



Incorporating ESG in Retirement Plans

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BLACKROCK®

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I. Introduction of ESG Investing

Breaking down each dimension of ESG

E 

Climate Change
Pollution & Waste
Environmental
Opportunities

S 

Human Capital
Product Liability
Social Opportunities

G 

Corporate Governance
Ethics
Corruption & Instability

Less exposure to environmental risk

Attraction/retention of skilled workers and customers

Well-run company with high-level risk controls

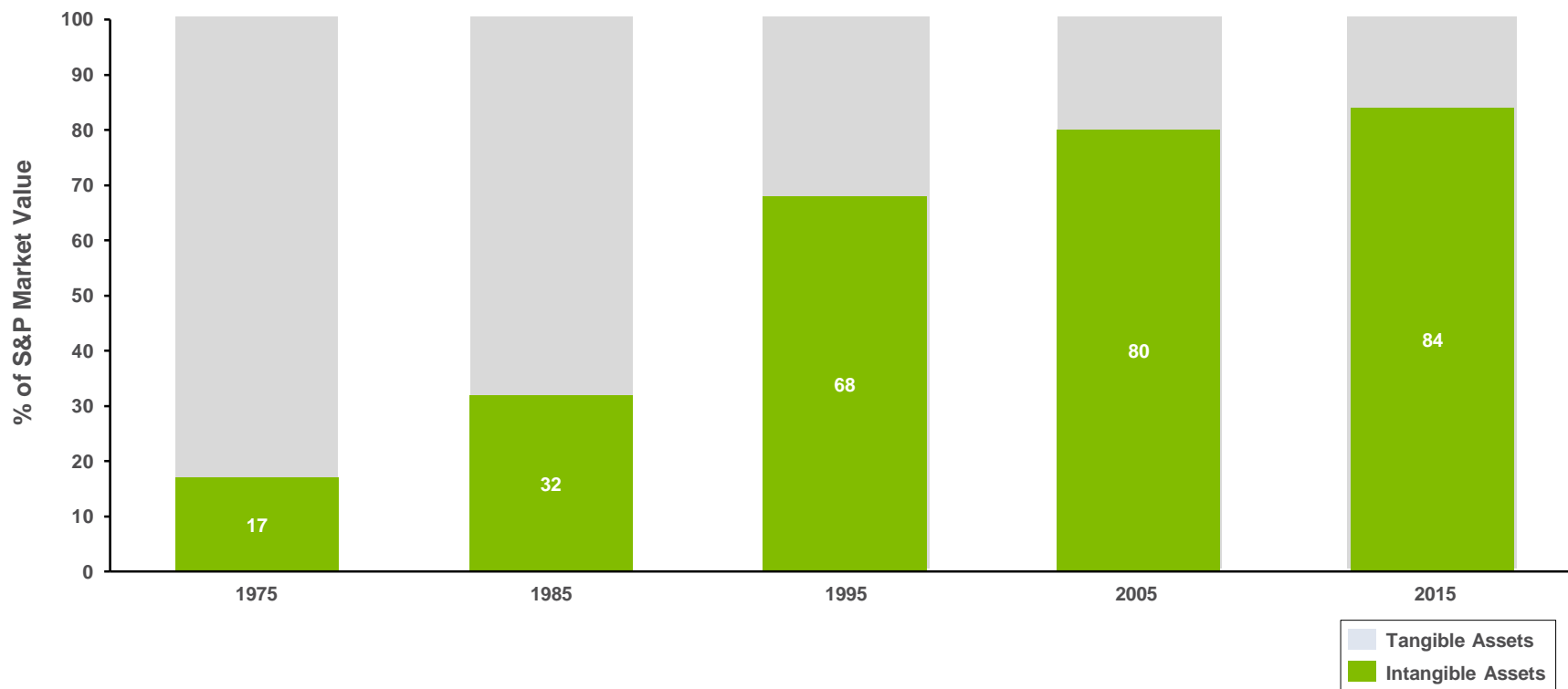
Source: Barclays Research (2016). <https://www.investmentbank.barclays.com/our-insights/esg-sustainable-investing-and-bond-returns/esg-infographic.html>

The growth of intangibles

Studies show an increasing proportion of market value linked to intangible assets

Traditional financial disclosure is increasingly inadequate in providing investors with the information they need.

Intangibles in S&P Market Value



Source: Intangible Asset Market Value Study, OceanTomo, 2017. <http://www.oceantomo.com/intangible-asset-market-value-study/>

ESG considerations increasingly matter to society

Two-thirds of millennials in the UK reportedly want to work for a company that is making a difference in the world; U.S. data shows similar trend

Source: *Global Tolerance Survey, 2015.*
Source: "2016 Employee Engagement Study," *Cone Communications, 2017.*

~22% of leading global companies' variation in brand strength can be explained by differences in ESG performance

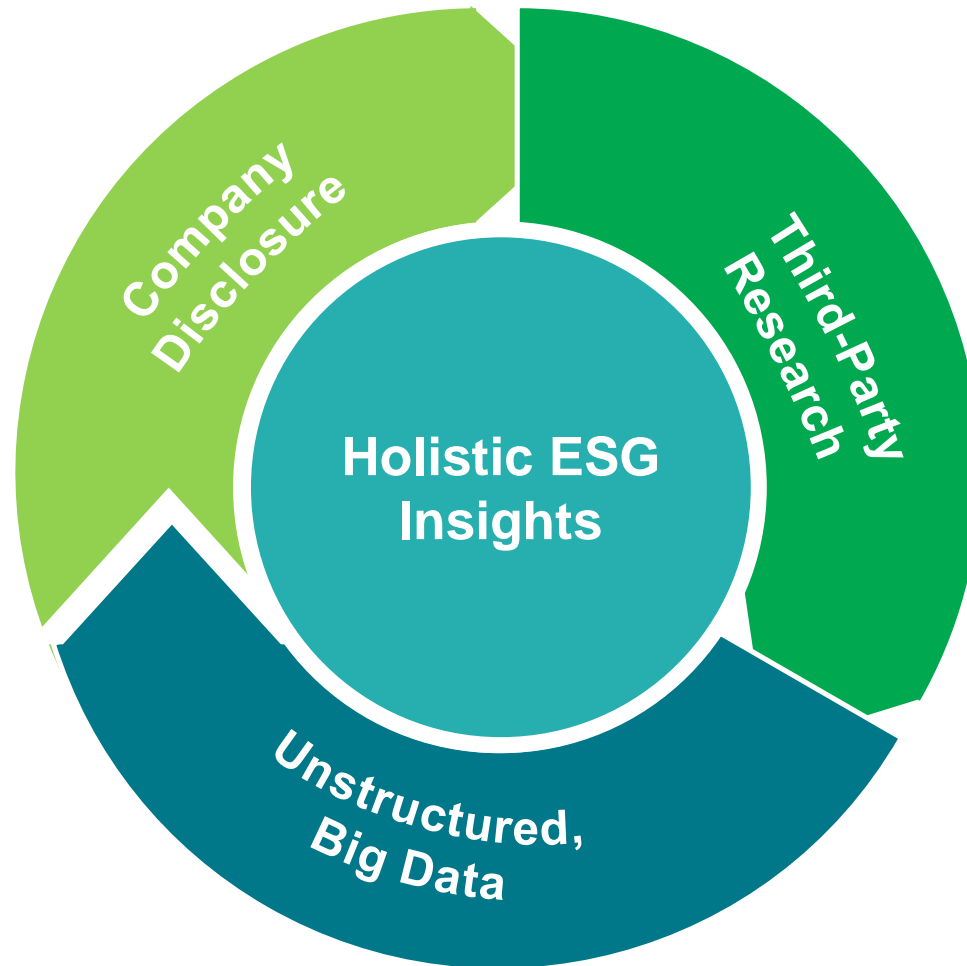
Source: Harvard Law School, "Corporate Investment in ESG Practices" 2015.

63% of Americans want businesses to take the lead in driving social and environmental change in the absence of government regulation; 78% want companies to address important social justice issues

Source: *2017 Cone Communications CSR Study*

For illustrative purposes only.

ESG data quality is improving rapidly



For illustrative purposes only.

II. ESG Market Landscape in APAC

APAC sustainable investing market of \$1T in 2016 accounted for 4.5% of APAC's total assets and is expected to grow to \$3.6T by 2020

Total Sustainable Investing Market AUM (\$T)

Market Growth (CAGR)

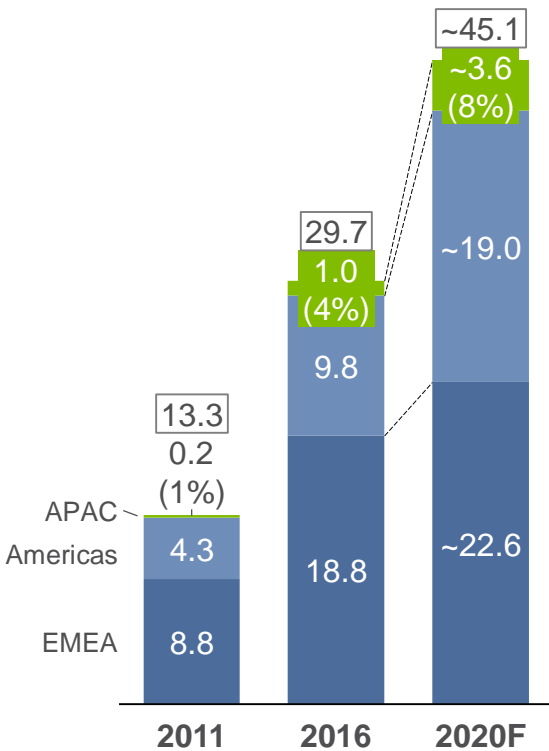
2011-2016 2016-2020¹

17% 11%

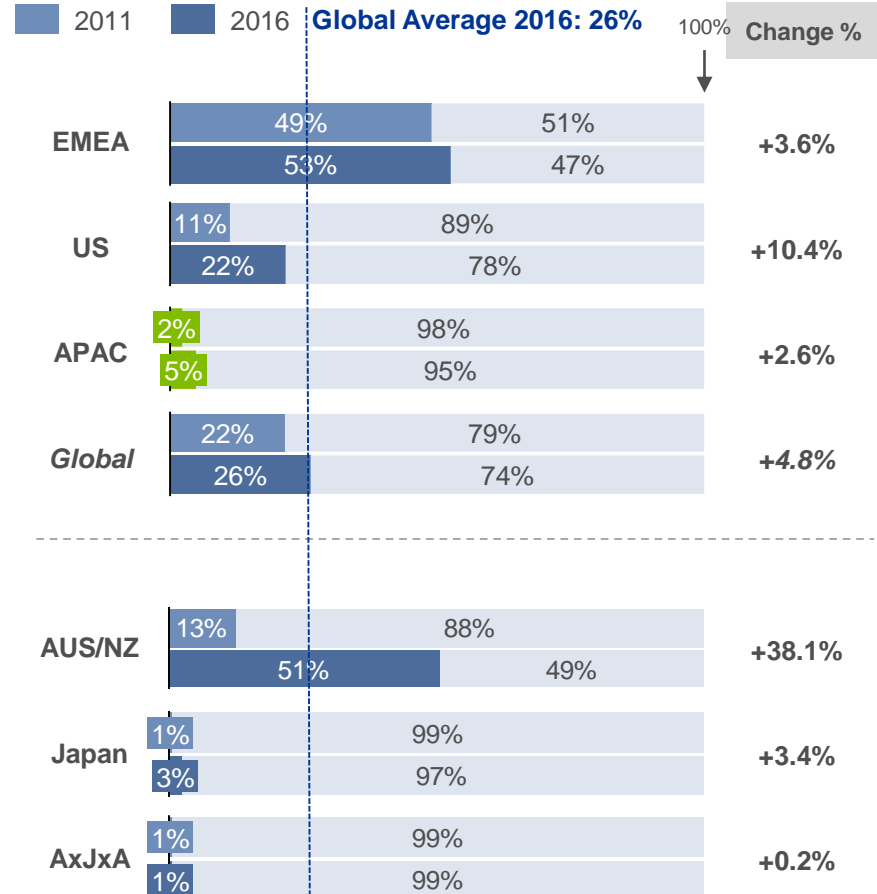
43% **35%+**

18% 18%

17% 17%



% of Sustainable Assets to Total Assets



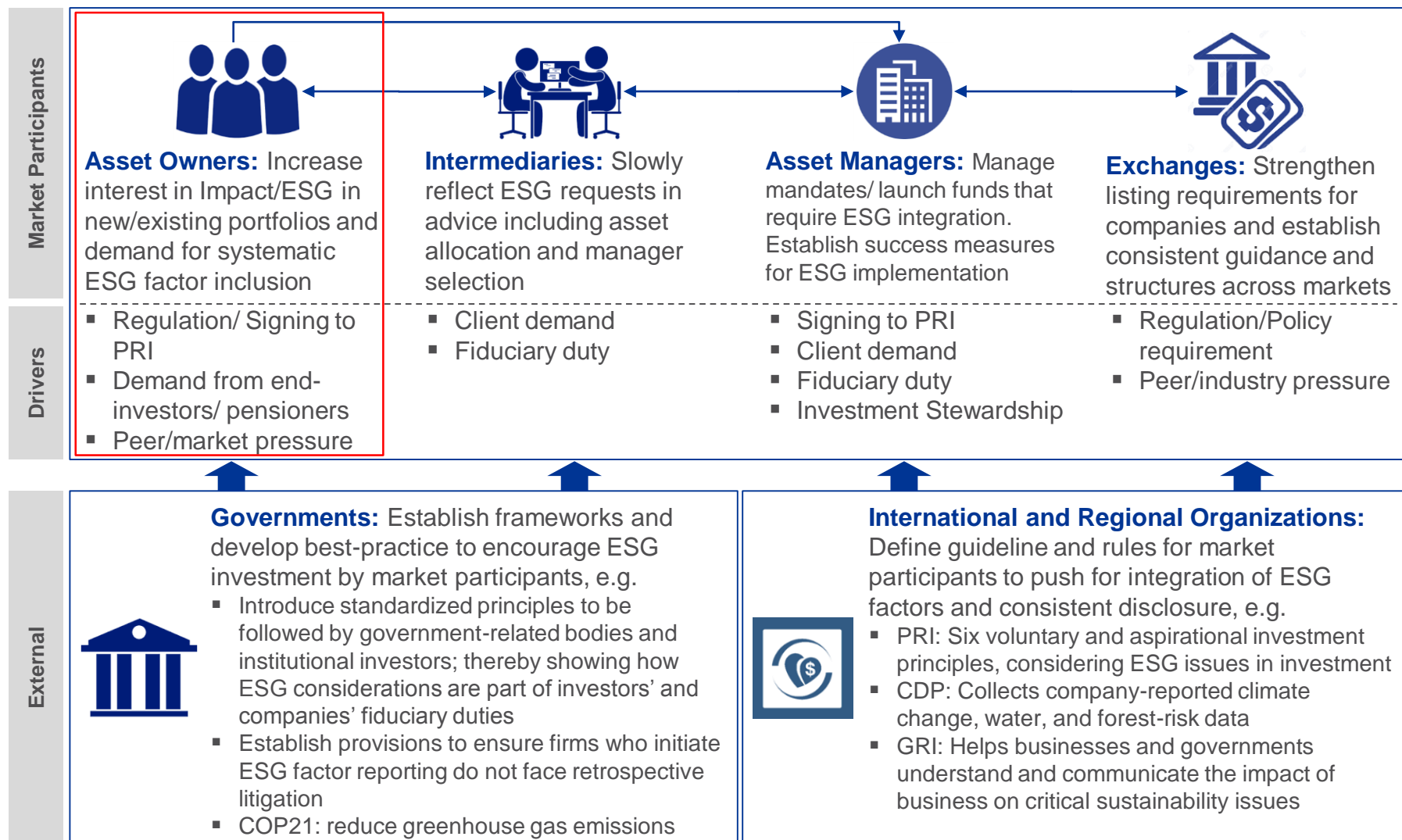
- ▶ APAC growth into 2016 is a multiple of EMEA/US and is expected to continue to grow at a relatively higher rate
- ▶ Within APAC, AUS/NZ are most developed while Asia incl. Japan are falling behind AUS/NZ and global average

Sources: Morningstar, UN PRI;

Notes: (1) following ASRIA 10-y growth assumption and based on discussions with PRI senior advisers, US/EMEA rates from Global Impact Investing

Sustainable Investing / ESG adoption is driven by various market participants and Governments are a particularly strong driver in APAC

Market Participants and Resulting Drivers for Impact Investing



Sources: Government websites, published news, stakeholder interviews

Top sustainability-related trends across investors (asset owners)

Concerns about Headline Risks

Central Banks, Public Pensions and **Insurance** companies are looking to mitigate exposure to controversial businesses and/or specific companies undergoing controversies

Climate Aware Investing

Large institutional asset owners, such as **Insurance** companies, are increasingly focused on addressing investment risks and opportunities due to climate change; further, **Higher Education Endowments** are continuing to evaluate low carbon and ex-fossil fuels solutions

Index Solutions

Defined Contribution and Pension plans are showing interest in **broadly diversified sustainable index options** with low tracking relative to a market-cap weighted index

UN SDGs as a Framework for Impact

Banks/Wealth Platforms are gravitating towards the United Nation's Sustainable Development Goals as a framework for investing in impact

Aligning Corpus with Mission

Mission-oriented investors, such as **Foundations/Endowments**, are increasingly aligning their investments with their broader purpose.

Millennials Driving Adoption

Family Offices are seeing the next generation express greater interest in sustainable solutions, and **Defined Contribution** plans with a younger employee base are also showing increased interest in sustainable solutions

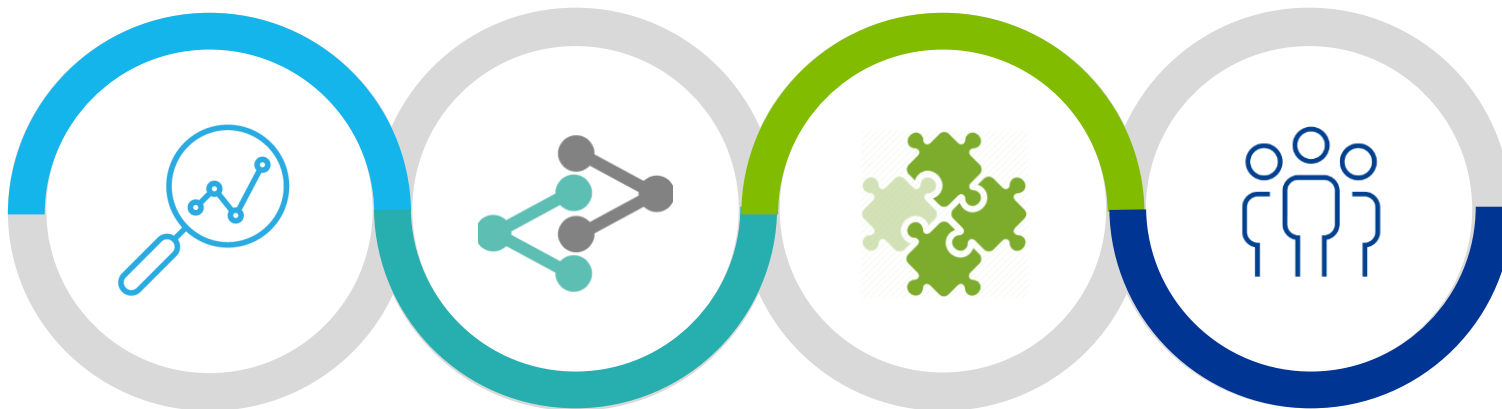
III. BlackRock Sustainable Investing

We are committed to being an industry leader in how we incorporate Sustainable Investing across our entire organization:



A company's ability to manage environmental, social, and governance matters demonstrates the leadership and good governance that is so essential to sustainable growth, which is why we are increasingly integrating these issues into our investment process"

– Larry Fink, 2018 Letter to CEOs



Insights

Developing the clearest possible picture of how environmental, social and governance issues affect risk and long term return

Integration

Integrating sustainability-related insights and data into BlackRock's investment processes across asset classes and investment styles

Solutions

Delivering sustainable investment solutions that empower clients to achieve their financial objectives

Stewardship

Engaging companies in index and alpha-seeking portfolios alike on sustainability-related issues that impact long-term performance

Source: BlackRock Sustainable Investing, February 2018. There is no guarantee that a positive investment outcome will be achieved.

Sustainable Investing at BlackRock

Sustainable investing spans a range of strategies that combine traditional investment approaches with environmental, social and governance (ESG) insights to seek enhanced long term risk-adjusted return

- We believe sustainability-related issues – ranging from board composition to human capital management to climate change – have real financial impacts
- We are passionate about providing clients a clear picture of how sustainability-related issues affect risk and long-term financial performance, and then delivering ESG solutions that improve their investment outcomes



Source: BlackRock Sustainable Investing, April 2018. For illustrative purposes only. There is no guarantee that a positive investment outcome will be achieved.

ESG is about identifying and measuring risks and potential opportunities

ESG issues not captured in financial analysis¹



Governance



Corporate Strategy



Compensation



Climate Risk



Human Capital

Risk

Permanent loss of capital

Opportunity

Long-term performance potential

Limit surprises from idiosyncratic event risks



Accidents



Fraud



Shutdowns



Strikes



Seek exposure to companies with lower cost of capital

Analysis of 200+ academic studies demonstrates that companies with high ESG ratings have a lower cost of capital.²

Limit exposure to systematic risk factors



Weather Patterns



Water Scarcity



Data Security



Skills Shortages



Seek exposure to companies with lower earnings volatility

A study of US stocks conducted by Bank of America Merrill Lynch found that stocks with superior ESG scores have signaled lower earnings volatility in 9 of 11 GIC sectors³

1. BlackRock's 2017-2018 Investment Stewardship Engagement Priorities. 2. From the Stockholder to the Stakeholder: How Sustainability Can Drive Financial Performance. University of Oxford and Arabesque Partners, March 2015. Available at: https://arabesque.com/research/From_the_stockholder_to_the_stakeholder_web.pdf 3. Savita Subramanian, ESG Part II, A Deeper Dive, Equity Strategy Focus Point, June. 2017. Available at: https://research1.ml.com/Archive/11769346.pdf?q=5tYXsLV9GrH4E6nbNuqzMg&__gda__=1511214223_d394b1dcb9977739f0fd6776ad538f3b. The universe of companies used in the study consists of the BofAML US coverage universe each year for which Thomson Reuters ESG data is available. For a list of companies included in the analysis, please refer to the study.

We believe companies that effectively manage ESG risks and opportunities perform better over time

MSCI found that companies with strong ESG profiles exhibit the following characteristics:

Stronger cash flows

- They are **more competitive** than their peers because they more efficiently use their resources, and/or have better human capital management as well as better manage long term business plans.
- This leads to **higher profitability** and **higher dividends**.

Less idiosyncratic risk

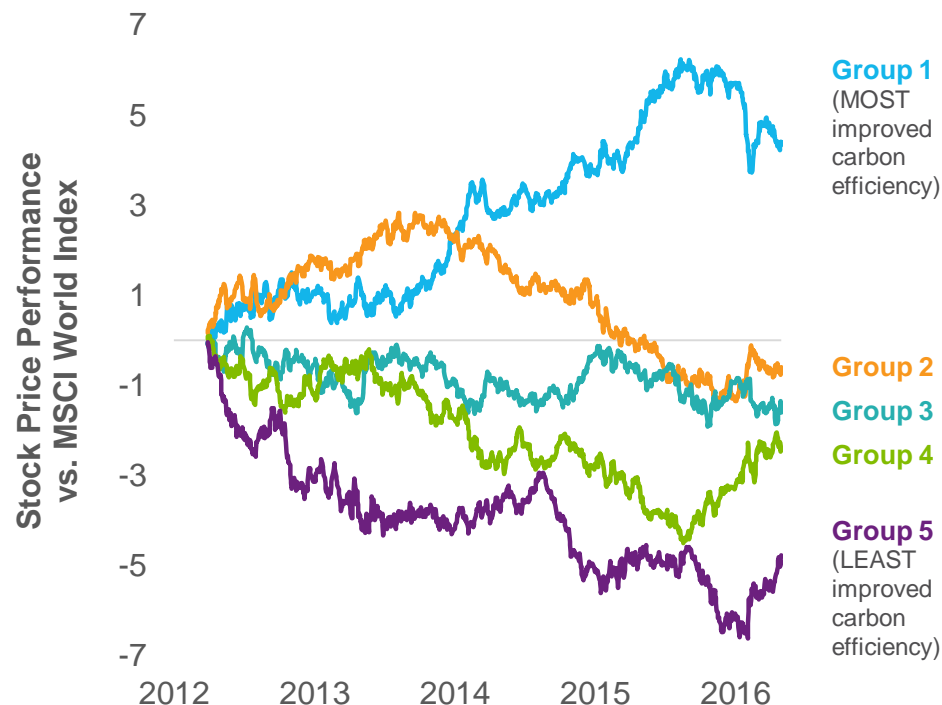
- They have **better risk control** and compliance standards.
- Better risk control leads to **fewer negative incidents** and **less stock-specific downside or tail risk** in the company's stock price.

Higher valuations

- They are **less vulnerable to systematic market shocks** and therefore show lower systematic risk.
- Lower systematic risk means a lower beta, which translate to **lower cost of capital** and a **higher valuation**. Further valuation is increased through the **increased size of investor base**.

BlackRock found that companies who reduce their carbon footprint also have stronger equity performance

Efficiency Improvement: Equity Performance by Carbon Intensity 2012-2016



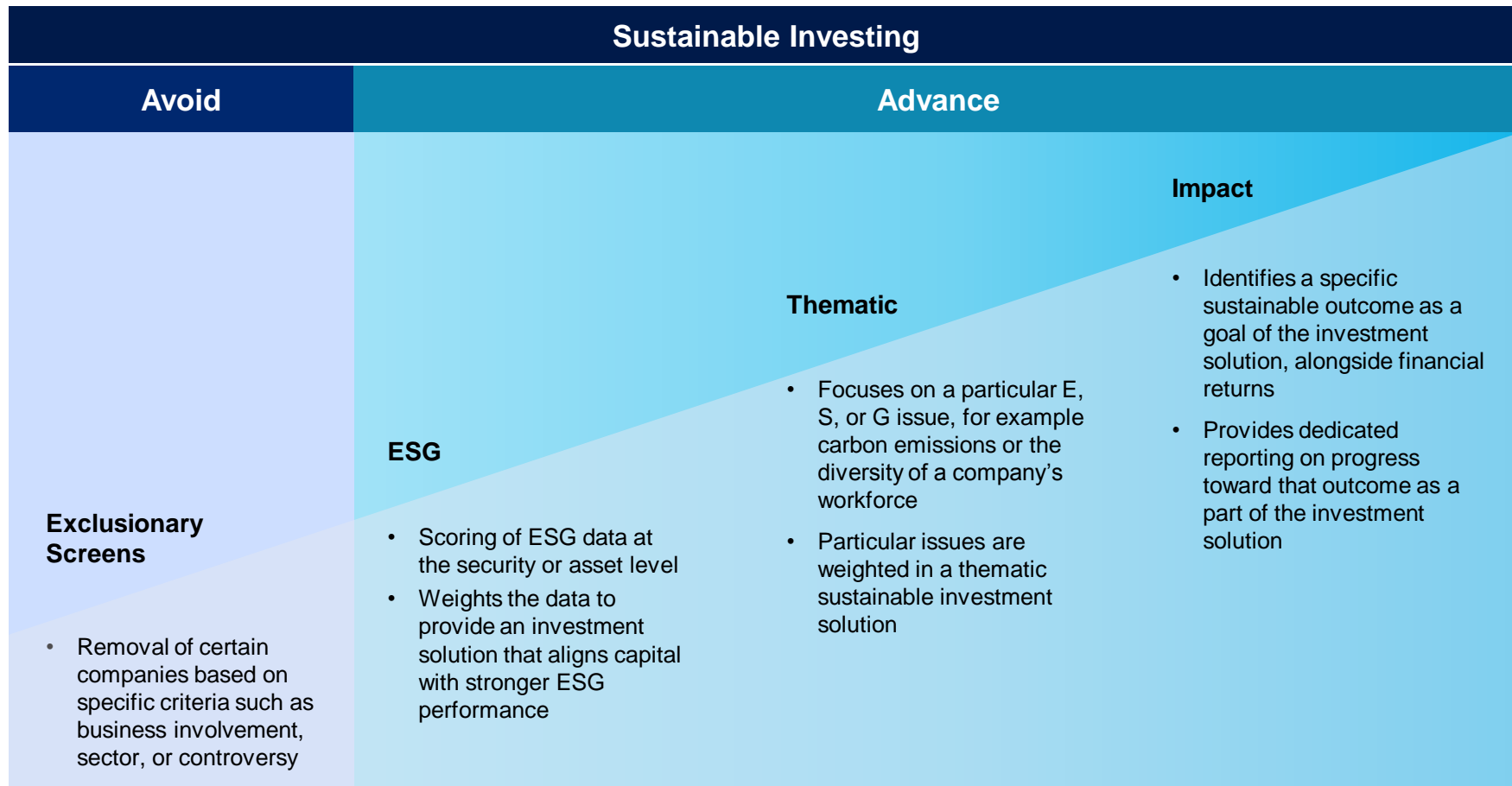
MSCI: "Foundations of ESG Investing, Part 1: How ESG affects Equity Valuation, Risk and Performance," 2017. Giese, Guido, Lee, Melas, Nagy, Nishik

Sources: BlackRock Investment Institute, ASSET4 and MSCI, July 2016. Notes: The analysis above calculates the carbon intensity of all MSCI World companies by dividing their annual carbon emissions by annual sales. Companies are ranked and bucketed in five quintiles based on their year-over-year change in carbon intensity. We then analyze each quintile's stock price performance versus the MSCI World Index. Most improved means the 20% of companies that posted the greatest annual decline in carbon intensity. Data are from March 2012 through April 2016. The example is for illustrative purposes only. Past performance is no indication of future results.

Broad spectrum of ways to incorporate Sustainable Investing

Clients motivations often fall into one of two categories: Avoid and Advance

- Avoid is about eliminating exposures to certain sectors or activities
- Advance is about aligning capital with certain behaviors, activities or outcomes



Source: BlackRock Sustainable Investing, April 2018. For illustrative purposes only and should not be interpreted as investment advice or recommendation.

We seek to deliver sustainable investment solutions that empower our clients to achieve their financial objectives

	AVOID	ADVANCE		
	Screened	ESG	Thematic	Impact
Objective	Remove specific companies/ industries associated with objectionable activities	Investing in companies based off aggregate ESG performance	Focus on particular E, S, or G issue	Target specific sustainable outcome alongside financial return
Key Considerations	Definition of the screen and financial impact of screens	ESG ratings system, active risk	Broad or concentrated/ niche exposure	Dedicated reporting on progress towards outcome
BlackRock Sustainable Investment Sample Solutions	<p>BLK offers a wide range of services, customized solutions in SMAs, and screened commingled products. Offerings include:</p> <ul style="list-style-type: none"> Climate: Ex Fossil Fuels Industry: Ex Controversial Weapons, ex Tobacco Country: Sudan free Religious: Christian, Islamic 	<p>BLK separates ESG strategies across two specific styles:</p> <ul style="list-style-type: none"> ESG optimized: offer a way for clients to maximize the overall increase in the ESG score of their portfolio while closely tracking parent indices. ESG best-in-class¹: a higher conviction strategy for clients interested in overweighting the highest-scoring ESG companies 	<p>BLK develops thematic products for clients focused on a specific theme:</p> <p>Environmental focus:</p> <ul style="list-style-type: none"> Low Carbon New Energy Electric Vehicles² <p>Social focus:</p> <ul style="list-style-type: none"> Diversity & Inclusion² Human Capital² 	<p>BLK offers strategies across asset classes that are linked to a tangible impact:</p> <ul style="list-style-type: none"> Fixed income: Green Bonds Private Market: Global Renewable Power

Source: BlackRock Sustainable Investing.

¹The 2014 Global Sustainable Investment Review. Best-in-Class is investment in sectors, companies or projects selected for positive ESG performance relative to industry peers

²Solutions currently in development

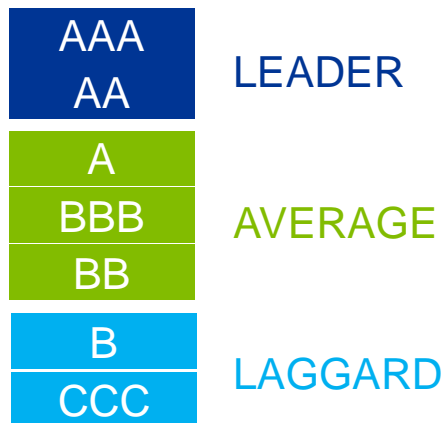
There is no guarantee that a positive investment outcome will be achieved. The above information is for illustrative purposes only and should not be interpreted as investment advice or recommendation.

Overview and Framework of MSCI's ESG Ratings

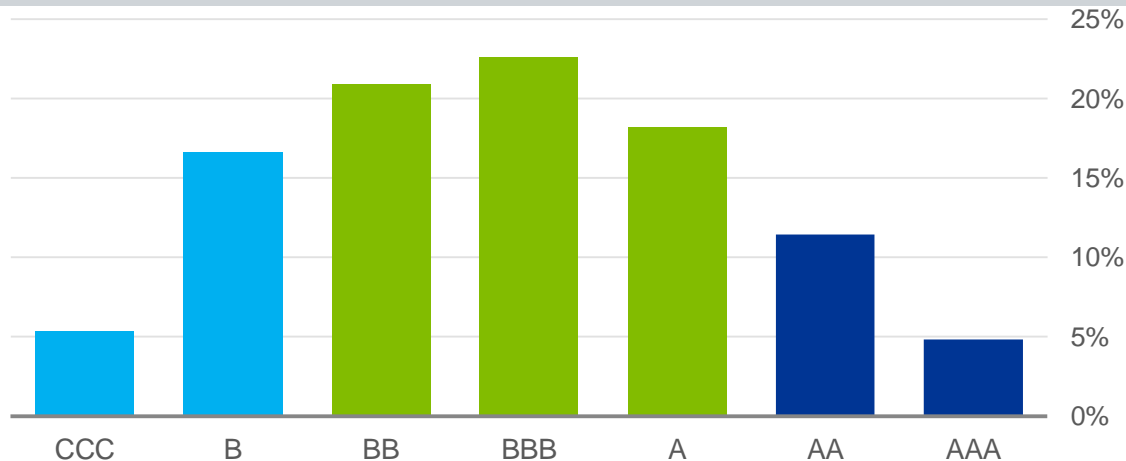
MSCI's ESG ratings are designed to identify environmental, social, and governance risks or opportunities not captured through conventional analysis

- Relevant data collected from 100+ sources is used to answer two questions:
 1. How exposed is a company to each material ESG issue?
 2. How is the company managing each material ESG issue?
- The results are segmented into key issue scores and weights specific to different industries
- The key issue scores and weights are combined and normalized per industry to offer an overall ESG rating (AAA-CCC) for each issuer

MSCI ESG Rating Framework



ESG representation in MSCI ACWI Index



Source: MSCI, June 2016. Ratings breakdown is by number of companies.

ESG Ratings in Practice

ESG rating framework allows for customizable analysis across sectors:

- MSCI ESG Ratings identify six to ten key ESG issues where companies in that industry currently generate large environmental or social externalities.
- Key issues and weights are set at a GICs subindustry level:
 - In the financials sector, environmental impact is given less importance when compared to social impact
 - In the energy sector, environmental impact is more important than social or governance issues in determining ESG score

Financials	
	Contribution to Overall ESG Score
Environment	5.0%
Carbon Emissions	5.0%
Social	69.0%
Human Capital Development	25.0%
Responsible Investment	25.0%
Privacy & Data Security	19.0%
Governance	26.0%
Corporate Governance	26.0%

Energy	
	Contribution to Overall ESG Score
Environment	51.0%
Biodiversity & Land Use	19.0%
Carbon Emissions	16.0%
Toxic Emissions & Waste	16.0%
Social	19.0%
Health & Safety	19.0%
Governance	30.0%
Corruption & Instability	16.0%
Corporate Governance	14.0%

Source: MSCI ESG Research, June 2016. For illustrative purposes only.

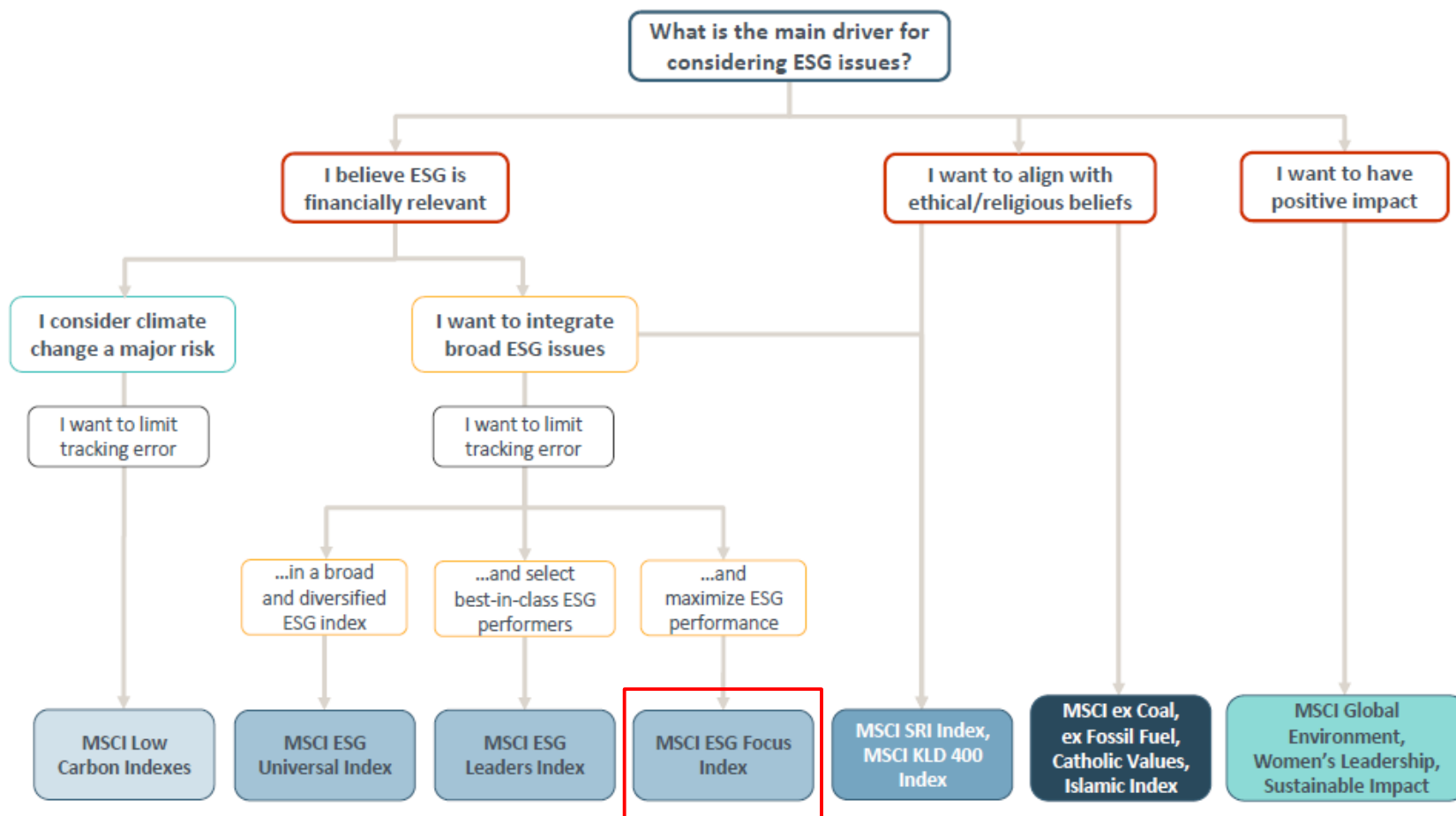
III. ESG in Retirement Plans

Top sustainability-related challenges clients are looking to solve

Client Objective	BlackRock Solution
<p>I am concerned about headline risks in my portfolio</p>	<ul style="list-style-type: none"> • Avoid companies and industries that are involved in controversial businesses or are undergoing controversies through implementing BlackRock's recommended Baseline screens
<p>I am looking to mitigate exposure to climate risk</p>	<ul style="list-style-type: none"> • Avoid companies and industries most exposure to climate risks by implementing an ex Fossil-Fuels or ex-Thermal Coal approach • Advance companies that have lower emissions and underweight companies that have higher emissions with a Low Carbon strategy.
<p>I want to invest in a sustainable solution, but cannot take on much active risk and do not want to disrupt my current allocations</p>	<ul style="list-style-type: none"> • Advance companies with higher ESG scores by investing in an ESG Optimized solution that seeks to track a traditional index as well as increase the portfolio's overall ESG profile
<p>I want to integrate positive impact outcomes in my public portfolio without sacrificing returns</p>	<ul style="list-style-type: none"> • Advance debt issuers that are addressing specific environmental outcomes through Green Bonds strategies
<p>I want to invest in the UN's Sustainable Development Goals (SDGs), such as climate action</p>	<ul style="list-style-type: none"> • Advance companies that offer products and services that addresses one of the UN's sustainable development goals through a Sustainable Impact strategy • Target specific SDGs², such as climate action through investments in Renewable Power.

²SDG: UN Sustainable Development Goals
For illustrative purposes only and should not be interpreted as investment advice or recommendation.

Choosing an ESG Index: Common Investor Considerations



Source: MSCI and BlackRock as of 3/31/18

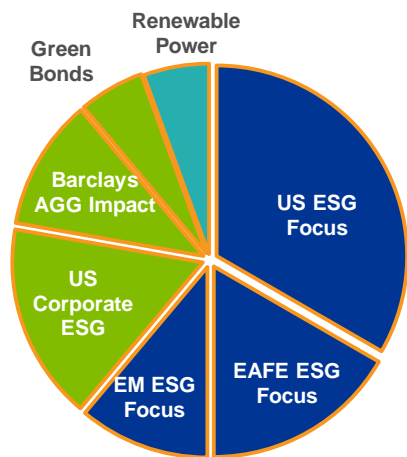
For illustrative purposes only. There is no guarantee that a positive investment outcome will be achieved. It is not possible to invest directly in an index.

Incorporating sustainable investment strategies

Clients incorporate sustainable strategies into their overall investment program in various ways:

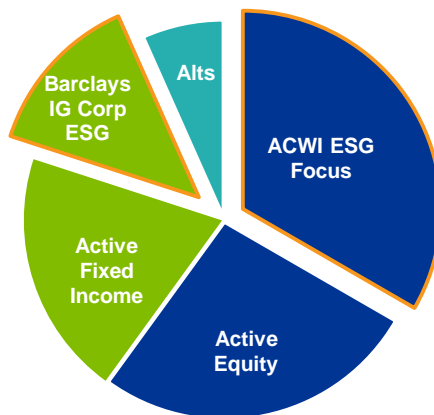
Broad allocation

Take total portfolio view on sustainability



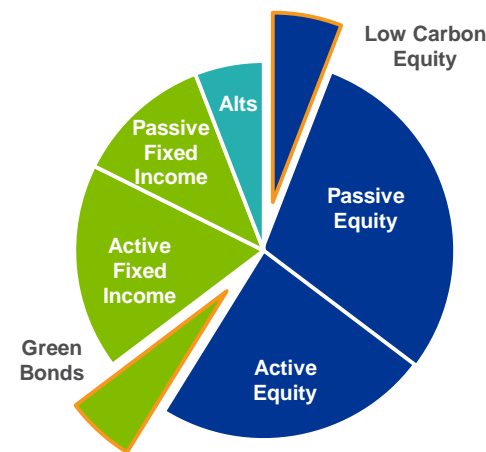
Index replacement

Substitute traditional passive solutions with sustainable investments



Carve out

Allocate a portion of an asset class to sustainable investments



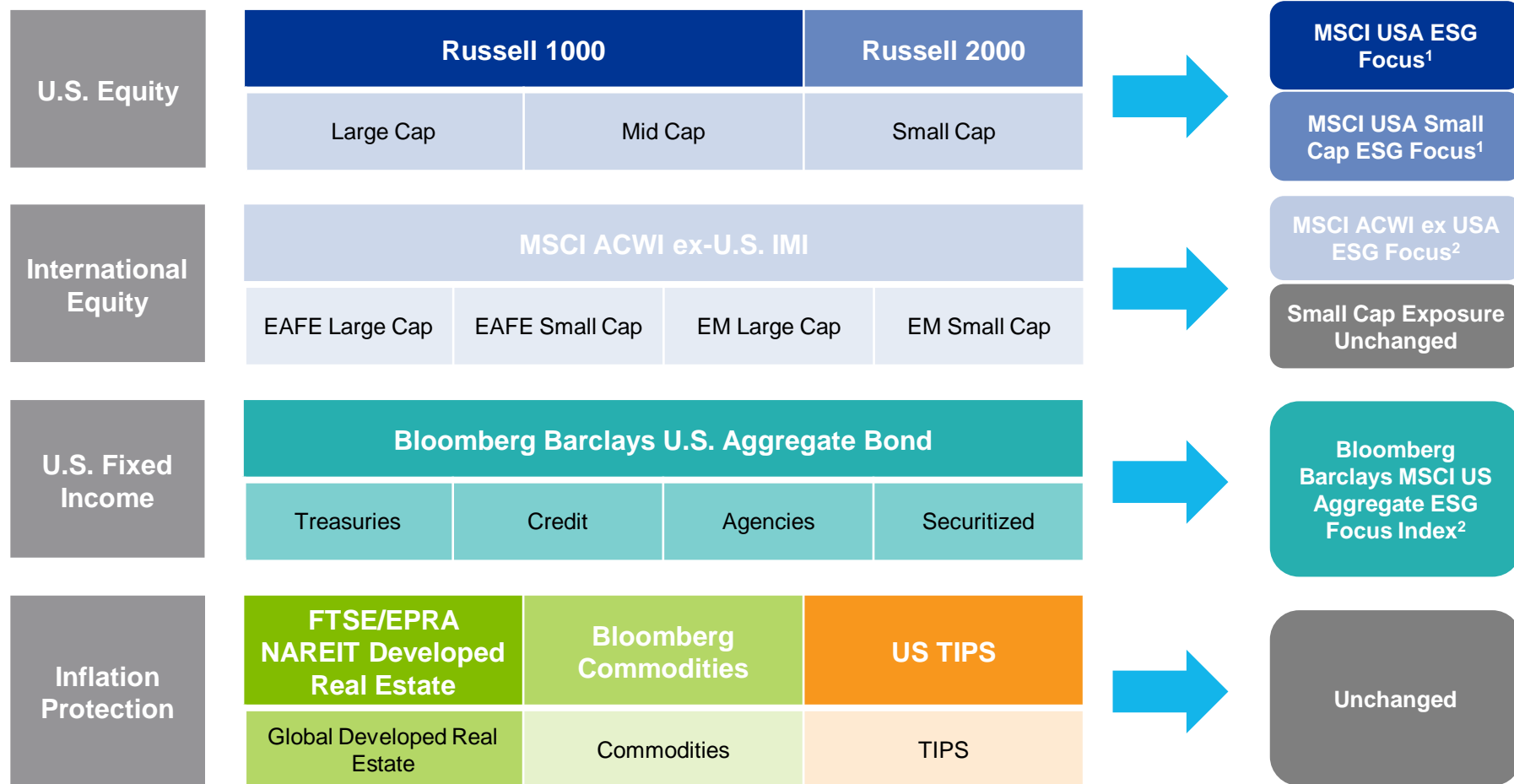
Key considerations in building a sustainable investment portfolio:

- 1) **Know what you own** by using risk and sustainability metrics (e.g., ESG ratings, carbon emissions, sustainable sectors)
- 2) **Set objectives** e.g., reduce carbon exposure, integrate ESG, target impact
- 3) **Take action & evaluate** by implementing sustainable investments and re-assessing risk and sustainability performance

Asset allocations are shown for illustrative purposes only

Target Date Asset Classes – ESG

Replacing traditional market-cap weighted exposures with ESG indices



1. Live ESG indices

2. ESG Index under development

For illustrative purposes only. Based on LifePath suite's strategic asset allocation. Additional or fewer asset classes may be available depending on specific LifePath vehicles.

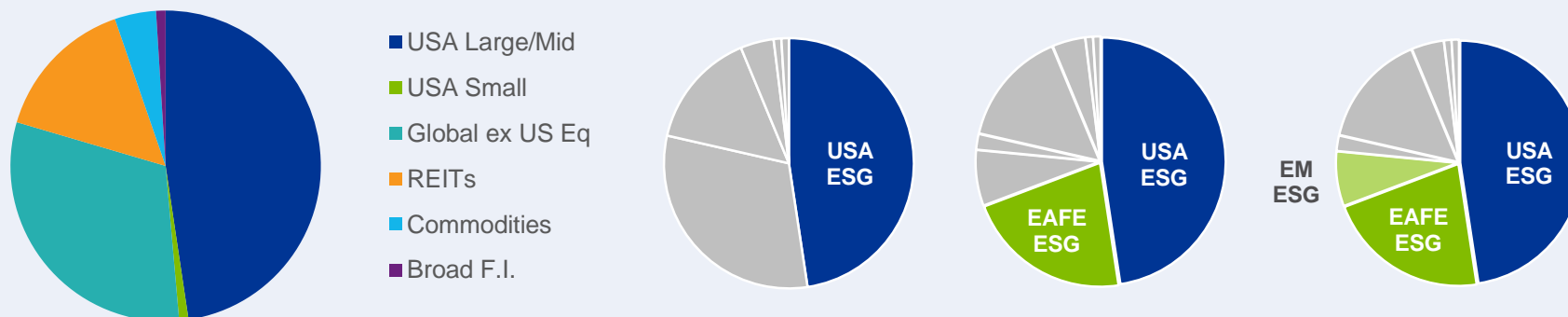
Putting it into practice: Defined Contribution

We partner with our clients to develop innovative investment solutions

CASE STUDY

US Corporation considering implementing ESG in a target date structure

- **Background:** US corporation with a commitment to sustainability and a younger work force considered offering target date fund that utilizes ESG building blocks. The investment objective is to: 1) Offer competitive risk adjusted returns relative to traditional target date funds, and 2) Demonstrate improved ESG ratings profile relative to traditional target date funds
- **Analysis:** BlackRock ran an analysis of existing index target date strategy leveraging equity and fixed income building blocks that optimize for ESG factors.
- **Proposed Solution:** Results indicated that plan participants could potentially realize financial results in line with the traditional index strategy while improving the ESG score of their investments



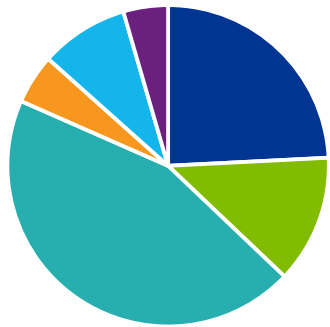
	Example Target Date Fund	USA ESG	USA + EAFE ESG	USA + EAFE + EM ESG
MSCI ESG Score	5.0	5.84	6.13	6.25
MSCI ESG Letter Score	BBB	A	A	A
ESG score potential % increase		+16.80%	+22.60%	+25.0%

Source: BSI Analysis, as of April 2018. The above represents BlackRock's observations and analysis process in proposing solutions to introduce ESG factors in a target date strategy. It should not be assumed that these solutions were implemented and if implemented were actually successful. Source: BlackRock, MSCI. MSCI ESG scores are on a numerical scale of 0-10, which is mapped to a 7 -point letter rating scale of CCC (worst) to AAA (best) and are based on 37 ESG key issues as determined by MSCI. Assessments for each company's ESG performance is relative to the standards and performance of its industry peers. Case studies are for illustrative purposes only. They are not meant as a guarantee of any future results or experience, and should not be interpreted as advice or recommendation.

Putting it into practice: Financial Advise

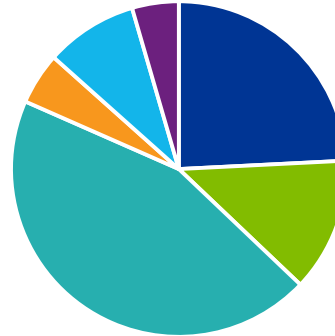
BlackRock building blocks help client develop solutions for clients with ESG interest

Case Study: Hypothetical Portfolio



- MSCI Europe Index
- MSCI EM Index
- MSCI USA Index
- MSCI Pacific ex-Japan Index
- MSCI Japan Index
- MSCI Canada Index

Case Study: Hypothetical Portfolio

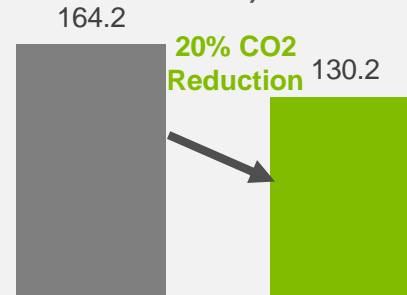


- MSCI Europe SRI Index
- MSCI EM SRI Index
- MSCI USA SRI Index
- MSCI Pacific ex-Japan Index
- MSCI Japan SRI Index
- MSCI Canada Index

*ESG building block exposure

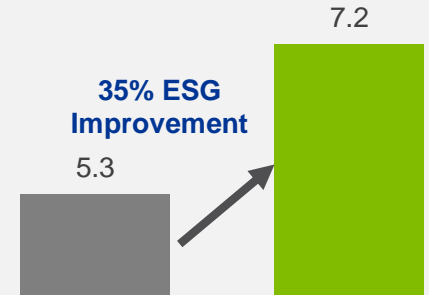
	Market Cap	ESG
Annualized Return	13.96	13.88
Annualized St. Dev	12.98	12.73
Sharpe Ratio	1.04	1.07

Carbon Emissions Intensity (Mt CO2/Sales)



Market Cap ESG

Portfolio ESG Rating (0-10)



Market Cap ESG

*Last updated and available information to 30/09/16 in EUR. For illustrative purposes only.

Indexes are unmanaged and one cannot invest directly in an index.

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