an ESG attribution analysis, we also retrieve ESG ratings of Russell 1,000 firms during the sample period. In line with the 30% cut-off that Fama and French use to build their size and value factors, we build default factors of the returns delivered by the (i) top 30% environmentally rated, (ii) top 30% socially rated and (iii) top 30% corporate governance rated firms. Finally, we ensure that all our factors are uncorrelated to the market benchmark, which is by far the largest driver of a long only equity fund.

In the case of our Sustainable Alpha fund, market benchmark swings are responsible for 92.0% of the return variation, as would be expected from an active strategy benchmarked to a market index. Figure 1 shows the breakdown of the remaining 8%.

Figure 1: Attribution analysis of Quotient Investors' track record

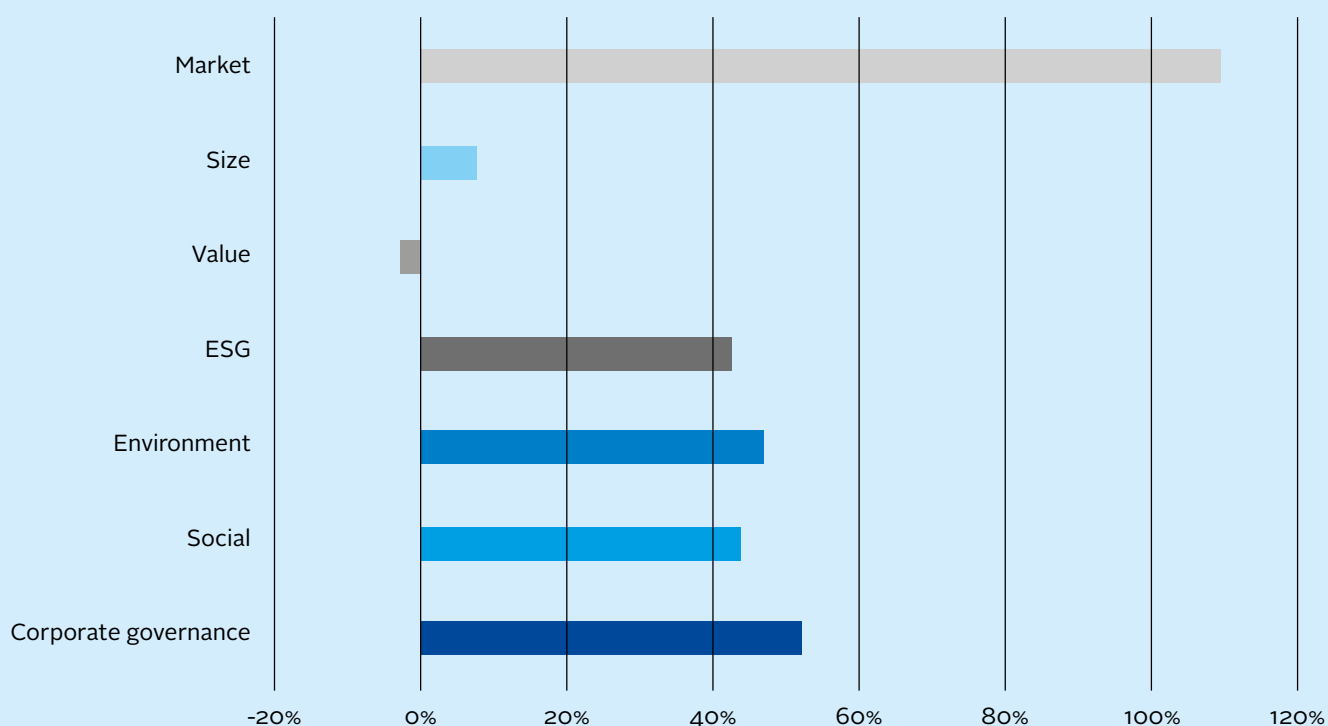


The social, environmental and corporate governance factors explain 1.6%, 2.4% and 2.7% of positive excess returns respectively. While our fund's returns are not explainable by the value factor, 0.9% of its returns can be explained by a size factor.

When performing a sensitivity analysis, we measured the actual response of our fund's return to one unit change in factor return. We do this in a similar manner to having beta

represent the response of our fund's return to one unit in market benchmark return change, which in our case is 1.1, or 110% (figure 2). When the size and value factor returns were increased by 1%, the increase in the fund's return was in absolute terms negligible at less than 0.10%. When the environmental, social and governance factor returns were increased by 1% independently, the fund's returns increased by 0.47%, 0.44% and 0.52%, respectively.

Figure 2: Average reaction of quotient returns to changes in factor returns (i.e. a 1% increase in corporate governance returns will lead to a 0.52% increase in Quitient's return)



CASE STUDY

[BACK](#)

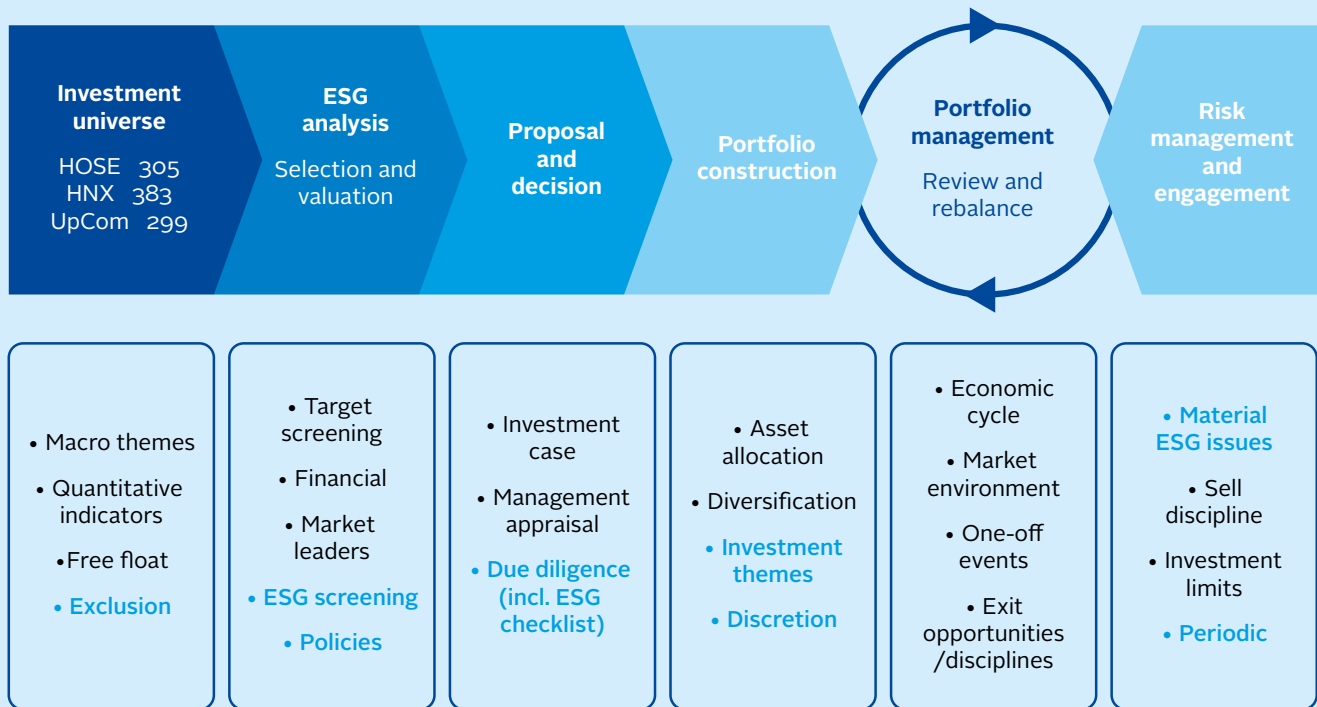
ENGAGEMENTS AFFECTING PORTFOLIO CONSTRUCTION

Company	VietNam Holding Ltd
Author	Ezra Vontobel

The investment process of our VietNam Holding Ltd. (VNH) fund includes an extensive ESG screening (figure 1) and an active engagement programme that is applied to all companies that it invests in. This programme includes

regular analyst visits and the personal involvement of a member of the Board of Directors of VNH and the fund's asset manager, VietNam Holding Asset Management Ltd. (VNHAM).

Figure 1: Integrating ESG factors into investment process



All VNH investee companies are categorised in one of three groups, which are set, and periodically changed, based on financial indicators and fulfillment of strict ESG criteria: Strong Conviction (Group A), Conviction (Group B) or Conviction with Reservation (Group C). Group A companies can have a maximum of 7% of VNH's NAV invested in them, Group B, 5% and Group C, 3%.

Our Director Engagement Program initially focused on improving an investee company's financial performance, but in 2010 the programme became equally focused on introducing and emphasising the necessity to systematically implement ESG factors, including the importance and benefits of non-executive Board Members. As a result, the programme has generated a significant increase in visits to investee companies by VNH/VNHAM directors.

The Director Engagement Program relies on a standardised procedure using tried and tested KPIs. The procedures and criteria are outlined in VNHAM's Operational Manual, and the Program is reviewed quarterly.

The results of the Director Engagement Program, as well as the more frequently implemented Analyst Engagement Program, lead directly to rebalancing portfolios in accordance with the findings. When a company is found to have certain ESG issues, VNHAM will downgrade that company to a lower investment conviction group. Once the ESG issue has been resolved, the company can be returned to the initial conviction group.



PORTFOLIO REBALANCING: TRAPHACO

Traphaco (TRA) is Vietnam's leading herbal medicine manufacturer. As a pharmaceutical company that manufactures products from naturally grown ingredients based upon traditional Asian medicine, TRA already had a respectable track record in terms of environmental friendliness. However, it was lacking in other key ESG areas. Most notably, its five-member Board consisted entirely of Directors with executive functions within the company. TRA was initially categorised as a Group B VNH investment, in part due to these shortcomings.

VNH began engaging TRA on Board Composition in late 2013. In early 2015, VNH endorsed Mrs. Tran Tue Tri as an independent director. Mrs. Tri not only became a non-executive member of the Board, but also the only member of the now seven-person Board with no ownership in TRA.

Following significant ESG improvements, VNH has upgraded TRA to the Group A investment category and increased its holding to the maximum permitted limit of 7% of VNH's NAV at the time of investment. VNH currently has a 10.4% ownership stake in Traphaco.

VNHAM immediately opened up a line of dialogue with Global Witness and subsequently engaged both investee companies in an attempt to ascertain their point of view on the allegations made by the NGO. Neither company was able to convince VNHAM that the allegations were not true and that they were not involved in any wrong-doing.

Before this issue surfaced, DPR made up 4.7% of VNH's NAV and TRC 1.2%. In May, 2013, not quite two months after having been contacted by Global Witness, VNHAM began divesting from both companies, and was fully divested by early August 2013.

PORTFOLIO REBALANCING: DONG PHU RUBBER AND TAY NINH RUBBER

Dong Phu Rubber (DPR) and Tay Ninh Rubber (TRC), both part of the state-owned Vietnam Rubber Group (VRG), were added to VNH's portfolio in 2007. Both were among VNH's first investee companies. Between 2007 and 2013 DPR especially showed strong performance and there was little reason to reconsider the investments.

In March 2013 VNHAM was contacted by the NGO Global Witness and asked if the fund was aware of allegations against the parent company VRG in relation to its activities in Cambodia and Laos, including: corruption, dubious acquisitions of forested areas and farmland, deforestation and bulldozing rice fields to make way for rubber plantations. It became clear that the indigenous people and the environment in the affected areas were being hit very hard by these actions: entire forests were being razed to make way for rubber plantations, and whereas local farmers previously were able to cultivate the (state-owned) rice fields, the rubber companies mainly brought in their own people, depriving the villagers of a source of both food and income. In some cases, there were indications of forced relocation of indigenous people.

CASE STUDY

[BACK](#)

ENGAGING COMPANIES ON SUSTAINABILITY STRATEGY

Company	Ownership Capital
Author	Francois Schockaert

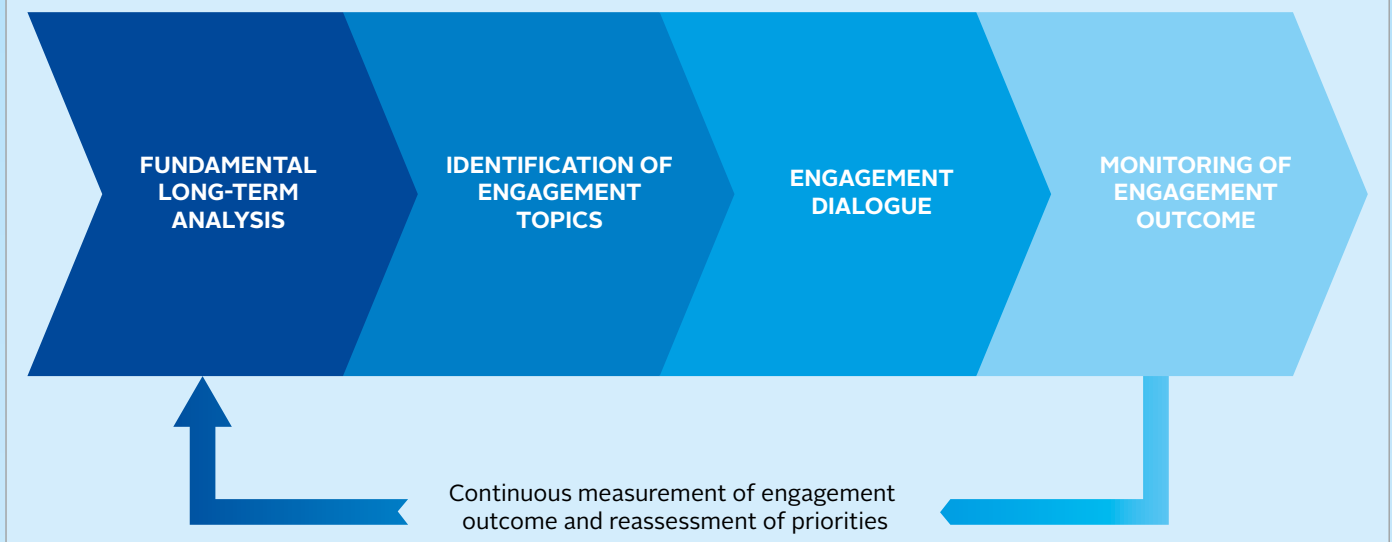
Through its internal screening process, our investment team identified a US industrial measurement tools manufacturer as an attractive investment opportunity, based on its strong market position in a competitive and fragmented market, a culture focused on continuous improvement and a high-quality management team. However, the company had a very basic approach to energy efficiency, and no comprehensive longer-term sustainability strategy.

Our fundamental analysis revealed that one of the long-term structural drivers for the company's growth was its customers' desire to measure and manage their environmental footprint, an effort which required the products and instruments sold by the target company. Adopting a sustainability strategy would, therefore, be

crucial in developing the company's commercial credibility and brand. It would also improve the company's ability to recruit young engineers who prefer working for sustainability leaders.

During our initial due diligence meeting with the CEO and wider management team, we shared our analysis and presented a roadmap to a sustainability strategy that would enable the company to improve its sustainability efforts and communicate progress to stakeholders. The company subsequently committed itself to the roadmap, and as a result we took an initial stake, as well as offering the prospect of a stake increase, subject to the company making measureable progress on its roadmap towards sustainability.

Figure 1: Continuous engagement cycle



THE ROADMAP

Within a couple months of our initial meeting with the company, the management team hired a manager to centralise the existing sustainability efforts, build an internal platform for sharing best practices and start measuring critical components of the company's carbon footprint and energy usage. After receiving a detailed presentation by the CEO on these efforts, we further engaged on expanding the scope of the initiative to include social parameters such as employee retention rates and training.

In the following months, the company released an inaugural sustainability report in which it published a number of environmental and social policies as well as the baseline measurement for its carbon footprint. Simultaneously, the company renewed its car fleet and optimised its sales and service technicians' routes, resulting in an 11% decrease in carbon emissions, roughly the equivalent of 1,850 mid-sized cars.



In the following year, the company published a second sustainability report that further expanded the scope of its disclosure, and detailed substantial energy and carbon emissions reductions.

RESULTS AND LESSONS LEARNED

Catalysed by the engagement programme, the company reduced its energy consumption by 30% and its carbon emissions by 20%, and announced clear plans to reduce them by a further 10% by 2020.

Our incentive-based approach of offering to increase our stake on the back of improvement played an important role in continuing the company's sustainability improvements. The improvements the company has made in sharing its sustainability efforts, while continuing to deliver strong financial performance (including growth rates exceeding market growth and expanding its profitability by over 500bps), are pleasing, but there remains ample room for additional improvement. Our continuous engagement cycle will focus on expanding the scope of the analysis to include further improvements on water consumption and waste management.

We estimate that the direct measurable savings and pricing benefits from adopting a sustainability programme in this case currently amount to over US\$12.3 million in pre-tax annual operating savings. At the company's current PE multiple, this translates into an incremental US\$243 million in total market cap after a five-year holding period, and an additional 60 basis points in annual return to us. While it has been possible to identify direct engagement benefits, we believe there are also substantial unquantifiable benefits arising from better long-term business strategies through improvements in employee morale, brand value for clients, etc., which can yield even greater long-term financial benefits than these directly attributable/measurable benefits.

THE ROAD AHEAD

We are encouraged by the advanced integration practices of the asset owners, investment managers and sell-side brokers that have contributed to this publication. Their case studies and insights have demonstrated that ESG integration practices are becoming more sophisticated and that the impact of ESG issues on the portfolio is quantifiable.

We expect this positive trend of investors systematically valuing ESG factors alongside other financial factors to continue. The increasing availability of company ESG data will support it, as will regulation, capital flowing into ESG-integrated assets and training on ESG integration.

Another market force that will increase the uptake of ESG integration is demand from asset owners. Asset owners' expectations of investment managers to embed ESG factors into their investment processes and investment decisions are rising. Their manager selection and monitoring processes increasingly include technical questions on ESG integration and requests for specific examples of investment decisions and trading activity that have been influenced by ESG factors.

Investment managers are responding to these demands. As demonstrated in this publication, ESG integration is being applied to all investment strategies along the active-to-passive investment spectrum, including fundamental, quantitative, smart beta and passive. This allows asset owners to integrate ESG factors across the whole of their listed equity portfolios, regardless of the types of investments they own.

In addition, the case studies in the chapter on investment managers' processes show that investment managers are investing in ESG integration resources and are developing advanced tools that will ensure ESG factors are systematically integrated into investment decisions.

We are also seeing reassuring signs from sell-side brokers. To understand the type of ESG-integrated sell-side research that is available, we asked sell-side brokers to submit research to the PRI, some of which is featured in chapter 2. We received nearly a hundred pieces of research, highlighting both the demand for ESG-integrated research from the buy-side, and the sell-side's efforts to meet these demands.

We expect more asset owners, investment managers and sell-side brokers to follow the progress that the leaders highlighted in this publication have made so far. We hope that this publication will assist all investors, at all levels of integration, in their next step towards explicitly and systematically integrating ESG factors into their investment analysis and decisions.

PUBLICATION CREDITS

Author: Justin Sloggett, CFA
Contributors: Don Gerritsen, Mike Tyrrell (contractor)
Reviewers: Kris Douma, Tomi Nummela

Editor: Mark Kolmar
Design: Alessandro Boaretto, Thomas Salter

The Principles for Responsible Investment (PRI)

The PRI works with its international network of signatories to put the six Principles for Responsible Investment into practice. Its goals are to understand the investment implications of environmental, social and governance (ESG) issues and to support signatories in integrating these issues into investment and ownership decisions. The PRI acts in the long-term interests of its signatories, of the financial markets and economies in which they operate and ultimately of the environment and society as a whole.

The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice. The Principles were developed by investors, for investors. In implementing them, signatories contribute to developing a more sustainable global financial system.

More information: www.unpri.org



The PRI is an investor initiative in partnership with UNEP Finance Initiative and the UN Global Compact.

United Nations Environment Programme Finance Initiative (UNEP FI)

UNEP FI is a unique partnership between the United Nations Environment Programme (UNEP) and the global financial sector. UNEP FI works closely with over 200 financial institutions that are signatories to the UNEP FI Statement on Sustainable Development, and a range of partner organisations, to develop and promote linkages between sustainability and financial performance. Through peer-to-peer networks, research and training, UNEP FI carries out its mission to identify, promote, and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

More information: www.unepfi.org



United Nations Global Compact

The United Nations Global Compact is a call to companies everywhere to align their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of UN goals and issues embodied in the Sustainable Development Goals. The UN Global Compact is a leadership platform for the development, implementation and disclosure of responsible corporate practices. Launched in 2000, it is the largest corporate sustainability initiative in the world, with more than 8,800 companies and 4,000 non-business signatories based in over 160 countries, and more than 80 Local Networks.

More information: www.unglobalcompact.org

