Active is: The Future of ESG Investing

Dr Steffen Hoerter
Global Head of ESG
Allianz Global Investors
London, May 21st 2019

For professional investors only
We are committed to integrating ESG factors into all investment decisions and across all asset classes

ESG is in our DNA
ESG factors are crucial investment performance drivers, both from a return and risk perspective

All investment professionals have access to proprietary ESG research via a digital collaboration platform

We pursue an active stewardship approach to help businesses to improve practices and performances

Data as at 31 December 2018. Source: Allianz Global Investors. Any differences in totals are due to rounding. Impact comprises different strategies targeting climate transition, environmental projects and renewable energy. Environmental, social and governance (ESG); Sustainable & responsible investing (SRI); Dow Jones Sustainability Index (DJSI); Principles for responsible investing (PRI). Sustainability leadership and inclusion in the DJSI are based on the research of and an evaluation of questionnaires submitted to RobecoSAM. The PRI assessment report is based on information reported directly by signatories. Moreover, the underlying information has not been audited by the PRI or any other party acting on its behalf.
Agenda

01 Drivers of ESG
02 Alpha of ESG
03 The Next Level
01
Drivers of ESG
Drivers of ESG: Client demand, regulations, investment alpha

<table>
<thead>
<tr>
<th>ESG Client Demand</th>
<th>Long duration, liability-matching clients:</th>
<th>ESG Affine clients:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▪ Public Pension Funds</td>
<td>▪ High Net-Worth Individuals</td>
</tr>
<tr>
<td></td>
<td>▪ Corporate Pension Funds</td>
<td>▪ Family Offices</td>
</tr>
<tr>
<td></td>
<td>▪ Insurance-linked Investors</td>
<td>▪ Endowments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Younger Generations</td>
</tr>
</tbody>
</table>

| Global ESG Regulation | 10 points of the EU Action Plan Sustainable Finance | FCA and PRA | China Green Finance Regulation |

<table>
<thead>
<tr>
<th>ESG Alpha</th>
<th>ESG Risk Management</th>
<th>Sustainability Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TCFD</td>
<td></td>
</tr>
</tbody>
</table>

EU = European Union, FCA = Financial Conduct Authority; PRA = Prudential Regulation Authority; TCFD = Task Force on Climate Related Financial Disclosure; CDP = Carbon Disclosure Project.

Source: Allianz Global Investors, 2019. For illustrative purposes only.
The new world: more ESG feedback-loops to society
Hang on what is sustainability about: intergenerational fairness?

Sources: CNN; P. Parks/AFP/Getty images; Spiegel; Ouest-France

London, UK

Munich, Germany

Jiangsu, China

Paris, France
Investor Appetite for ESG is blooming

INVESTOR APPETITE FOR ESG IS BLOoming

- 71% say ESG investing will grow dramatically more popular in three years.
- 56% would allocate more to ESG if benchmarks improved.
- 71% of investors say they will manage all their portfolios in an ESG conscious way by 2030—some even sooner.

Source: Allianz Global Investors 2019
Clients want to have it all: ESG and financial performance

ESG = Environmental, Social and Corporate Governance Factors.
Source: http://www.deltaim.com/socially-responsible-investing/

„I want to invest in something that respects the environment, that´s morally responsible, socially active, aids the poor and the homeless and makes me a bundle.“
# ESG risks moving to the top of the agenda

## Top 5 Global Risks in Terms of Impact according to World Economic Forum surveys 2009 – 2019

<table>
<thead>
<tr>
<th>Year</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Asset price collapse</td>
<td>Retrenchment from globalization (developed)</td>
<td>Oil and gas price spike</td>
<td>Chronic disease</td>
<td>Fiscal crises</td>
</tr>
<tr>
<td>2010</td>
<td>Asset price collapse</td>
<td>Retrenchment from globalization (developed)</td>
<td>Oil and gas price spike</td>
<td>Chronic disease</td>
<td>Fiscal crises</td>
</tr>
<tr>
<td>2011</td>
<td>Fiscal crisis</td>
<td>Climate change</td>
<td>Geopolitical conflict</td>
<td>Fiscal crises</td>
<td>Extreme energy price volatility</td>
</tr>
<tr>
<td>2012</td>
<td>Major systemic financial failure</td>
<td>Water supply crises</td>
<td>Food shortage crises</td>
<td>Chronic fiscal imbalances</td>
<td>Extreme volatility in energy and agriculture prices</td>
</tr>
<tr>
<td>2013</td>
<td>Major systemic financial failure</td>
<td>Water supply crises</td>
<td>Diffusion of weapons of mass destruction</td>
<td>Unemployment and under-employment</td>
<td>Failure of climate change adaption</td>
</tr>
<tr>
<td>2014</td>
<td>Fiscal crises</td>
<td>Climate change</td>
<td>Water crises</td>
<td>Unemployment and under-employment</td>
<td>Critical information infrastructure breakdown</td>
</tr>
<tr>
<td>2015</td>
<td>Water crises</td>
<td>Rapid and massive spread of infectious diseases</td>
<td>Weapons of mass destruction</td>
<td>Interstate conflict with regional consequences</td>
<td>Failure of climate change adaption</td>
</tr>
<tr>
<td>2016</td>
<td>Failure of climate change mitigation and adaption</td>
<td>Extreme weather events</td>
<td>Extreme weather events</td>
<td>Large-scale involuntary migration</td>
<td>Severe energy price shock</td>
</tr>
<tr>
<td>2017</td>
<td>Weapons of mass destruction</td>
<td>Extreme weather events</td>
<td>Failure of climate change mitigation and adaption</td>
<td>Major natural disasters</td>
<td>Failure of climate change mitigation and adaption</td>
</tr>
<tr>
<td>2018</td>
<td>Weapons of mass destruction</td>
<td>Failure of climate change mitigation and adaption</td>
<td>Water crises</td>
<td>Natural disasters</td>
<td>Water crises</td>
</tr>
<tr>
<td>2019</td>
<td>Weapons of mass destruction</td>
<td>Failure of climate change mitigation and adaption</td>
<td>Natural disasters</td>
<td>Water crises</td>
<td>Natural disasters</td>
</tr>
</tbody>
</table>

Source: World Economic Forum 2019, The Global Risks Report 2019, 14th edition, p.6. Global risks may not be strictly comparable across years, as definitions and the set of global risks have evolved with new issues emerging on the 10-year horizon. For example, cyberattacks, income disparity and unemployment entered the set of global risks in 2012. Some global risks were reclassified: water crises and rising income disparity were re-categorized first as societal risks and then as a trend in the 2015 and 2016 Global Risks Reports, respectively.
The EU committed to **three ambitious climate and energy targets for 2030** in line with the UN 2030 Agenda, the SDGs and the Paris Agreement. In its **long-term strategy**, the EU strives for **net-zero GHG emissions by 2050**.

- **Minimum 40% cut** in greenhouse gas emissions compared to 1990 levels.
- **At least 32.5% energy savings** compared with the business-as-usual scenario.
- **At least a 32% share of renewables** in final energy consumption.

The yearly investment gap to meet these targets is estimated to be between **€ 175 to 270bn**.

Public supporting schemes alone will not be sufficient to meet those investment needs. The private sector will have to play a huge role and a smart policy framework is needed to incentivise private investment.

**Sources:**
- EIB: Restoring EU competitiveness (2016)
- European Commission: A clean planet for all (2018)
- European Commission: Commission Work Programme 2019
The global sustainability opportunity for economies and investors

How to finance the estimated USD 6tn p.a. to reach the 17 Sustainable Development Goals until 2030?

The potential global benefits of sustainability have been estimated to unlock USD 26tn of economic value through new jobs, well-being, and competitiveness.¹

European Commission estimates an annual finance need of EUR 270 bn for Climate, Energy and Water alone.²

02

Alpha of ESG
Alpha relevance of ESG for Investors

Financial materiality of ESG

+ Intangible Asset Value as the dominant driver of corporate value
  - ESG underlying driver

+ Enrichment of risk management: avoid large draw downs
  - Evidence of ESG pricing risk downside

+ Exploiting ESG market inefficiency:
  - ESG information is “grey” / not black or white

Fundamental Research | Risk/Reward Trade-off | Discreet Investment Approach | Total Investment Alpha
Explaining Intrinsic ESG Value of corporates

Material ESG Factors are important value drivers
Intangible Assets meanwhile determine 80-100% of S&P 500 market capitalization*

ESG in Tangible Assets
- Stranded Assets

Examples:
- Depreciation oil + gas reserves
- Flooded real estate

ESG in Intangible Assets
- Reputation risk on client trust and retention

Examples:
- Brand damage impairing goodwill

Enterprise Value = Tangible Value + Intangible Value

## Framing ESG Risk

<table>
<thead>
<tr>
<th>ESG Risk</th>
<th>Macro</th>
<th>Sector</th>
<th>Portfolio</th>
<th>Idiosyncratic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Impact</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of Gross Domestic Product</td>
<td>Sector devaluation</td>
<td>Portfolio Tail Risk</td>
<td>EPS revision Credit downgrades</td>
<td></td>
</tr>
<tr>
<td><strong>Modelling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESG extended econometric models</td>
<td>Sector ESG materiality framework (SASB/proprietary)</td>
<td>ESG (tail) risk portfolio modelling and stress testing</td>
<td>ESG extended DCF models ESG in Credit Ratings</td>
<td></td>
</tr>
<tr>
<td>ESG Integrated assessment models</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Real-life examples</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP at risk due to physical climate change</td>
<td>Coal sector devaluing</td>
<td>Carbon price stress testing</td>
<td>PG&amp;E Credit Default</td>
<td></td>
</tr>
</tbody>
</table>

### Regulatory ESG Risk (i.e. ESG litigation, CO₂ Tax and Trade)

- Applies to nearly all asset classes

---

**Source:** Allianz Global Investors, 2019
Macro ESG risk: Climate change

3-5 °C
Global temperature increase by 2100

Source: IPCC’s projection “business as usual” scenario: RCP8.5, 2018

0.9 °C
Normalized actual global warming at 2018

Source: NASA / Goddard Institute for Space Studies

-23%
Global GDP loss due to climate change until 2100

Source: By Stanford University’s estimates, Burke M, Hsiang S.M., Miguel E.

$ 505bn
Physical climate change insurance losses for the last 2Y

Source: Swiss Re Institute; worldwide 2017/2018 damages aggregated
Sector ESG risk:
Coal sector heavily underperforming

Coal index performance versus a broad market index

Source: Allianz Global Investors, Bloomberg, 2019
Portfolio ESG risk: Maximum Drawdown and Value-at-Risk 1% display this

**European Universe – Maximum Drawdown**

**Global Universe – 1% VaR Worst Loss**

1 Solid line – Decile Portfolios, Dashed line – Parent Benchmark

Source: Allianz Global Investors, 2019
Idiosyncratic ESG risk: PG&E bankruptcy due to physical climate risk – who is next?

Credit Default Swap Spread and Share Price of PG & E

Source: Bloomberg as at 09 March 2019. Past performance is not a reliable indicator of future results.
Regulatory ESG risk: Corporate P/L prepared for higher carbon emissions pricing?

Initiative(s) Implemented or Scheduled¹

EU CO-2 Emissions Rights²

In 2019, these initiatives would cover **11 GtCO₂e**, representing **19.6%** of global GHG emissions

1 Source: World Bank accessed at 17/04/2019
2 Source: Bloomberg accessed at 08/04/2019
How to invest for climate impact
AllianzGI Green Bond Strategy

Allianz Green Bond Impact report

- **0.96 MW**: Renewable energy installed capacity
- **872 MW/h**: Renewable energy generation
- **1512 tons**: CO₂ avoided
- **0.85 Sharpe Ratio**: over 3 years

Relating to EUR 326m Assets under Management

---

1 As at April 2019; 2 The Sharpe ratio states the relationship between the return generated by the fund and the investment risk. The fund’s excess return versus the risk-free market rate is compared to volatility. Negative values are not meaningful.

Impact figures are calculated for EUR 1 mn investment in Allianz Green Bond. Data is calculated for green bonds included in the portfolio as of 31/12/16 with available reportings or impact expectations disclosed by the issuer (68% of the green bond bucket). Bonds without any available reporting or impact expectation disclosure from issuer are not included. Impact figures are approximates and do not necessarily reflect the exact impact of the fund.

Source: Allianz Global Investors, 2019. This is for illustrative purposes only, it should not be considered a recommendation to buy or sell any particular security or strategy or investment advice.
MSCI overly punishes the company on account of exposure to EU carbon regulatory environment, without taking into account compliance and risk-mitigation capacity. Moreover, use of misleading metrics and peer group that negatively impact rating.

In-depth ESG risk analysis, informed by combined sector & ESG expertise and direct company contact

### Company Engagement

- Engaged with company on climate change risk. Expressed support of continued investments in low-carbon technologies to drive emissions’ reductions. Encouraged the company to engage constructively with policymakers to reduce regulatory uncertainty.

- Participated in a steel roundtable convened by the Institutional Investors Group on Climate Change (IIGCC), which addressed investors’ expectations regarding steelmakers’ management of climate change risks. Steel producer’s participation in roundtable discussions has provided insightful information on the technological and operational challenges companies face to improve energy efficiency and thus reduce carbon emissions.

### Portfolio Manager

**MSCI 2.0**

MSCI overly punish the company on account of exposure to EU carbon regulatory environment, without taking into account compliance and risk-mitigation capacity. Moreover, use of misleading metrics and peer group that negatively impact rating.

### ESG Research Analyst

**AllianzGI 4.0**

Management lead important efforts to improve energy efficiency and invest in low-carbon technologies to de-carbonize operations. These and a prevalent low-price carbon environment, help diffuse tail risks. A higher E rating is warranted, yet remains capped due to EU policy uncertainty.
03
The Next Level
Third Party ESG Ratings Differ Due to Different Methods

- Analysis across same investment universe
  - Third party ESG research ratings from different providers are lowly correlated
  - Unlike CRAs - where there is a high correlation of corporate credit ratings

Key to ESG analysis: more data?
Artificial Intelligence and Big Data

Harvest complex data for Alpha
Moving from Financial to ESG Integrated Financial analysis

- ESG addresses multiple facets of a company’s position
  - It can be past, present, and future-looking
  - Formal or informal disclosures, non-structured data, spill-over effects
  - Hard quantifiable metrics vs softer management ambition

- To fully capitalise on the investment power of ESG, all of these have to be reflected to one extent or another
  - Can a single rating be fit for purpose?
  - Is it feasible to monitor manually or is innovation required?

Develop stronger ESG Investment signals
The next stage
Important tools to complete the future ESG investing puzzle

ESG is about long-term investing but all the more investors have demand for ESG risk hedging such as carbon risk hedging, physical climate risk hedging.

Build stronger ESG investment signals

Move beyond ESG ratings that are constrained by limited, largely backward looking corporate ESG disclosure.

Develop ESG risk hedging tools and strategies

Apply Artificial Intelligence in ESG

ESG research and investment tools built on continuous, real-time big-ESG data harvesting (cognitive language technologies, pattern recognition etc.)

Build pragmatic, functional ESG Value-at-Risk models

Transparent ESG performance attribution analysis

Our research shows the performance of some ESG indices vs. parent is correlated with more leveraged and/or growth-oriented biases.

Carbon stress testing, portfolio Paris Agreement alignment analysis

Allianz Global Investors 2019
Q & A
Biography

Dr. Steffen Hoerter
Global Head of ESG

Steffen Hoerter is the Global Head of ESG at Allianz Global Investors which he joined in 2001. He is internationally responsible for AllianzGI’s ESG investment integration strategy, ESG Policy and ESG Client Investment Solutions. Since July 2018, Steffen is also a member of the Technical Expert Group on Sustainable Finance which assists the European Commission in developing its legislative proposals.

Steffen is a regular conference speaker and has published various whitepapers and thought leader pieces on financial materiality of ESG in Equities, ESG in Corporate Fixed Income and ESG in Sovereign Bonds. An additional research focus is Climate Change and its integration into Strategic Asset Allocation and Portfolio Implementation. Between 2010 and 2016 he has been advising institutional investors, in particular pension funds in Europe on investment strategy, risk management and ESG integration.

Prior to joining Allianz Global Investors, Steffen worked as a Management Consultant for banks and risk management at an international consultancy firm. He studied Business Administration in Regensburg, Edinburgh and Ingolstadt/Eichstaett. He holds a doctorate from the Catholic University of Eichstaett-Ingolstadt, where he worked as a lecturer at the Department of Finance and Banking at WFI – Ingolstadt School of Management.

Steffen is a lecturer for Sustainable Responsible Investing with focus on insurance companies at European Business School/Germany.
Investing involves risk. The value of an investment and the income from it may fall as well as rise and investors might not get back the full amount invested. The views and opinions expressed herein, which are subject to change without notice, are those of the issuer companies at the time of publication. The data used is derived from various sources, and assumed to be correct and reliable, but it has not been independently verified; its accuracy or completeness is not guaranteed and no liability is assumed for any direct or consequential losses arising from its use, unless caused by gross negligence or wilful misconduct. The conditions of any underlying offer or contract that may have been, or will be, made or concluded, shall prevail. This is a marketing communication issued by Allianz Global Investors GmbH, www.allianzgi.com, an investment company with limited liability, incorporated in Germany, with its registered office at Bockenheimer Landstrasse 42-44, 60323 Frankfurt/M, registered with the local court Frankfurt/M under HRB 9340, authorised by Bundesanstalt für Finanzdienstleistungsaufsicht (www.bafin.de). Allianz Global Investors GmbH has established a branch in the United Kingdom, Allianz Global Investors GmbH, UK branch, 199 Bishopsgate, London, EC2M 3TY, www.allianzglobalinvestors.co.uk, which is subject to limited regulation by the Financial Conduct Authority (www.fca.org.uk). Details about the extent of our regulation by the Financial Conduct Authority are available from us on request. The duplication, publication, or transmission of the contents, irrespective of the form, is not permitted; except for the case of explicit permission by Allianz Global Investors GmbH.
Active is: Allianz Global Investors