

ESG matters — now more than ever

Environmental, Social and Governance considerations are not optional for investors. Our primer provides quantitative evidence that incorporating ESG into one's investment approach can enhance returns and reduce risk. We examine equity market sectors in the US, Asia and Europe to help investors pick the best pockets of ESG performance.

Why? A litany of corporate ESG scandals

ESG analysis can help you steer clear of the meltdowns. Just this year, three out of the five biggest chairperson/ CEO resignations in US were related to E, S or G scandals. And in the last five years, corporate ESG blunders have destroyed more than half a trillion dollars of market cap in the US market alone. In Asia, 73% of companies with credit downgrades over the last five years had below-median ESG scores.

Making sense of the Wild West

Like "value" and "growth", ESG investing can mean a lot of different things, and corporates and investors are still figuring out what to disclose or pay attention to. To make sense of the morass of data, we use a financial, rather than ethical, lens to determine which ESG attributes are most important for returns and risk. We get granular: we assessed the predictive power of company employee training programs; data privacy; compensation practices; toxic emissions and 500+ other ESG metrics for global stocks.

A sea-change in US corporate responsibility

181 of US CEO's say companies are responsible to more than shareholders – they must also invest in employees, protect the environment and deal fairly and ethically with their suppliers. Knowing which ones talk the talk and which walk the walk will be a significant performance differentiator, as our research suggests that corporate responsibility drives operating results. ESG metrics are the strongest predictors of earnings risk we have found, and they have systematically signaled stronger ROE.

Europe is way ahead in the ESG game

The level of interest in ESG investing in Europe may be a harbinger of things to come in other regions. The rise of eco-political parties in power in Europe, a swell of Millennials and "green" investors looking to invest with impact, and 10 years of persistent outperformance from higher-rated ESG stocks have driven a groundswell of European investor awareness. We estimate that ESG-oriented EU funds could rise by EUR800-1,100bn by 2030, and expect one in three funds to be ESG-focused by then. Our analysis of 500+ ESG funds also sheds light on where investors focused on ESG find the best opportunities.

Governance is king in Asia

Board structure, compensation set-up, accounting policy and voting rights are meaningful ESG contributors to financial performance in Asia for all sectors of the market. Consumer companies addressing their carbon footprint and packaging waste signaled up to 5% higher future ROE, as well as significantly lower earnings and price volatility. Asian Banks which score highly for having independent board members, gender diversity and strong investment in human capital have shown 2%-5% higher future ROE and have about 5%- 6% lower price volatility than the bottom 50% MSCI ESG performers.

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Refer to important disclosures on page 12 to 13.

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Equity and Quant Strategy
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Environmental, Social and Governance

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This is a redacted version of our ESG primer published on 8 November 2019. BofA Merrill Lynch clients can access the full report through their BofA Merrill Lynch representative.

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What is ESG?

ESG stands for Environmental, Social and Governance (ESG).

ESG investing captures the notion of using non-financial factors that incorporate the environmental impact (E), social impact (S) and governance attributes (G) of a corporation. Another related vein of investing is **Thematic Investing**, which delves into themes that impact the global economy/investment landscape and are often environmental or social in nature (climate change, education, obesity, etc.) **“Green” investing** is another related category, focusing explicitly on companies that better the environment by employing/supporting “green” initiatives like clean energy, resource conservation, etc. In this report, we focus on the first aspect (**ESG investing**). The signals we examine can help evaluate whether companies run themselves responsibly. We consider environmental impacts (such as emissions or resource use), social impacts (such as employee training or diversity policies), and governance attributes (such as board structure or shareholder rights).

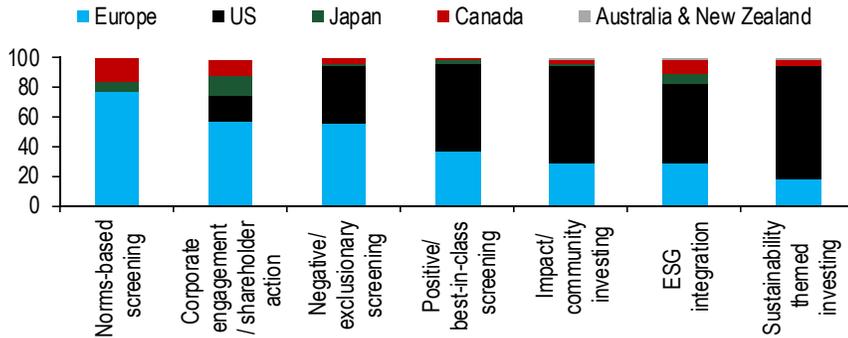
Exhibit 1: Types of ESG investing strategies

Best in class/positive screening	• Investment in sectors, companies or projects selected from a defined universe for positive ESG performance relative to industry peers
Corporate engagement and shareholder action	• Employing shareholder power to influence corporate behavior through direct corporate engagement (i.e. communicating with senior management and/or boards of companies), filing or co-filing shareholder proposals, and proxy voting that is guided by comprehensive ESG guidelines
ESG integration	• The systematic and explicit consideration by investment managers of environmental, social and governance factors into financial analysis
Impact investing	• Targeted investments aimed at solving social or environmental problems. Impact investing includes community investing, where capital is specifically directed to traditionally underserved individuals or communities, or financing that is provided to businesses with a clear social or environmental purpose.
Negative/exclusionary screening	• The exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria.
Norms-based screening	• Screening of investments based on compliance with international norms and standards such as those issued by the OECD, ILO, UN and UNICEF; may include exclusions of investments that are not in compliance with norms or standards or over and underweighting.
Sustainability themed investing	• Investment in themes or assets that address specific sustainability issues such as climate change, food, water, renewable energy, clean technology and agriculture

Source: Global Sustainable Investment Alliance

Europe leads in the norms-based screening among the regions in sustainable investing. However within the region negative/exclusionary screening (for example, excluding controversial weapons and tobacco companies) remains the most popular, despite its waning popularity. ESG integration and corporate engagement and shareholder action are seeing growth compared with the previous surveys. According to the 2018 Global Sustainable Investment review survey results, the top markets are in the UK, France and Italy. UN Global Compact dominates the norms-based screening, while sustainability thematic screening is balanced in its split.

Chart 1: Europe leads in norms-based screening type of sustainable investing globally



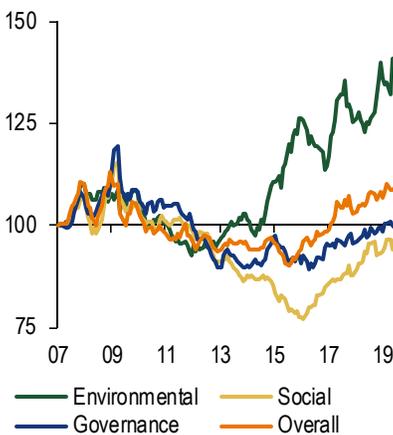
Source: Global Sustainable Investment Alliance – 2018 Global Sustainable Investment Review 2012/2014/2016/2018

Why ESG matters

ESG can help create excess returns

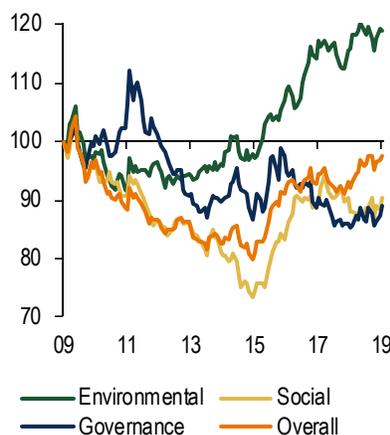
In US, ESG has been a particularly effective signal of alpha (excess returns) over the past five years, potentially driven by the explosive asset growth and inflows into ESG type strategies. Companies with high (top quintile) ESG ranks have outperformed their counterparts with lower (bottom quintile) ESG ranks by at least 3ppt during the time period, based on all three data providers we cover in this section.

Chart 2: Relative performance of S&P 500 companies in top vs. bottom quintile by MSCI ESG scores
1/2007-8/2019



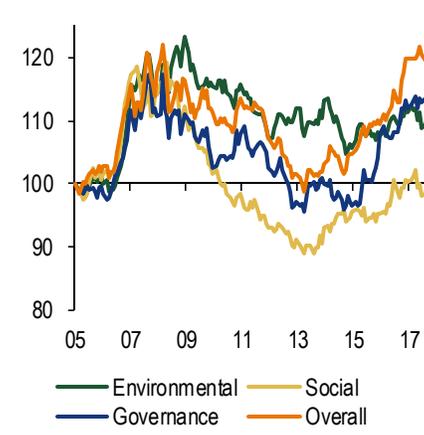
Source: MSCI ESG Research LLC, FactSet, BofA Merrill Lynch US Equity & Quant Strategy
This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

Chart 3: Relative performance of S&P 500 companies in top vs. bottom quintile by Sustainalytics ESG scores
8/2009-8/2019



Source: Sustainalytics, FactSet, BofA Merrill Lynch US Equity & Quant Strategy
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Chart 4: Relative performance of S&P 500 companies in top vs. bottom quintile by Refinitiv ESG scores
12/2005-8/2019



Source: Refinitiv, FactSet, BofA Merrill Lynch US Equity & Quant Strategy
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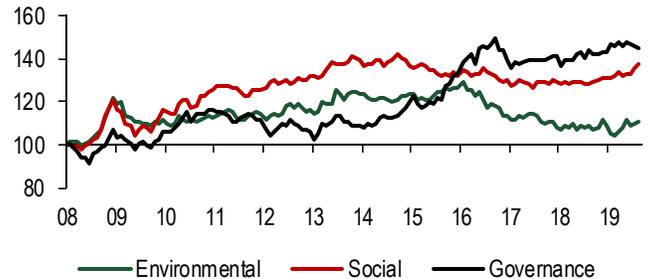
In Europe, companies with the higher overall ESG score outperformed those with the lower ESG scores during the backtesting period (Dec '07 till Aug '19). On average they would have provided 4% annualized return. Within the pillar scores we find more variability. Companies scored higher on Governance and Social score would have outperformed their lower counterparts the most during the backtesting period, while environmentally higher scored companies would have outperformed their lower scored counterparts but with a muted trend.

Chart 5: MSCI Overall ESG score: backtested highest scored (Q1) stocks performance relative to lowest scored (Q5) stocks (Europe)



Source: MSCI ESG Research LLC, FactSet, BofA Merrill Lynch European Equity Quant Strategy; This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. The strategy indicated as MSCI Overall ESG score: highest scored (Q1) relative to lowest scored (Q5) above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Merrill Lynch Global Research. This strategy was not created to act as a benchmark.

Chart 6: MSCI pillar ESG scores: backtested highest scored (Q1) stocks performance relative to lowest scored (Q5) stocks (Europe)



Source: MSCI ESG Research LLC, FactSet, BofA Merrill Lynch European Equity Quant Strategy; This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. The strategies indicated as MSCI pillar ESG score: highest scored (Q1) relative to lowest scored (Q5) above are intended to be an indicative metrics only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Merrill Lynch Global Research. These strategies were not created to act as benchmarks.

Backtesting disclosure:

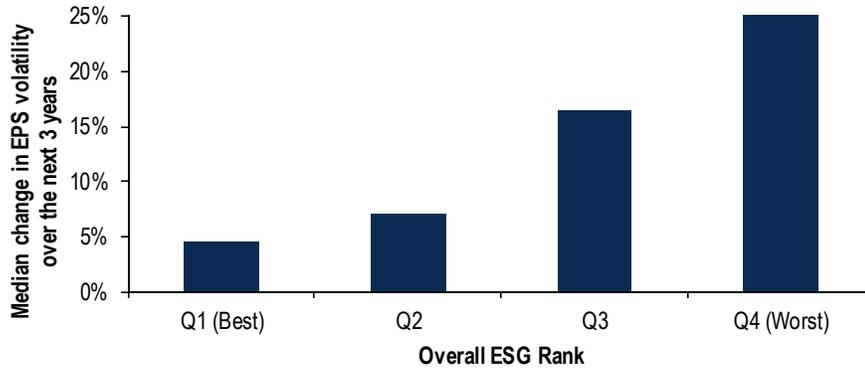
The analysis of MSCI ESG scores in this report is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the hypothetical backtested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will likely differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. There are frequently sharp differences between backtested returns and the actual returns realised in the actual management of a portfolio. Backtested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Backtested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximise the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Backtested returns do not reflect advisory fees, trading costs, or other fees or expenses.

Best signal of earnings risk

In the US, ESG is the best measure we've found for signaling future earnings risk, and is superior to leverage or other risk and quality factors.

Chart 7: Best signal of future earnings risk: worse ESG ranks signaled more earnings deterioration (US)

Median change in 3-yr EPS volatility of S&P 500 companies over subsequent three years based on Refinitiv Overall ESG score from 12/2005-12/2015 (with volatility through 12/2018)



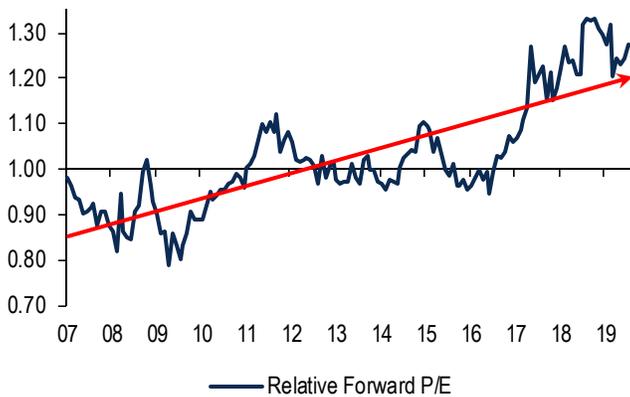
Source: Refinitiv, BofA Merrill Lynch US Equity & Quant Strategy
Based on the S&P 500 universe

Lower cost of capital

Just like consumers have credit scores, companies pay different rates depending on their risk profiles. For US companies, the cost of debt for “good” versus “bad” companies based on MSCI ESG scores can be nearly 200bp. Similarly, valuation multiples (forward price-to-earnings ratio) for “good” companies rose from historically as low as a 20% discount to a 20% premium — effectively lowering the cost of capital.

Chart 8: Multiple re-rating lowers the cost of capital for companies with high ESG scores (US)

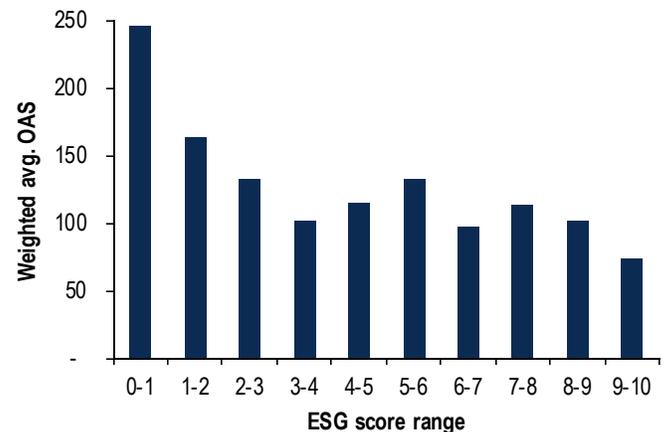
Relative forward P/E of S&P 500 companies in top vs. bottom quintile by MSCI ESG score (1/2007-8/2019)



Source: MSCI ESG Research LLC, BofA Merrill Lynch US Equity & Quant Strategy

Chart 9: Companies with higher ESG scores tend to enjoy lower cost of capital (US)

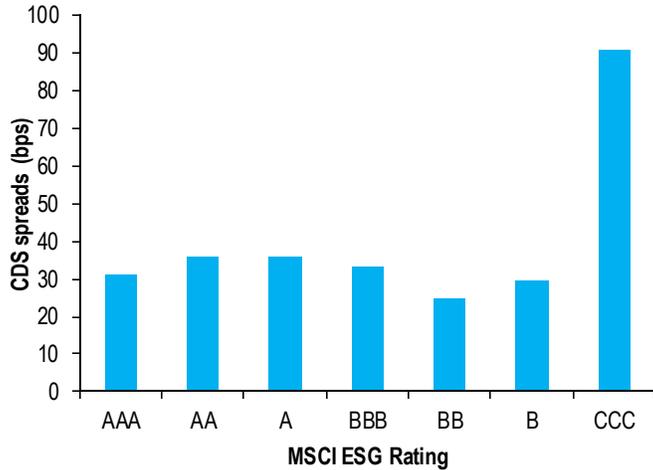
Weighted average option-adjusted spread (OAS) vs. MSCI ESG scores of S&P 500 companies as of 8/31/2019



Source: MSCI ESG Research LLC, BofA Merrill Lynch US Equity & Quant Strategy

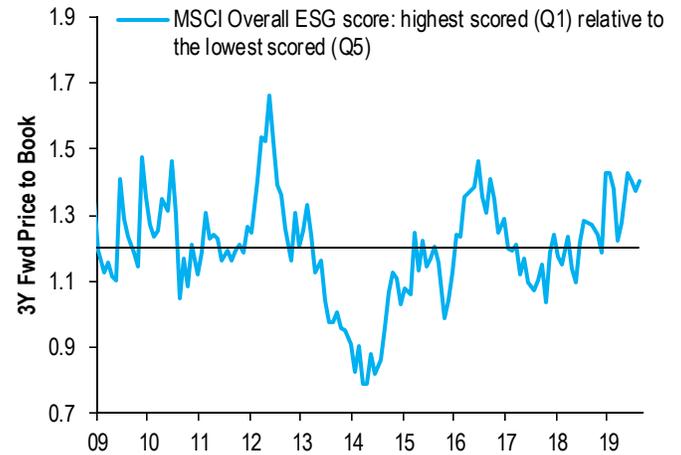
In Europe, MSCI ESG AAA-rated ESG stocks have a third of cost of credit protection than CCC-rated ESG stocks by MSCI. Moreover, the top quintile of ESG-rated stocks on average has traded at 20% premium to bottom quintile ESG-rated stocks over the past 10 years.

Chart 10: Lower MSCI ESG rating points to higher 5Y CDS spreads in Europe (as of Sep '19)



Source: MSCI ESG Research LLC, Bloomberg, BofA Merrill Lynch European Equity Quant Strategy

Chart 11: European companies with highest MSCI Overall ESG score (Q1) are on average more expensive than those with lowest score (Q5)



Source: MSCI ESG Research LLC, FactSet, BofA Merrill Lynch European Equity Quant. Strategy; Q1 denotes the top quintile, while Q5 refers to the bottom quintile of the scored companies. This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

Chart 12: Valuation premium of MSCI APAC stocks with the highest MSCI overall ESG scores (Q1) relative to stocks with the lowest scores (Q5)

Based on median forward P/E



Source: MSCI ESG Research LLC, Factset. This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. The strategy indicated as MSCI Overall ESG score: highest scored (Q1) relative to lowest scored (Q5) above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Merrill Lynch Global Research. This strategy was not created to act as a benchmark.

In Asia, the valuation premium (forward P/E spread) of stocks with the highest ESG scores vs. their counterparts with the lowest scores rose from 1-2x in the past to 5x today.

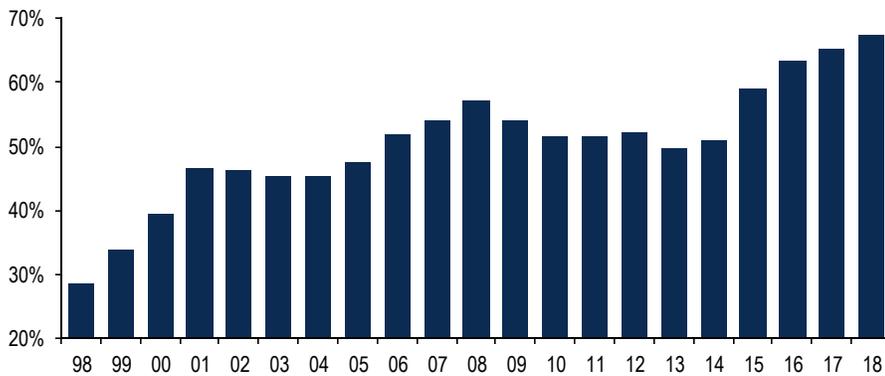
Growing intangible assets

In our view, analyzing stocks using non-fundamental attributes might be even more important for stocks across regions than ever, and the S&P 500 asset transparency is at an all-time low, based on the intangible assets-to-book value ratio going back to 1998. Growth in intangible assets – which include items like brand equity and intellectual property – suggest that a more diverse evaluative framework is paramount.

Asset transparency in the US is at a 20-year low: S&P 500 intangible assets have gone from less than 30% of book value in 1998 to 68% in 2018. In Europe and Asia, intangible assets as % of companies' book value has similarly grown substantially over the last two decades.

Chart 13: Asset opacity in the US is at an all-time high

S&P 500 intangible assets as a percent of book value, 1998-2018

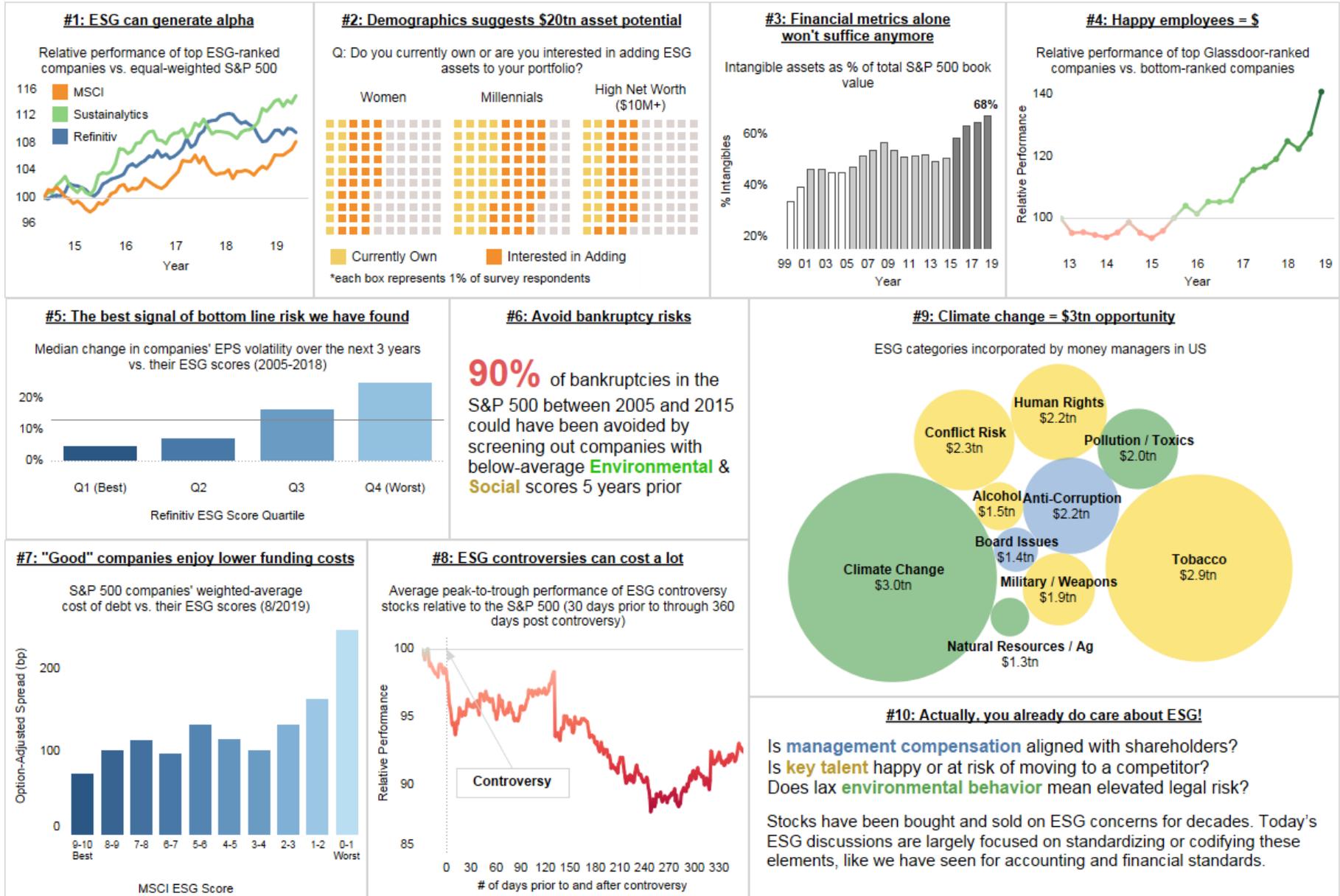


Source: FactSet, BofA Merrill Lynch US Equity & Quant. Strategy

10 reasons you should care about Environmental, Social and Governance (ESG)

Exhibit 2: 10 reasons you should care about Environmental, Social and Governance (ESG)

10 Reasons You Should Care About Environmental, Social and Governance (ESG)



Source: BofA Merrill Lynch US Equity & Quant Strategy, MSCI ESG Research LLC, Sustainalytics, Refinitiv, FactSet, ThinkNum, US SIF, 2018 U.S. Trust Wealth and Worth Survey

Global sector implementation guide

What we did: we drilled down to more granular levels of ESG data and split the universe of stocks in the sector into halves based on each ESG metric: above vs. below median score per sector (we used halves instead of quintiles due to the limited number of companies within some sectors). We then analyzed the spread and consistency of above-median companies outperforming below-median companies in terms of future return on equity and earnings risk (volatility). The factors that have historically been the most effective signals of future return on equity and earnings risk for companies within each sector are highlighted below:

Table 2: ESG signals that have been the most effective signals of future return on equity

Sector	US	Europe	Asia
Communication Services	S: Privacy & Data Security, Product Responsibility G: Corruption & Instability, Corporate Social Responsibility (CSR) Strategy	E: Carbon Emissions, Toxic Emissions & Waste S: Labour Management G: Business Ethics, Anti-Competitive Practices, Corporate Governance	G: Board structure, Compensation, Audit, Voting, Fraud
Consumer Discretionary	G: Gender Diversity, ESG Reporting / CSR Strategy S: Opportunities in Nutrition and Health, Chemical Safety, Workforce	E: Raw Material Sourcing, Toxic Emissions & Waste, Carbon Emissions S: Product Safety & Quality, Health & Safety, Human Capital Development, Supply Chain Labour Standards G: Corruption & Instability, Corporate Governance	G: Board structure, Compensation, Audit, Accounting, Voting, Diversity, Fraud, E: Packaging material waste, Green buildings, E-waste S: Supply chain labour
Consumer Staples	S: Health & Safety, Temporary Workers, Human Rights G: Animal Testing, CSR Strategy, Management E: Emissions / Waste, Renewable Energy Use	E: Product Carbon Footprint, Packaging Materials & Waste S: Opportunities in Nutrition and Health, Health & Safety, Labour Management, Chemical Safety G: Anti-Competitive Practices, Corporate Governance	G: Board structure, Audit, Voting, Cross shareholdings, Fraud E: Packaging material waste, Water stress S: Product safety
Energy	S: Health & Safety, Labor Management E: Emissions, Environmental Innovation	E: Water Stress, Carbon Emissions, Biodiversity & Land Use, Toxic Emissions & Waste S: Labour Management, Health & Safety G: Corruption & Instability, Corporate Governance	G: Compensation, Accounting
Financials	S: Labor Management, Society & Community Incidents G: Political Involvement Policy, Governance Incidents, Shareholder Rights	E: Toxic Emissions & Waste, Carbon Emissions S: Insuring Health & Demographic, Labour Management G: Financial System Instability, Corporate Governance, Corruption & Instability	G: Board structure, Compensation, Accounting, Voting, Diversity S: Human capital development
Health Care	G: Anticompetitive Practices, Business Ethics Incidents, Committee Independence S: Privacy & Data Security, Labor / Human Capital Management	E: Carbon Emissions, Water Stress, Toxic Emissions & Waste S: Access to Healthcare, Health & Safety, Labour Management G: Corruption & Instability, Corporate Governance	G: Board structure, Compensation, Audit, Accounting, Voting, Diversity E: Clean tech S: Human capital
Industrials	E: Biodiversity & Land Use, Emissions S: Supply Chain Labor Standards, Community, Workforce Health / Safety / Training	E: Toxic Emissions & Waste, Water Stress, Opportunities in Clean Tech S: Health & Safety, Labour Management	G: Board structure, Compensation, Audit, Accounting, Voting, Fraud E: Raw materials sourcing S: Human capital development, Privacy and data security
Information Technology	G: Business Ethics and Fraud, Board Diversity / Independence, Shareholder Rights S: Supply Chain Management / Standards	E: Opportunities in Clean Tech S: Human Capital Development, Labour Management G: Corporate Governance	G: Board structure, Compensation, Audit, Accounting, Voting, Diversity, Fraud S: Human capital development, Supply chain labour
Materials	E: Raw Material Sourcing, Emissions, Environmental Supply Chain Incidents, Environmental Innovation S: Health & Safety, Employee Training	E: Water Stress, Toxic Emissions & Waste, Carbon Emissions, Opportunities in Clean Tech S: Health & Safety, Labour Management G: Corruption & Instability	G: Compensation E: Packaging material waste
Real Estate	E: Sustainable Financial Initiatives / Products and Services S: Health & Safety, Working Conditions Policy, Labor Management, Community	Included in Financials sector	G: Compensation, Audit, Voting E: Financing for environment impact, Clean tech
Utilities	G: Business Ethics and Fraud, Political Involvement Policy E: Opportunities in Renewable Energy, Environmental Fines & Penalties, Resource Use, Emissions / Waste	E: Toxic Emissions & Waste, Water Stress, Biodiversity & Land Use S: Human Capital Development, Labour Management, Health & Safety G: Corporate Governance	G: Board structure, Compensation, Audit, Voting, Diversity E: Renewable energy S: Product safety

Source: MSCI ESG Research LLC, Refinitiv, Sustainalytics, BofA Merrill Lynch Global Research

Table 3: ESG signals that have been the most effective signals of future earnings volatility

Sector	US	Europe	Asia
Communication Services	E: Resource Use, Opportunities in Clean Tech S: Human Capital Development, Supply Chain Standards	E: Carbon Emissions, Toxic Emissions & Waste S: Access to Communications G: Anti-Competitive Practices	G: Board structure, Compensation, Audit, Accounting, Voting, Diversity, Fraud E: Raw materials S: Product safety
Consumer Discretionary	S: Product Safety / Quality / Responsibility, Supply Chain Standards, Workforce / Society & Community Incidents E: Raw Material Sourcing, Resource Use, Emissions	E: Raw Material Sourcing, Toxic Emissions & Waste, Water Stress S: Product Safety & Quality, Chemical Safety, Privacy & Data Security, Health & Safety, Human Capital Development, Supply Chain Labour Standards G: Corporate Governance	G: Board structure, Compensation, Audit, Accounting, Voting, Risk, Fraud E: Green building, Water stress, E-waste, Clean tech S: Privacy and data security
Consumer Staples	E: Packaging Material & Waste, Green Supplier / Outsourcing Logistics S: Supply Chain Labor Standards, Health / Chemical Safety	E: Product Carbon Footprint, Packaging Materials & Waste, Carbon Emissions, Toxic Emissions & Waste S: Opportunities in Nutrition and Health, Health & Safety, Labour Management, Supply Chain Labour Standards, Chemical Safety G: Corporate Governance Issue	G: Board structure, Audit, Accounting, Voting, Risk, Controlling shareholders, Fraud E: Clean tech, Water stress S: Health and safety
Energy	E: Biodiversity & Land Use, Oil Spill Disclosure & Performance, Emissions, Environmental Innovation, Opportunity in Clean Tech	E: Water Stress, Carbon Emissions S: Health & Safety G: Corruption & Instability	G: Compensation, Audit, Accounting, Diversity
Financials	G: Compensation Policy, Anticompetitive Practices, Business Ethics and Fraud, Shareholder Rights S: Product Safety / Quality, Community, Responsible Marketing	E: Financing Environment Impact, Toxic Emissions & Waste, Opportunities in Green Building, Carbon Emissions, Climate Change Vulnerability, Water Stress S: Insuring Health & Demographic, Labour Management, Product Safety & Quality G: Financial System Instability, Corporate Governance	G: Board structure, Compensation, Accounting, Voting, Diversity, Related Party Transactions, Cross Shareholdings E: Clean tech
Health Care	G: Business Ethics and Fraud, Clinical Trial Standards S: Human Capital Development, Product Safety, Human Rights, Privacy & Data Security	E: Carbon Emissions, Water Stress, Toxic Emissions & Waste S: Access to Healthcare, Health & Safety, Human Capital Development, Labour Management G: Corruption & Instability	G: Board structure, Compensation, Audit, Accounting, Voting, Risk, Cross shareholdings, Fraud E: Clean tech
Industrials	E: Raw Material Sourcing, Carbon Emissions, Waste Intensity, Environmental Fines & Penalties S: Chemical Safety, Health and Safety Management	E: Toxic Emissions & Waste, Water Stress, Carbon Emissions S: Health & Safety, Labour Management G: Corporate Governance	G: Compensation, Audit, Accounting, Voting, Diversity, Fraud, Bankruptcy E: E-waste S: Supply chain labour, Human capital development, Privacy and data security
Information Technology	G: Corruption & Instability, Disclosure, Shareholder Rights S: Supply Chain Standards, Data Privacy Policy, Human Rights	E: Toxic Emissions & Waste S: Human Capital Development, Labour Management, Privacy & Data Security	G: Board structure, Compensation, Audit, Accounting, Voting, Fraud S: Human capital development, Supply chain labour
Materials	E: Water Stress, Toxic / Carbon Emissions, Waste, Environmental Innovation	E: Biodiversity & Land Use, Water Stress, Toxic Emissions & Waste, Carbon Emissions, Opportunities in Clean Tech S: Health & Safety, Labour Management G: Corruption & Instability	G: Board structure, Accounting, Voting, Risk E: Raw material sourcing
Real Estate	E: Biodiversity & Land Use, Opportunities in Green Building, Waste G: Anticompetitive Practices, Business Ethics Incidents	Included in Financials sector	G: Board structure, Compensation, Controlling shareholders E: Financing for environment impact, Green buildings S: Supply chain labour, Product safety
Utilities	E: Opportunities in Renewable Energy, Water Intensity, Emissions / Waste S: Labor Management, Health & Safety, Corporate Foundation	E: Toxic Emissions & Waste, Water Stress, Carbon Emissions, Opportunities in Renewable Energy S: Human Capital Development, Labour Management, Health & Safety G: Corporate Governance	G: Board structure, Compensation, Audit, Accounting, Voting, Diversity

Source: MSCI ESG Research LLC, Refinitiv, Sustainalytics, BofA Merrill Lynch Global Research

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