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ESG Matters (Part II)

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Summary

- **High-ESG + High-EVA Margin Companies Add Alpha**

- **Rising ESG Correlated with Improving Fundamentals**

- **ESG Trending Up**

- **Environmental Considerations Becoming More Important for Investors**

Introduction

ESG – Environment, Social, and Governance – has gone mainstream. According to the ISS Market Intelligence Asset Management Industry Market Sizing Report, ESG Funds were among the largest winners in 2020, taking in a record $60 billion in net flows, nearly triple their 2019 total. The CFA Institute's position on ESG integration states that one should consider all material information, which includes material ESG factors. Governments and regulations are also pushing this effort. The EU Taxonomy Regulation entered into force in July 2020 and establishes the conditions that an economic activity has to meet to be qualified as environmentally sustainable. Furthermore, in March the EU Sustainable Finance Disclosure Regulation (SFDR) went into effect for financial institutions, requiring disclosure on how ESG factors are part of the investment decision processes and products. Governments are also investing in this effort. The UN's Sustainable Development Goals (SDGs) cover 17 areas. The EU's recovery plan is focused on environmentally-friendly initiatives, and US President Biden's The American Jobs Plan includes investments in the environment. While the Baby Boomers and the Silent Generation tend not to be overly interested in ESG, the mid-life decision-makers and leaders of tomorrow (the younger generations) have high and growing interest. In September 2019, the Wall Street Journal reported that 78% of high net-worth Millennials have reviewed their portfolios for ESG impact, and there was also a growing interest from Generation X (63% for 39- to 54-year olds, up from 36% in 2013). The huge growth in ESG assets under management is perhaps explained by these factors plus the favorable relationships between ESG and returns examined in this paper.

There are three main tactics used in ESG investing. First, it can entail avoiding certain industries. Second, it may involve investing in areas to make an impact. Given these tools, some people may fear that ESG investing will lower returns by limiting the universe of stocks. However, this paper shows that ESG can be used in a third way with added benefits.

Figures 1 and 2: ESG Performance Has Been Rising While the Gap Between High and Low-EVA Margin Companies Has Widened
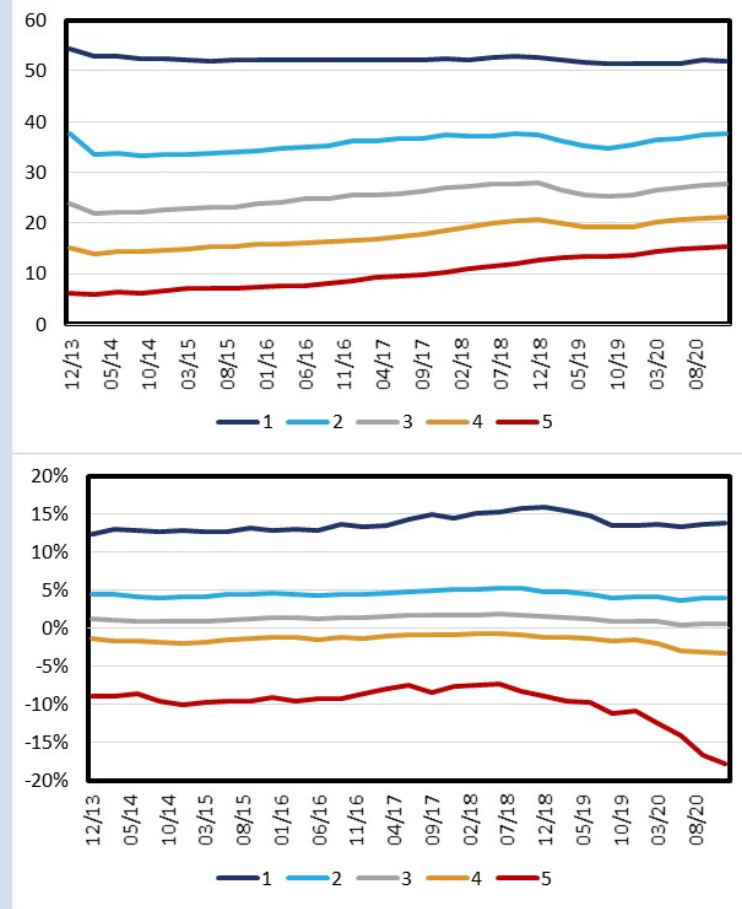
Source: ISS ESG Corporate Rating data and ISS EVA (Investor Express).

Notes: Medians for GICS sector-neutral sorts are shown. 1-5 are quintiles for sorts on ESG Performance (figure 1) and EVA Margin (figure 2), where 1s are best. The data for the sorts includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications.

Definitions: ESG Performance can range from 0 to 100 based on ISS's proprietary model. EVA = Economic Value Added = the value a company adds to the original investment in capital = net operating profit after taxes (what one earns on capital) less WACC * capital (a charge on capital based on the weighted average cost of the capital). EVA Margin scales EVA to sales for comparison across companies (EVA Margin = EVA / sales).

Data and Other Important Comments

ESG Performance is from Institutional Shareholder Services' (ISS) ESG Corporate Rating data, EVA metrics are from ISS EVA Investor Express, and return data and other non-EVA financial data are from FactSet.

For the majority of the backtests, data begins at the end of 2013 and runs through December 2020 for companies throughout the world greater than or equal to $250 million in market cap. This included 1,972 securities in 12/31/2013 and 5,259 at 12/31/2020.

Unless otherwise stated, securities are sorted within GICS (Global Industry Classification System) sectors.

ISS ESG Corporate Rating data for ESG Performance (with score ranges from 0 to 100) includes over 800 indicators, with approximately 90% industry specific. Weights for E, S, and G pillars are dependent on the industry. For each industry, five key issues, representing more than 50% of the overall rating, are identified. On occasion, this paper reviews individual E, S, and G factors and the related combined ESG rating. These ratings utilize a different scale; however, the overall ESG "rating" and the ESG "Performance" score discussed above are still highly correlated.

Cross-Sectoral Indicators (Extract)	Environment	Social	Governance
	• Energy Management	• Equal Opportunities	• Board Independence
	• Climate Change Strategy	• Health and Safety	• Shareholder Democracy
	• Water Risk and Impact	• Human Rights	• Business Ethics
	• Environmental Impact of Products	• Suppliers	• Payments to Governments

Industry-Specific Indicators (Examples)	Oil, Gas and Consumable Fuels	Automobile
	• Access to sustainable energy	• Strategy regarding new mobility concepts
	• Environmentally safe operations of facilities	• CO2 emissions of passenger cars
	• Reduction of gas flaring	• Alternative drives and fuels
	• Pipeline integrity and safety management	• Security of electronic systems

Incorporating ESG and EVA (or Economic Value Added) into the investment process may improve returns. While it is important to not be too confident since ESG data is only available for a short period for this and other studies, the results imply that being good to the world is consistent with higher returns and improving ESG is also related to rising fundamentals (profitability, growth, etc.). Perhaps these results also make sense.

A firm may benefit from good performance under each of the E, S, and G in ESG. In addition to pressure from the younger generations to focus on the environment (E), perhaps being good to the environment reduces regulatory headaches (lost time and cost) and improves customer loyalty. Think about all the products and services Google (YouTube and a robust search engine), Amazon (Amazon Prime movies), Microsoft (Microsoft Teams), and Netflix (many movie options) give consumers (S) for free or at a minimal cost. These successful companies have loyal customers who return again and again. Employees (S) who are happy may be more productive, and lower turnover reduces costs. A key to

Higher ESG may lead to higher sales and lower costs through:

- Higher customer loyalty
- Lower regulatory costs and management distraction
- Increased employee morale and productivity
- Better supplier relations
- Better aligned management with shareholders for long-term value creation

success is being aware of what can go wrong – the risks – and from a behavioral perspective, having a more diverse workforce (S) should produce a better dialogue for decisions. Suppliers (S) that are partners may provide discounts and invest to be even better. Managers who are aligned with shareholders (G) may be more likely to act in their best *long-term* interests.

Figure 1 above shows ESG performance for global companies sorted within sectors. The good ESG companies have maintained their high scores, while those at the bottom are improving. Perhaps this has been influenced by interest from investors, governments, and employees themselves. At the same time, Figure 2 shows that the difference between strong and weak EVA Margin firms weak is rising, and this paper provides evidence that high-EVA Margins are associated with winning stocks and improving ESG is positively related to improving EVA Margin.

Investing with a Focus on ESG and EVA Adds Alpha, and a Combination Improves Returns Even More

ESG measures how a firm is taking care of society (E and S) and shareholders (G), and EVA Margin measures a firm's true profitability (see "Don't Be Fooled by Earnings, Trust EVA," "(EVA) Profitability Drives Value," and "How EVA Can Enhance DCF and PE Analysis"). Investing based on the merits of ESG and EVA Margin leads to outperformance (Figures 3 and 4).

Figures 3-4: Screening for Both ESG and EVA Margin Generates Alpha
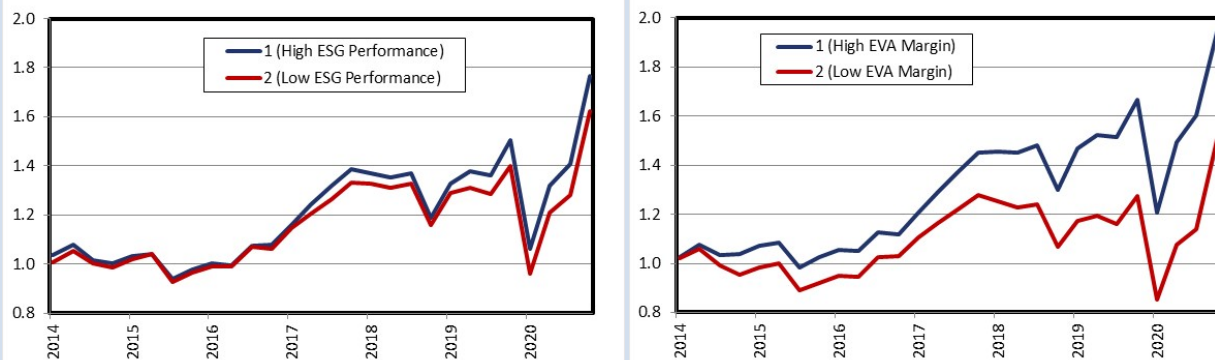
Source: ISS ESG Corporate Rating, and ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Securities are sorted within GICS sectors every three months. The 1s refer to the top quintile of the sorts of the ESG Performance and EVA Margin. Data is from December 31, 2013 through December 31, 2020. The data for the sorts includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications.

Figure 5 shows that combining ESG with EVA is even better. 1-1s in Figure 5 are high-ESG Performance and high-EVA Margin stocks, 1-2s are high-ESG Performance and low-EVA Margin securities, 2-1 stocks have low ESG Performance and high-EVA Margin, and 2-2s are low-ESG Performance and low-EVA Margin companies. The 1-1s are up 100%, higher than the 1s in Figure 3 (up 77%) and Figure 4 (up 94%). Also, the 2-2s have lower cumulative returns (up 42%) than the 2s in Figures 3 (up 62%) and 4 (up 50%).

Figure 6 shows the annual returns from fractiling stocks into quintiles. Panel A shows returns and Panel B the standard deviation of returns. "Northwest" is best! As one moves higher to the top-left for ESG and EVA Margin from the bottom-right corner, returns climb, but risk as measured by volatility declines. The forward 12-month

return for the five-way sort is highest at 7.6% for the highest-ESG Performance/highest-EVA Margin companies, and the lowest return, -1.2%, is for the lowest-ESG Performance/lowest-EVA Margin stocks. In every ESG quintile, high-EVA Margin firms outperform low, and similarly, in three of five EVA quintiles, high-ESG Performance outperforms low and in the other two quintiles the returns are close. Furthermore, while not perfect as the highest risk is the "northeast" combination, higher returns tend *not* to be associated with higher risk. Still, the Sharpe ratio (not shown) tends to be higher as one moves northwest, and the highest Sharpe ratio is for the 1-1s and lowest is for the 5-5s. See Appendix 1 for 5X5 fractile results for various regions of the world; ESG and EVA investing works best in the US.

> **Good-ESG firms with high EVA Margin are winners.**

Figures 5-6: High-ESG and high-EVA Margin Firms Have Higher Returns and Lower Risk

> **There is a "free lunch" – higher returns for lower risk.**
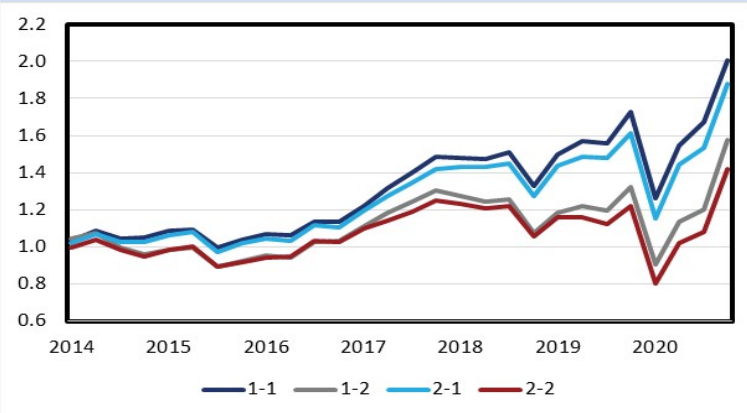
ESG Perfor-mance	Panel A						Panel B						Panel C	
	12-Mo Returns (%)						Standard Deviation (%)						Median Value	
	EVA Margin						EVA Margin						EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All		
1	7.6	6.0	3.5	0.9	1.4	3.8	10.8	12.2	12.6	14.4	17.0	13.1	0.010	52.1
2	7.0	5.3	5.5	2.4	4.5	5.0	12.0	12.0	13.2	14.3	14.4	12.7	0.013	36.1
3	5.4	5.2	3.3	2.4	2.9	3.7	12.1	10.9	12.7	13.2	13.8	12.2	0.013	25.5
4	5.4	5.7	5.1	2.6	-0.5	3.7	12.1	10.9	10.3	13.1	16.0	12.0	0.014	17.2
5	3.9	4.6	3.9	1.3	-1.2	2.4	13.1	12.3	10.3	13.5	14.1	12.3	-0.015	9.6
All	5.8	5.4	4.3	2.0	1.4	3.7	11.6	11.5	11.7	13.3	14.4	12.3	0.012	25.5

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Securities are sorted every three months within GICS sectors. The cumulative returns in the graphs are geometrically derived. Equal-weighted annual returns are shown in the table. Data is from December 31, 2013 through December 31, 2020. The data for the sorts includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. 1s are high-ESG Performance and high-EVA Margin companies and 5s are low-ESG Performance and low-EVA Margin firms.

Each variable – environmental, social, and governance – appears to add to returns. Figures 7, 9, and 11 show the cumulative returns from investing in high versus low environmental, social, and governance factors, respectively. In each case, high outperforms low. Figures 8, 10, and 12 combine a screen for each factor – E, S, and G – with a screen for EVA Margin. Again, high environment, social, and governance each add to returns from a screen of just high-EVA Margin alone.

Figures 7-12: E, S, and G Each Add Alpha
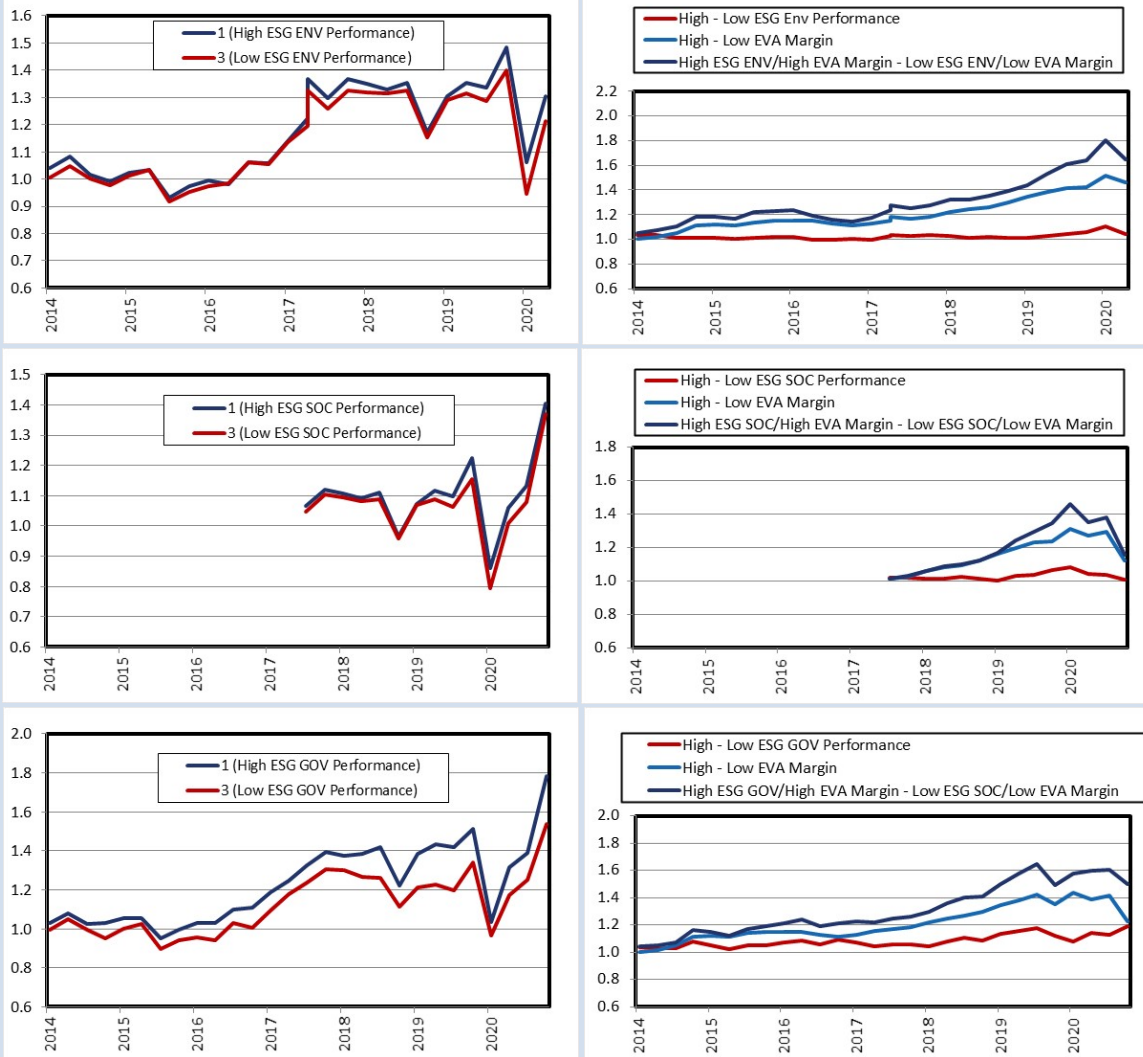
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Securities are sorted every three months within GICS sectors. The cumulative returns in the graphs are geometrically derived. Data is from December 31, 2013 through December 31, 2020 (social data since 6/30/2017). The data for the sorts includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. ENV = environmental, SOC = social, and GOV = governance.

Results are Not Driven by Outliers

To pass the test of whether an investment strategy works, the results must not be driven by outliers. That means it should work in most sectors, countries, time periods, and in more stocks than not, and if it does not outperform, then it must make sense (e.g., risk-on versus risk-off markets favor different factors). Combining ESG with EVA passes the tests (see Figures 13 and 14). Column 7 in Figure 14 shows the best fit information coefficients (ICs) of a multivariate regression of ESG Performance and EVA Margin with returns. The lowest IC for a sector IC is 0.13 – still decent – and the highest is a strong 0.29 for the energy sector which appears to have attracted a lot of attention from an ESG (and/or EVA) perspective. Next in line is utilities (tied with real estate), perhaps for the same reason. The IC for the universe is 0.12 (not sector neutral).

Figures 13-14: Results are Not Driven by Outliers

IC determines the size of the bubble.

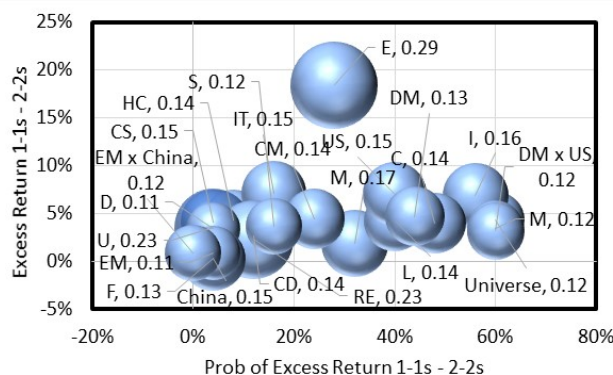|	1	2	3	4	5	6	7
		Excess Return	Probability Excess Ret.	Percent Outperform			
Sector		1-1s − 2-2s	1-1s − 2-2s	All	1-1s − 2-2s	1-1s - Area	IC
Universe		4%	60%	46%	4%	2%	0.12
Cyclicals		4%	48%	46%	3%	2%	0.14
Defensives		3%	4%	46%	4%	2%	0.11
Large		4%	40%	47%	2%	1%	0.14
Mid		3%	60%	46%	3%	1%	0.12
Small		4%	16%	45%	3%	2%	0.12
Communication Services		4%	24%	46%	3%	0%	0.14
Consumer Discretionary		3%	12%	45%	3%	2%	0.14
Consumer Staples		4%	4%	47%	3%	0%	0.15
Energy		18%	28%	47%	13%	6%	0.29
Financials		0%	4%	48%	-1%	0%	0.13
Health Care		4%	8%	46%	6%	3%	0.14
Industrials		7%	56%	47%	6%	2%	0.16
Information Technology		7%	16%	46%	3%	3%	0.15
Materials		2%	32%	43%	9%	6%	0.17
Real Estate		2%	12%	48%	-3%	0%	0.23
Utilities		3%	4%	47%	11%	4%	0.23
US		7%	40%	47%	6%	4%	0.15
DM		5%	44%	47%	2%	1%	0.13
DM x US		3%	60%	46%	1%	0%	0.12
China		0%	4%	43%	8%	5%	0.15
EM		1%	4%	43%	3%	2%	0.11
EM x China		1%	0%	43%	4%	2%	0.12

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Securities are sorted every three months within GICS sectors and 12-month forward returns are equal-weighted. Data is from December 31, 2013 through December 31, 2020. The data for the sorts includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. Cyclicals include consumer discretionary, energy, financials, industrials, information technology, and materials. Defensives include communications services, consumer staples, health care, real estate, and utilities. C = cyclicals, D = defensives, L = Large, M = Mid, S = Small, CM = communication services, CD = consumer discretionary, CS = consumer staples, E = energy, F = financials, HC = health care, I = industrials, IT = information technology, M = materials, RE = real estate, U = utilities, EM = emerging markets ex Kuwait (based on MSCI classifications), and DM = developed markets (based on MSCI classifications). Spearman information coefficients (ICs) are shown.

Returns are not driven by outliers.

Countries: High-ESG Performance/high-EVA Margin companies (1-1s) either outperform or match the performance of 2-2s in developed markets and emerging markets (the second column in Figure 14 shows the 12-month excess returns). The screen appears to work better in the US and developed markets than emerging markets and China, however. This may be due to the overall focus on ESG and higher profitability in developed markets as reflected in their higher median values than emerging markets (see Figure 15). The median ESG performance for the universe is 25.5 and the median EVA Margin is 1.2%. Clearly, the US is the most profitable (EVA Margin of 2.5%) and it also has moderate ESG (22.8). Thus, it looks like profitability and ESG may matter for US firms, which may be why the screen works best in this region. On the other hand, it does not work as well in China and emerging markets ex China. China is moderately more profitable than the median of the universe at 1.5%, but it has the lowest median ESG performance (10.7). Emerging markets excluding China have slightly lower ESG Performance (20.2) and are just below the median EVA Margin at 1.1%. The screen works well in developed markets excluding the US despite its low EVA Margin of 0.8%, but this region also has the highest median ESG score (29.5).

Sectors: Except for financials where alpha is 0%, the high-ESG Performance/high-EVA Margin stocks (1-1s) outperform the 2-2s on a 12-month basis (second column of Figure 14). The best sector is energy at 18% alpha.

Time Periods: The third column of Figure 14 shows the difference between the percent of the 12-month periods the 1-1s outperform the universe versus the percent of periods the 2-2s outperform. 1-1s have a 60% better track record than the 2-2s across the entire universe, and have a better batting average for every sector and region except emerging markets excluding China (0%). For the universe, 1-1s outperformed the 2-2s in 84% of the rolling 12-month periods, but Figures 16 and 17 illustrate that the outperformance is somewhat countercyclical. This is mostly due to EVA Margin (Figures 20 and 21) where investors rotate to more profitable companies during poor economic environments and market conditions. The 84% of periods where 1-1s beat 2-2s compares with 73% for just the EVA Margin variable and 65% for ESG Performance alone.

Figure 15: EVA Margin is Highest in the US and ESG Performance is Highest in Developed Marks Outside the US

Region	ESG Performance	EVA Margin
Universe	25.5	1.2%
US	22.8	2.5%
China	10.7	1.5%
DM	27.3	1.2%
DM ex US	29.5	0.8%
EM	18.4	1.1%
EM ex China	20.2	1.1%

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020. Median values are shown. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. EM = emerging markets ex Kuwait (based on MSCI classifications), and DM = developed markets (based on MSCI classifications).

Stocks: 46% of the stocks in the universe outperform the equal-weighted 12-month return (top of Column 4 of Figure 14). In addition, in the entire universe and every sector and division except financials and real estate, the batting average of the 1-1s is better than the 2-2s (Column 5).
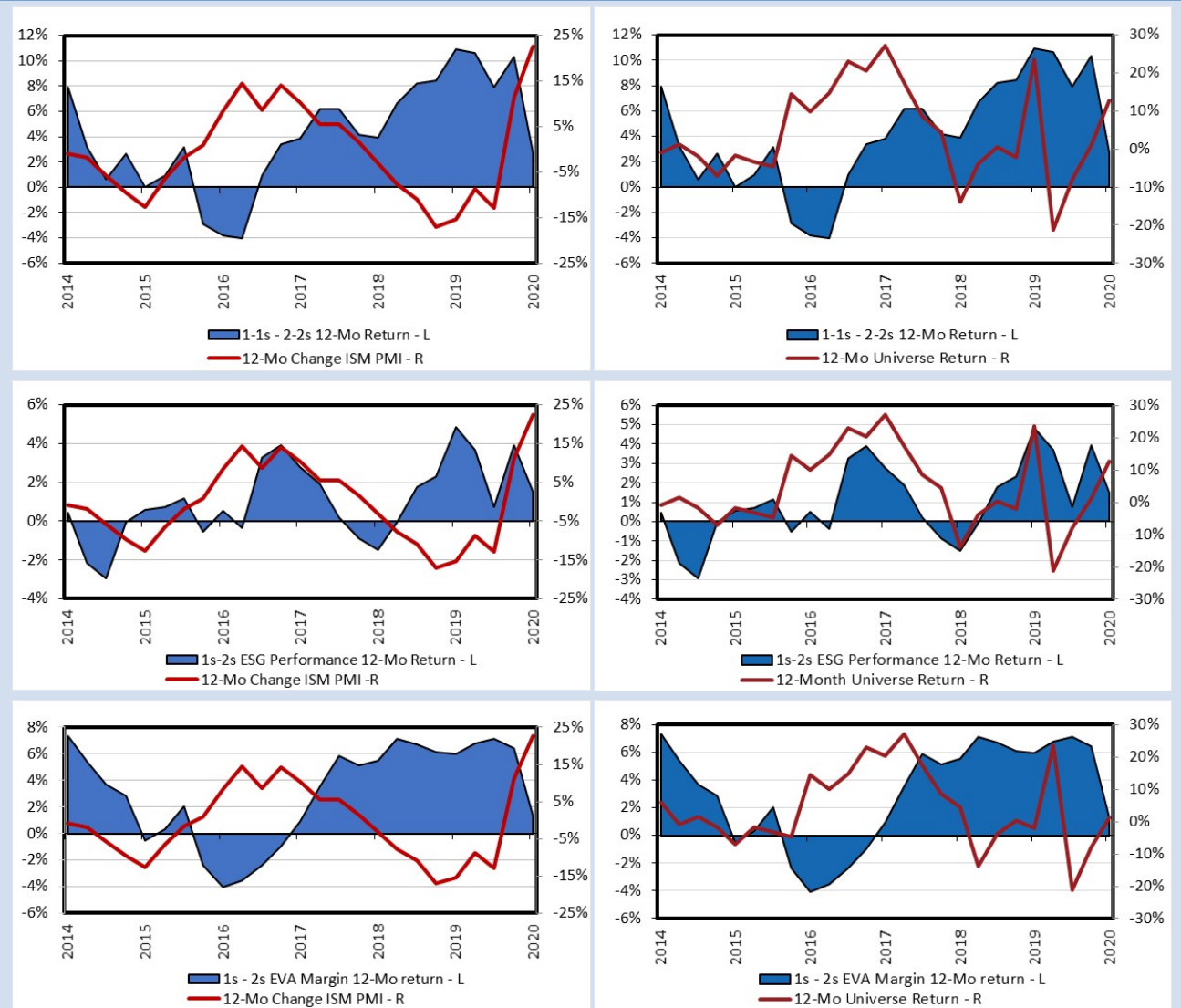
Figures 16-21: Efficacy is Somewhat Countercyclical

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), Institute of Supply Chain Management (ISM), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. Sector-neutral sorts are performed every three months, where 1s are high-ESG Performance and high-EVA Margin and 2s are low. 1-1s are those with both high-ESG Performance and high-EVA Margin, and 2-2s are companies with low rankings for both factors.

Rising ESG Correlated with Improving Fundamentals

Based on median values, the highest-ESG Performance companies are in the utilities sector followed by health care and then materials, and the lowest-ESG Performance sector is financials with real estate second to the bottom and communications services third worst (Figure 22).

You may be asking why the energy sector isn't poorly rated; isn't oil and gas dirty and adding to global warming? There are at least two reasons it is not rated low: (1) ISS ESG ratings include 90% industry-specific factors; and (2)

Utilities rank best and financials worst.

ESG considers social and governance factors in addition to environmental variables, and weights of E, S, and G vary based on the industry (see box on page 4).

Industry-Specific Variables

Each area has industry-specific variables (see box on page 4). As an example, for oil, gas, and consumable fuels, one of these variables is reduction of gas flaring. _The Wall Street Journal_ recently published an article on how flaring of excess gas produced with oil drilling in the United States' Permian Basin contributes to greenhouse gas emissions equivalent to six million cars. BP has been one of the worst for the proportion of gas burned in the Permian,

Figure 22: Utilities has the Highest ESG Rating
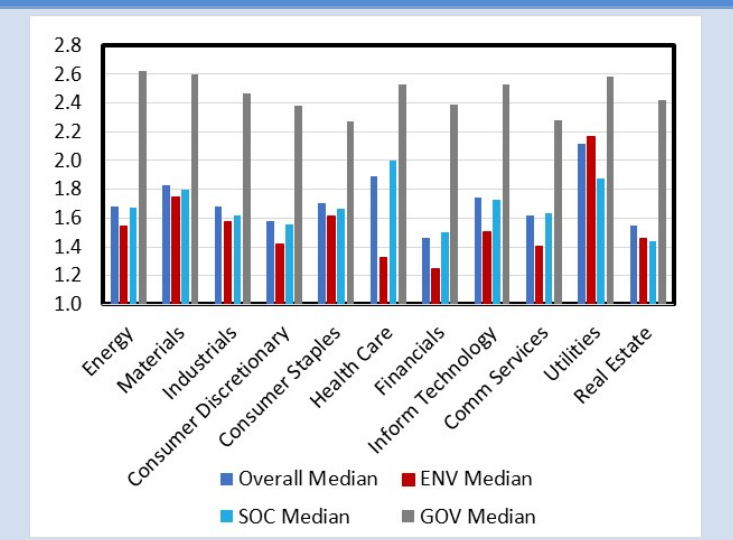
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Data is from December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. ENV = environment, SOC = social, and GOV = governance.

but it is also investing $1.3 billion to build a network of pipes and other infrastructure to reduce its flaring. BP has a 1.91 environmental score, which is above the sector result of 1.54 (12/31/2020), as it plans to reduce oil and gas production by 40% over the coming decade (from 2019 levels) with a 10-fold increase in low-carbon investment by 2030.

ESG is a Combination of E, S, and G

The energy sector has the best rating for governance with a median score of 2.62 (12/31/20). BP is even better at 3.07. Governance seems to have less influence on the overall ESG rating, however, as it has a lower correlation with the level and change in ESG than environmental and social factors (Figure 23).

Figure 23: Correlation of ESG with its Components

	Level					1-Year Change			
Universe	**ESG**	**ENV**	**SOC**	**GOV**	**Universe**	**ESG**	**ENV**	**SOC**	**GOV**
ESG	1.00				**ESG**	1.00			
ENV	0.92	1.00			**ENV**	0.75	1.00		
SOC	0.87	0.67	1.00		**SOC**	0.71	0.41	1.00	
GOV	0.50	0.33	0.39	1.00	**GOV**	0.41	0.18	0.27	1.00

Source: ISS ESG Corporate Rating and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Data is from December 31, 2013 through December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express database. ENV = environment, SOC = social, and GOV = governance.

Figures 24 to 31 show how 1-year change in ESG Performance (left graphs) and level of ESG Performance (right graphs) are related to profitability, growth, and valuation characteristics.

Figures 24-31: 1-Year Change in ESG Positively Related to Profitability and Growth
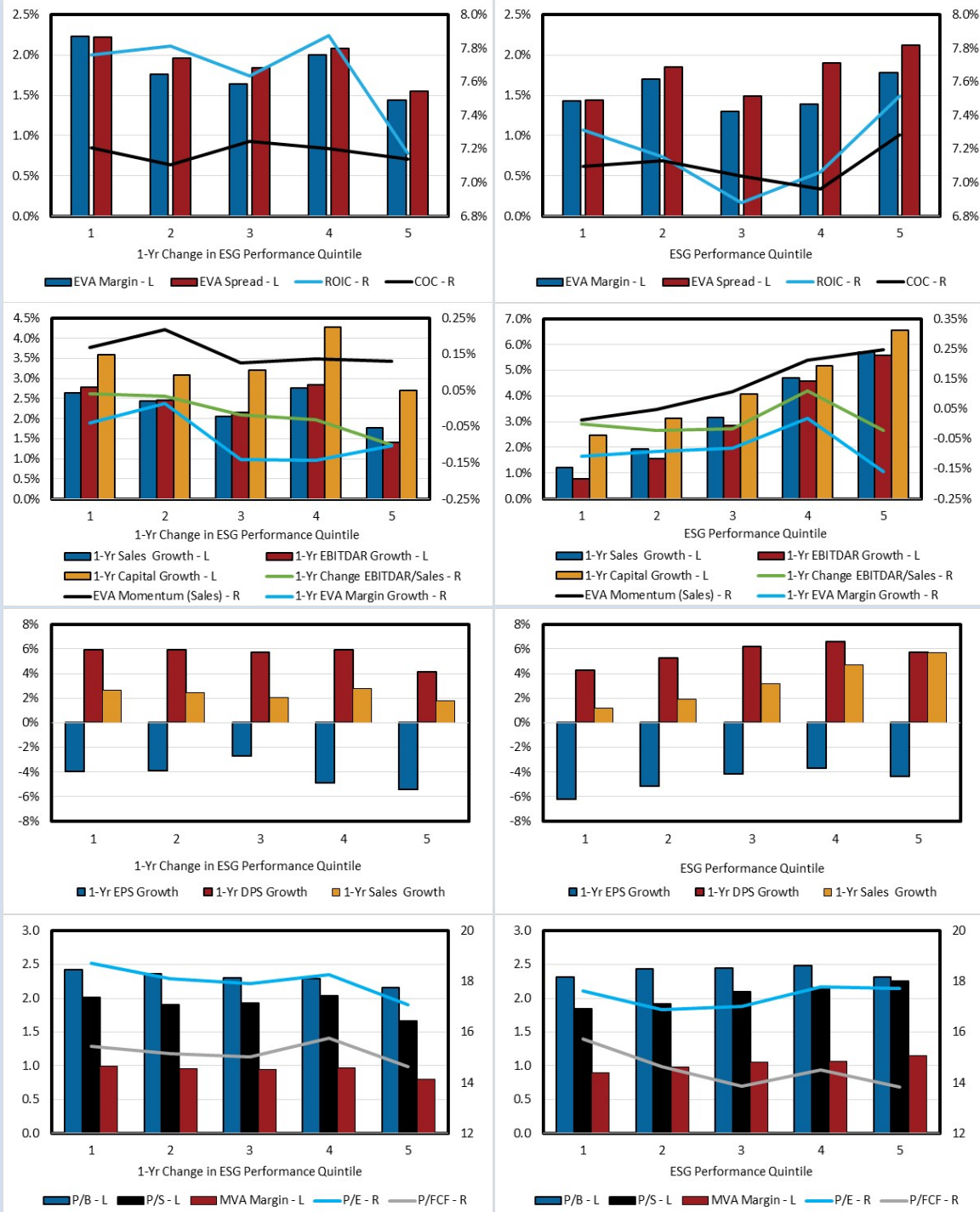
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020. Trimmed means are shown where 20% outliers are removed. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases. Sector-neutral sorts are used, where 1 is high 1-year change in ESG Performance (left graphs) and high-ESG Performance (right graphs) and 5 is low 1-year change in ESG Performance (left graphs) and low-ESG Performance (right graphs).

Change in ESG Performance (Figures 24, 26, 28 and 30): Improving profitability and growth is related to positive change in ESG Performance. Figure 24 shows that higher EVA Margin, EVA Spread, and return on invested capital are all associated with higher changes in ESG Performance. Data for 1s, or high 1-year change in ESG Performance, is higher than the 5s, or low 1-year change in ESG Performance. Annual change in sales, capital, EVA Margin, EVA (defined by EVA Momentum), EBITDAR (earnings before interest, taxes, depreciation, and rents), and EBITDAR/sales are all higher for the 1s than the 5s (Figure 26). Also, Figure 28 shows that sales, earnings, and dividend growth are also positively related to change in ESG Performance. Finally, Figure 30 illustrates the positive relationship between valuation multiples and change in ESG Performance.

> **Improving ESG is related to improving fundamentals.**

Level of ESG Performance (Figures 25, 27, 29 and 31): While improving ESG Performance is positively related to profitability, growth, and valuation, the level of ESG performance appears to be negatively related to these characteristics. Why? One possible explanation is that level of ESG is also related to size (Figure 32) which may bias results. Larger companies may have less room to grow (with the recent growth of companies such as Amazon, Apple, Microsoft, etc. being exceptions). On the other hand, larger firms may be more profitable (e.g., the profit margin of the large-cap S&P 500 is higher than the small-cap S&P 600). Note that the 1s and 2s for EVA Margin, ISS EVA's primary profitability metric, is about the same as the 4s and 5s, and a similar comparison can be made for ROIC (Figure 25). Furthermore, high-ESG companies tend to return more capital to shareholders – they have a higher dividend payout, dividend yield, and share buybacks (Figure 33) – which may help explain their solid stock performance (Figure 34).

Figures 32-34: Level of ESG is Positively Related to Size and Returning Capital to Shareholders
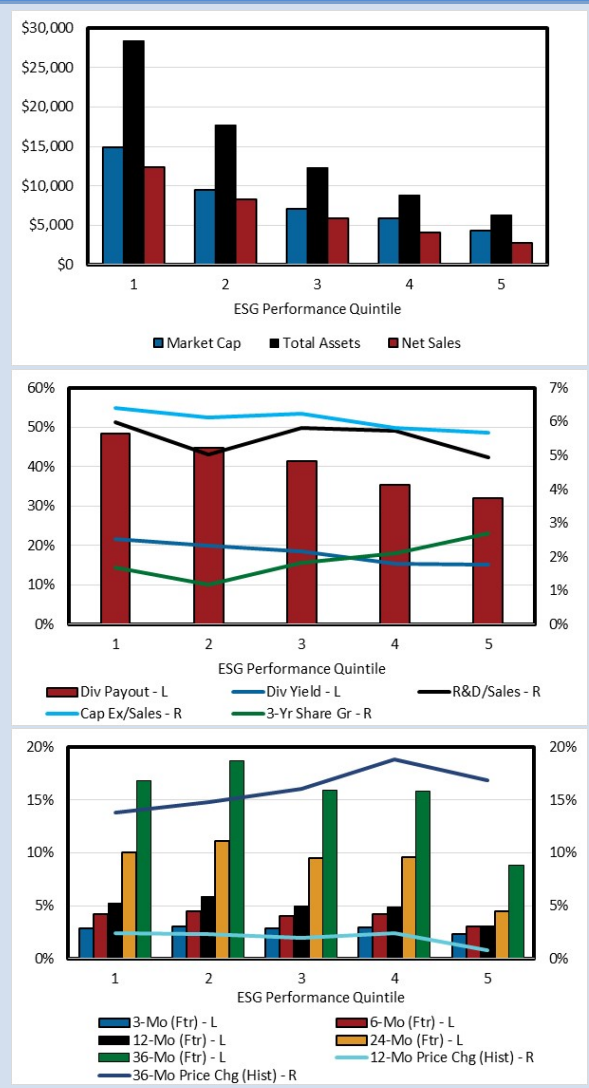
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020. Trimmed means are shown where 20% outliers are removed. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases. Sector-neutral sorts are used, where 1 is high-ESG Performance and 5 is low-ESG Performance (right graphs). Ftr = future and Hist = historical.

It is open for debate whether: (1) rising profits and growth leads to an ability to care for the world (environment, employees, customers, suppliers, and shareholders); or (2) caring for the world leads to rising profits and growth; or (3) both happen and feed on one another.

1. Continuing the earlier example, _The Wall Street Journal_ noted that smaller oil producers in the Permian are more likely to flare gas in the production of oil; private operators in the Permian accounted for 25% of the gas production in the second half of 2020, but 55% of wellhead gas flaring. These firms may not be able to profitably make significant investments in pipelines and infrastructure to remove gas produced with oil from their small operations. Remember, larger companies have higher ESG (Figure 32).

2. Maybe caring for the world results in higher profitability and growth – happy employees are more productive; happy customers may return and be a cheap source of advertising as they tell others about the firm; happy suppliers may be good partners; a happy government may lead to lower long-term environment costs which also leads to customer and employee loyalty and less management time dealing with regulations; and putting shareholders first may lead to wise cost and investment management.

3. Perhaps it is a combination? Rising profitability leads to the ability to invest in ESG initiatives which then leads to higher profitability and enables further ESG investments, and so on.

Whatever the case, it appears that rising ESG is consistent with rising profitability and growth, factors that are positively related to shareholder returns (Figure 35 shows that high _change_ in ESG is associated with higher returns during the _period of the change_, and recall that Figures 3, 5, and 6 show that _level_ of ESG Performance is related to _future_ performance as well).

Figure 35: Improving ESG Performance Correlated with Returns

1-Yr Chg ESG Perf	1-Yr Chg ESG Perf	ESG Perfor-mance	1-Yr EVA Growth	EVA Margin	1-Yr Total Return (Local)
High	4.83	31	-6.85%	1.88%	6.57%
Mid	0.36	28	-7.31%	1.47%	5.73%
Low	(1.11)	32	-7.64%	1.39%	5.63%
Spread	5.94	(0.09)	0.78%	0.49%	0.93%

Source: ISS ESG Corporate Rating and FactSet data. Back-tests are run with FactSet Alpha Testing. Notes: Data is from December 31, 2013 through December 31, 2020. Trimmed means are shown where 30% outliers are removed. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express database. Stocks are sorted within sectors based on 1-year change in ESG Performance.

Since ESG scores vary across sectors (Figure 22) and size also is related to the level of ESG (Figure 32), and sectors and size of companies may naturally vary in profitability, growth, risk, and valuation, it makes most sense to consider how change in ESG Performance, versus level of ESG Performance, is related to these characteristics.

Figures 36-39 show the correlation between 1-year change in ESG Performance and growth and profitability (Figure 36), ROE drivers (Figure 37), risk (Figure 38), and valuation (Figure 39). Change in ESG appears to be related to firms with higher profitability (EVA Margin, EBITDAR/sales, ROE, net margin); more leverage (assets to equity); and lower EVA Margin volatility (EVA Margin 60-month standard deviation), and it has mixed relationships with valuation (higher for MVA Margin, P/B, and P/E, but lower for P/S and P/FCF). While the correlations are low, they are generally in the right direction – being better to the world is good for shareholders – and the relationships are generally consistent throughout the world.

Figures 36-39: 1-Year Change in ESG Performance Correlation Differs Depending on Factor and Region

Figure 36 (top left)

	Universe	DM	DM x US	EM	EM x China	China	US
EVA Momentum (Sales)	0.01	0.01	0.01	0.00	-0.00	0.01	0.02
1-Yr Capital Growth	0.01	0.01	0.02	0.00	0.01	-0.05	-0.01
1-Yr DPS Growth	0.02	0.02	0.02	-0.01	-0.01	0.07	0.01
1-Yr EPS Growth	0.01	0.02	0.03	-0.01	-0.01	-0.00	0.00
1-Yr Sales Growth	0.02	0.03	0.03	0.01	0.01	0.05	0.02
1-Yr Chg EVA Margin	0.01	0.01	0.01	0.01	0.01	0.02	0.01
1-Yr Chg EBITDAR/Sa;es	0.01	0.01	0.01	-0.01	-0.02	0.05	0.02
EVA Margin	0.03	0.04	0.05	0.02	0.03	-0.04	-0.00
EBITDAR/Sales	0.07	0.09	0.10	0.03	0.03	-0.00	0.05

Figure 37 (top right)

	Universe	DM	DM x US	EM	EM x China	China	US
1-Yr Chg A/E Ratio	0.01	0.01	-0.01	0.02	0.02	-0.02	0.04
1-Yr Chg Asset T/O	0.02	0.02	0.03	0.02	0.03	-0.02	0.00
1-Yr Chg Net Margin before Xtro	0.01	0.02	0.04	-0.03	-0.02	-0.06	-0.01
1-Yr Chg ROE before Xtro	0.02	0.03	0.04	-0.00	0.00	-0.02	0.00
A/E Ratio	13	13	13	13	13	13	15
Asset T/O	-0.07	-0.08	-0.07	-0.02	-0.02	0.05	-0.09
Net Margin before Xtro	0.07	0.08	0.09	0.02	0.03	-0.02	0.05
ROE before Xtro	0.02	0.03	0.06	0.01	0.02	-0.02	-0.01

Figure 38 (bottom left)

	Universe	DM	DM x US	EM	EM x China	China	US
GOV Performance	0.03	0.03	0.03	0.07	0.07	0.02	0.02
SOC Performance	-0.01	-0.02	-0.03	-0.01	-0.04	0.15	0.04
ENV Performance	0.00	-0.00	-0.02	0.03	0.01	0.12	0.03
ESG Performance	25	25	25	25	25	25	25
6-Mo Price Change	0.00	0.01	0.01	-0.01	-0.01	0.00	-0.01
12-Mo Price Change	0.01	0.01	0.02	0.01	-0.00	0.04	-0.00
Market Cap	-0.01	-0.00	-0.02	-0.01	-0.01	0.05	0.04
1-Yr Cash Growth	0.01	0.02	0.02	-0.01	-0.00	0.05	0.01
1-Yr T Debt Growth	0.01	0.02	0.02	0.00	0.02	-0.15	0.02
COC	0.00	0.01	0.01	-0.03	-0.02	0.05	-0.01
EVA Margin (STD 60 Mo)	-0.05	-0.05	-0.06	-0.00	-0.01	0.01	-0.04

Figure 39 (bottom right)

	Universe	DM	DM x US	EM	EM x China	China	US
1-Yr Chg S/P	0.01	0.01	0.01	-0.00	0.00	-0.00	0.02
1-Yr Chg FCF/P	0.00	0.01	0.01	-0.02	-0.02	0.07	0.01
1-Yr Chg E/P	-0.00	0.00	0.01	-0.01	-0.02	0.04	-0.02
1-Yr Chg B/P	-0.00	-0.00	-0.00	-0.00	0.01	-0.07	-0.01
1-Yr Chg MVA Margin	0.00	0.00	-0.00	0.01	0.01	0.03	0.01
Div Yield	0.03	0.04	0.05	-0.01	-0.01	-0.02	0.04
S/P	-0.07	-0.08	-0.09	-0.02	-0.02	0.04	-0.07
FCF/P	0.01	0.01	0.00	0.01	0.01	-0.04	0.02
E/P	0.02	0.02	0.05	-0.01	0.01	-0.06	-0.01
B/P	-0.01	-0.00	-0.01	0.03	0.02	0.02	0.03
MVA Margin	0.04	0.05	0.05	0.02	0.01	0.11	0.05

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases. EM = emerging markets ex Kuwait (based on MSCI classifications), and DM = developed markets (based on MSCI classifications). Negative correlations have white-colored bubbles.

Growth (Figure 36): Change in ESG Performance is positively related to change in EVA Margin, change in sales, and EVA Momentum (i.e., EVA growth scaled to sales). Except for emerging markets as a total and emerging markets outside China, it is also positively related to dividend per share growth (DPS growth) and change in EBITDAR/sales. It has a mixed relationship with growth factors such as capital growth and EPS growth, but for the entire universe the correlation is still positive for these variables. This implies that improving ESG is consistent with growing firms.

ROE Drivers (Figure 37): For developed markets ex the US, ROE and each of its drivers move in the "healthy" direction with change in ESG; margins move up, asset turnover rises, and leverage (A/E) declines. On the other hand, each ROE driver and ROE overall are negatively correlated with change in ESG in China, and in the US, the correlation tends to be weak (about zero) except for leverage where it is the highest (0.04). One plausible reason that ESG is less correlated with healthy ROE drivers is that governance has the lowest correlation (0.50 or lower) of environment, social, and governance with ESG Performance itself (Figure 23). Figure 40 supports this theory as change in governance appears to be positively correlated with ROE and net margin in China, but it is still about zero correlated with ROE drivers in the US. Perhaps this is because governance scores are higher in the US than other regions of the world (see Figures 41 and 42) and improvements off an already high level don't have much of an impact.

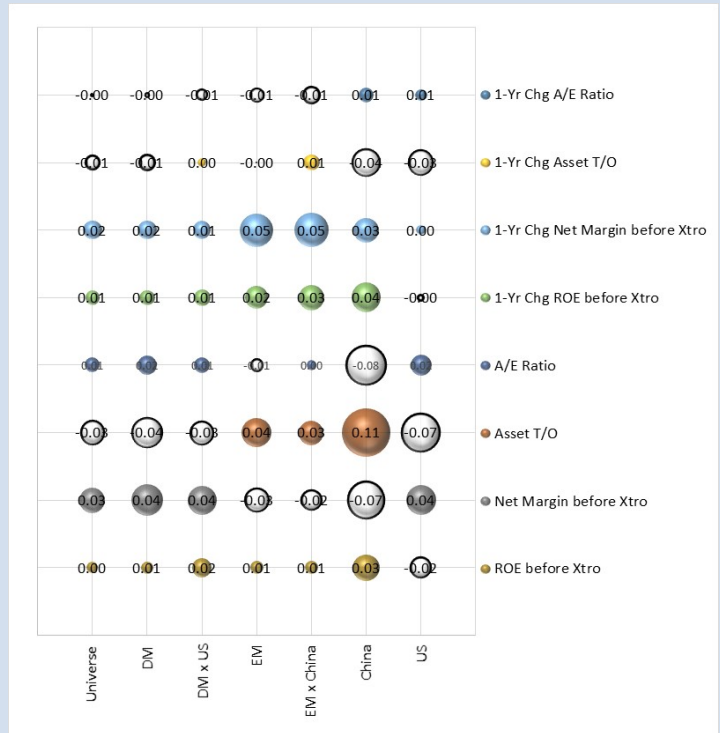**Figure 40: 1-Year Change in Governance Positively Correlated with ROE**

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Data is from December 31, 2013 through December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases. EM = emerging markets ex Kuwait (based on MSCI classifications), and DM = developed markets (based on MSCI classifications). Negative correlations have white-colored bubbles.

Figures 41-42: (Right Chart) US Governance Higher but Environmental Score Lower than Universe (Left Chart)
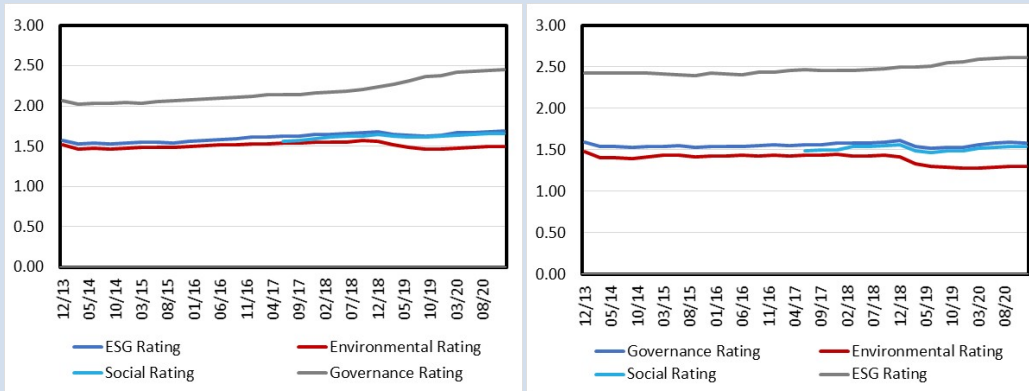
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing. Notes: Data is from December 31, 2013 through December 31, 2020 (social data since June 30, 2017). The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications.

R i s k (F i g u r e 3 8) : A lower *level* of EVA Margin variability is associated with improving ESG Performance (Figure 38). Lower *level* of asset turnover is also associated with rising ESG Performance (Figure 37). This may be partly because high-asset intensive and stable utilities have the highest ESG rating (Figure 22), and utilities have managed a steady improvement in ESG over time (Figure 47). Also, change in ESG performance is highly correlated with overall level of governance and ESG itself (Figure 38). Does this mean that those firms that are focused on shareholders are also more likely to focus on E, S, and G? Do companies with strong ESG results continue to improve along this metric? Figure 43 illustrates the relationship between change in ESG and level of ESG Performance. Except for the highest-ESG companies, change in ESG rises with level of ESG Performance.

V a l u a t i o n (F i g u r e 3 9) : The correlation coefficients of change in ESG Performance and change in valuation multiples are mixed and often close to zero. Change in S/P and FCF/P are generally zero to positively correlated, while change in E/P and B/P are generally zero to negative. S/P, FCF/P, E/P, and B/P, which are the reciprocals of P/S, P/FCF, P/E, and P/B, respectively, are shown to categorize money losers with expensive stocks (e.g., negative and high P/E stocks are both sorted as expensive). Thus, if the correlation is negative for change in E/P, this means that as ESG rises E/P declines and P/E rises, or improving ESG is associated with increasing valuation. On the other hand, a rising MVA Margin indicates increasing valuation, and MVA Margin is generally zero to positively

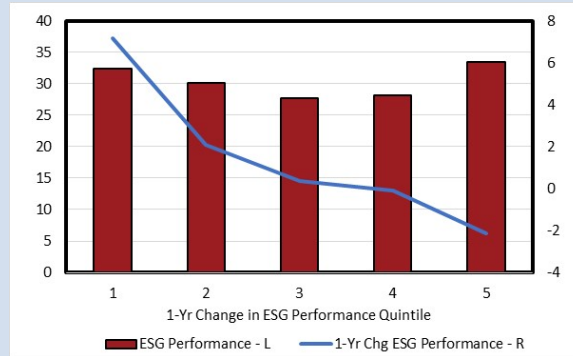**Figure 43: Change in ESG Performance Generally Rises with Level of ESG Performance**

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing. Notes: Data is from December 31, 2013 through December 31, 2020. Quintiles are for within sector sorts of 1-year change in ESG Performance, with 1 being high change and 5 being low. Trimmed means are shown where 20% outliers are removed. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases.

correlated with change in ESG Performance. Figure 44 shows that the relationship between change in governance and change in valuation for S/P, FCF/P, E/P, and B/P has fewer positive correlations than change in valuation does with overall change in the ESG rating (Figure 39); perhaps governance matters more to shareholders than E and S factors. On the other hand, change in MVA Margin is more likely to be negatively correlated with governance than with overall ESG Performance.

Final Comment on China

Note how the correlations in Figures 36-40 and 44 for China are often higher than the universe and/or frequently of opposite sign. Also, see the table for China in Appendix 1 – the model with ESG Performance and EVA Margin is not as effective in China as in other regions. This situation is worthy of further investigation. Perhaps the magnified and sometimes opposite relationships versus the universe is because China is an economy in transition. Its growth is slowing; it is moving from an industrial to a consumer-driven economy; it has environmental, social, and governance issues; and it is investing in green initiatives. Interestingly, the government recently went after Alibaba, the second largest firm in the country by market cap, for monopoly-like practices, but the country has anticompetitive policies for foreign companies operating in and selling into China. Mixed messages and a changing economy appear to be reflected in these correlations.

Figure 44: 1-Year Change in Governance Generally Positively Correlated with Change in Valuation
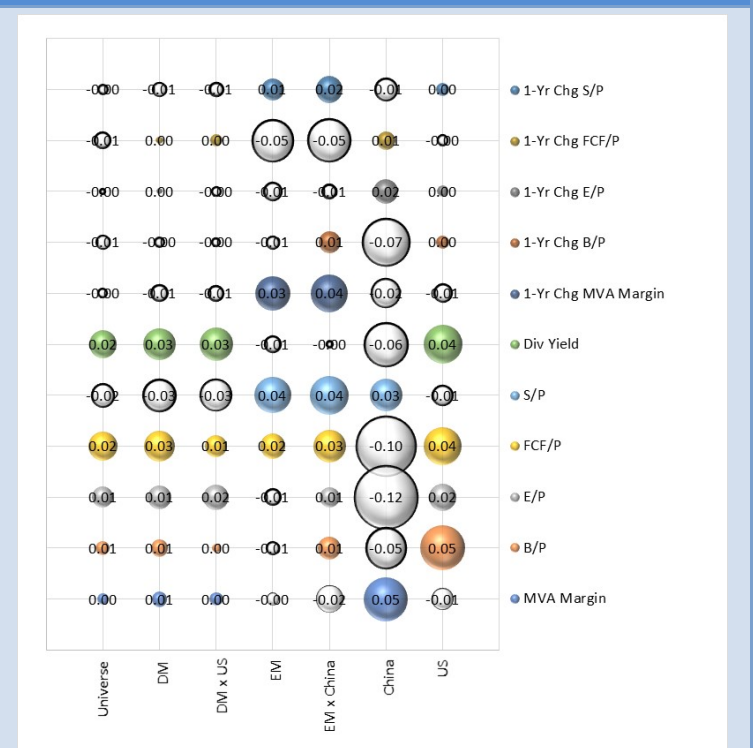
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases. EM = emerging markets ex Kuwait (based on MSCI classifications), and DM = developed markets (based on MSCI classifications). Negative correlations have white-colored bubbles.

ESG Trending Up

Figures 46 to 50 show the trends in ESG and E, S, and G by sectors. Since June 2017, ESG scores have improved in all sectors except industrials, consumer discretionary, consumer staples, and information technology. Please note that the data set has grown over time to 5,259 securities on 12/31/20 from 1,972 on 12/31/13 and 2,812 on 6/30/17, so the comparisons

Figure 45: ESG is Correlated with Size

	Market Cap
ESG	0.22
E	0.21
S	0.24
G	0.23

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Data is from December 31, 2013 through December 31, 2020 (social data since June 30, 2017). The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases.

Figures 46-50: ESG Scores are Generally Improving

| Sector	ESG			E			S			G		
	6/17	12/20	Chg	6/17	12/20	Chg	6/17	12/20	Chg	6/17	12/20	Chg
Energy (10)	1.55	1.68	0.13	1.43	1.54	0.11	1.58	1.68	0.09	2.26	2.62	0.36
Materials (15)	1.78	1.83	0.05	1.75	1.75	(0.00)	1.68	1.80	0.12	2.22	2.60	0.38
Industrials (20)	1.69	1.68	(0.01)	1.67	1.58	(0.09)	1.53	1.62	0.09	2.13	2.46	0.34
Discretionary (25)	1.61	1.58	(0.03)	1.52	1.42	(0.09)	1.52	1.55	0.03	2.09	2.38	0.29
Staples (30)	1.74	1.70	(0.04)	1.72	1.61	(0.11)	1.69	1.67	(0.03)	2.09	2.27	0.19
Health Care (35)	1.61	1.89	0.28	1.48	1.32	(0.16)	1.59	2.00	0.41	2.24	2.53	0.29
Financials (40)	1.45	1.46	0.02	1.29	1.25	(0.04)	1.49	1.50	0.01	2.02	2.39	0.37
Technology (45)	1.83	1.74	(0.09)	1.72	1.50	(0.21)	1.70	1.73	0.03	2.28	2.53	0.25
Communications (50)	1.59	1.62	0.03	1.50	1.41	(0.09)	1.58	1.63	0.05	2.18	2.28	0.10
Utilities (55)	1.89	2.11	0.22	1.93	2.17	0.24	1.66	1.88	0.21	2.29	2.58	0.29
Real Estate (60)	1.32	1.55	0.23	1.26	1.46	0.20	1.32	1.44	0.12	1.90	2.42	0.52
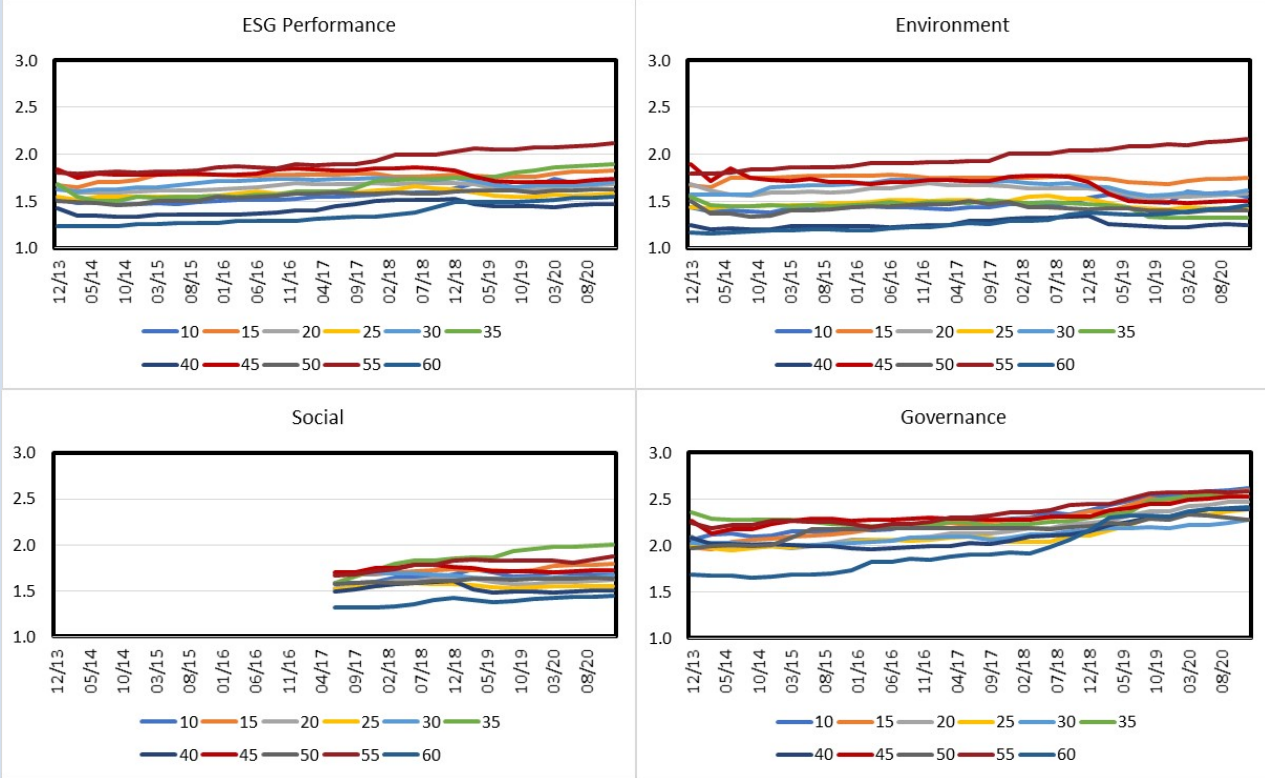
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Data is from December 31, 2013 through December 31, 2020 (social data since June 30, 2017). The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. 10 = Energy, 15 = Materials, 20 = Industrials, 25 = Consumer Discretionary, 30 = Consumer Staples, 35 = Health Care, 40 = Financials, 45 = Information Technology, 50 = Communications Services, 55 = Utilities, 60 = Real Estate.

are not apples-apples. Still, since size is related to ESG (Figure 45), and the median size of the database has declined, the general statement that ESG has improved is probably accurate and should be highlighted given it had a headwind (size). The median market caps on 12/31/13, 6/30/17, and 12/31/20 were $7.2 billion, $6.6 billion, and $3.5 billion, respectively, so the database began with larger companies. The correlation of size to ESG is 0.22, and size is also positively correlated with E (0.21), S (0.24), and G (0.23). Energy, utilities, and real estate stand out

because not only do they have rising ESG scores, but they improved each the E, S, and G variables. Finally, governance has improved for each sector and is the highest rated of the E, S, and G variables.

Environmental Considerations Becoming More Important to Investors

Figure 51 shows the information coefficient (IC) of the best fit multivariate regression with 12-month returns as the dependent variable and EVA Margin, environmental rating, social rating, and governance rating as the independent variables. For this period, the overall combined Spearman IC is a strong 0.17, which is higher than the model of just EVA Margin and overall ESG Performance (0.14); thus, considering each ESG factor provides extra information. Note the trends in Figure 51. The ICs on the environmental and social variables have been rising, whereas governance has been declining, which fits with the overall theme that investors have become more interested in E and S variables.

Figure 51: Environmental Rating Becoming More Important to Investors
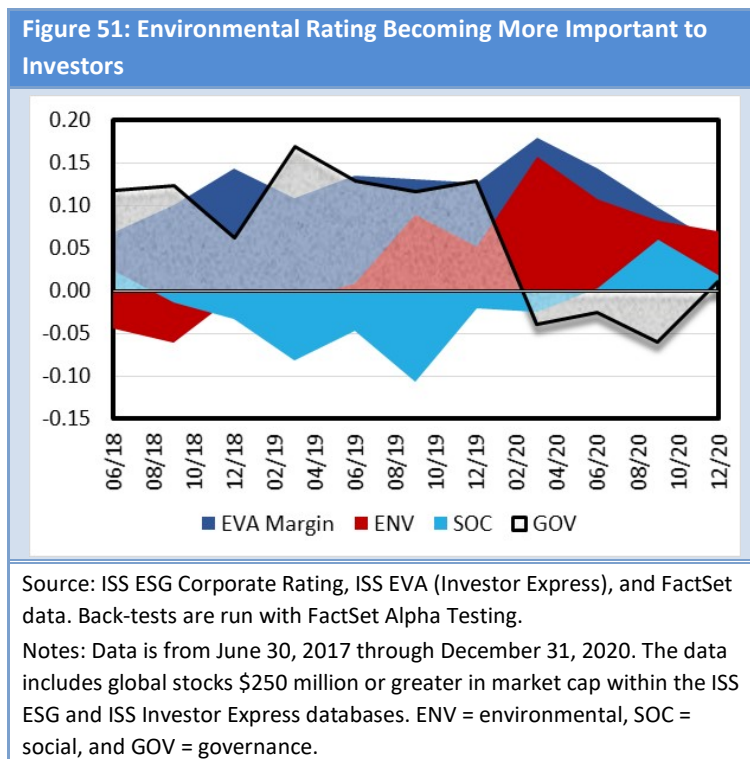
Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: Data is from June 30, 2017 through December 31, 2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases. ENV = environmental, SOC = social, and GOV = governance.

Top E, S, G, ESG, and EVA Margin Stocks Are…

Information technology and utilities stocks are most overweight versus their percent of the universe. Figure 52 shows the percent of the top securities (1-1-1-1-1s) that reside in each sector from a sort of companies in this order:

1. ESG Rating Fractile
2. EVA Margin Fractile
3. Environmental Rating Fractile
4. Social Rating Fractile
5. Governance Rating Fractile

> **Top securities overweight information technology and utilities.**

Only 61 companies had all 1s (based on quintile sorts) out of 5,064 securities. The laggards (most underweight) include consumer discretionary and industrials stocks. Fewer companies are from the US than their percent of the overall universe. Figure 53 shows the top companies using the same sort plus two more to list the highest-ESG firms first followed by high-EVA Margin companies.

Figure 52: Technology and Utilities Overweight

Sector	Percent OW/UW	Percent 1-1-1-1-1s	Percent All	Number 1-1-1-1-1s	Number All
Energy	-1.2%	3.3%	4.5%	2	227
Materials	3.9%	11.5%	7.6%	7	383
Industrials	-8.6%	8.2%	16.8%	5	852
Consumer Discretionary	-8.7%	3.3%	11.9%	2	605
Consumer Staples	5.3%	11.5%	6.2%	7	312
Health Care	-1.4%	9.8%	11.3%	6	571
Financials	-4.1%	11.5%	15.6%	7	791
Information Technology	11.6%	23.0%	11.3%	14	574
Communication Services	-1.4%	3.3%	4.7%	2	239
Utilities	9.3%	13.1%	3.8%	8	191
Real Estate	-4.7%	1.6%	6.3%	1	319
Total		100.0%	100.0%	61	5064
US	-4.2%	42.6%	46.8%	26	2372
Non-US	4.2%	57.4%	53.2%	35	2692

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.
Notes: 12/31/2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications.

Figure 53: Top Securities

Rank	Company Name	Ticker	Country	GICS Sector	ESG Rating	ESG Fractile	EVA Margin	EVA Margin Fractile	ENV Rating	ENV Fractile	SOC Rating	SOC Fractile	GOV Rating	GOV Fractile	1-Yr Total Return	2-Yr Total Return	3-Yr Total Return
1	Red Electrica Corp. SA	REE-ES	ES	Utilities	3.13	1	0.19	1	3.20	1	3.05	1	3.17	1	-2%	-5%	2%
2	Kumba Iron Ore Limited	KIO-ZA	ZA	Materials	3.00	1	0.21	1	2.70	1	3.32	1	3.25	1	58%	149%	94%
3	Terna S.p.A.	TRN-IT	IT	Utilities	2.99	1	0.11	1	3.12	1	2.87	1	3.02	1	9%	36%	44%
4	GlaxoSmithKline plc	GSK-GB	GB	Health Care	2.98	1	0.17	1	2.44	1	3.16	1	2.96	1	-20%	1%	20%
5	BT Group plc	BT.A-GB	GB	Communication Services	2.80	1	0.11	1	2.68	1	2.86	1	2.85	1	-31%	-38%	-40%
6	Enagas SA	ENG-ES	ES	Utilities	2.80	1	0.19	1	2.83	1	2.66	1	3.21	1	-15%	-13%	-9%
7	Taiwan Semiconductor Manufacturing Co	2330-TW	TW	Information Technology	2.78	1	0.29	1	2.88	1	2.64	1	2.87	1	63%	145%	144%
8	RELX PLC	REL-GB	GB	Industrials	2.70	1	0.15	1	2.86	1	2.56	1	3.24	1	-4%	16%	11%
9	Anglo American Platinum Limited	AMS-ZA	ZA	Materials	2.69	1	0.11	1	2.73	1	2.56	1	2.98	1	14%	181%	330%
10	Brambles Limited	BXB-AU	AU	Industrials	2.67	1	0.10	1	2.74	1	2.46	1	2.92	1	-7%	13%	16%
11	Adobe Inc.	ADBE	US	Information Technology	2.66	1	0.23	1	2.66	1	2.56	1	3.11	1	52%	121%	185%
12	Coloplast A/S Class B	COLO.B-DK	DK	Health Care	2.66	1	0.21	1	2.37	1	2.77	1	2.92	1	15%	59%	99%
13	Geberit AG	GEBN-CH	CH	Industrials	2.66	1	0.14	1	2.63	1	2.65	1	2.89	1	4%	51%	37%
14	Microsoft Corporation	MSFT	US	Information Technology	2.65	1	0.28	1	2.63	1	2.55	1	3.11	1	42%	123%	167%
15	Snam S.p.A.	SRG-IT	IT	Utilities	2.64	1	0.12	1	2.64	1	2.53	1	3.10	1	3%	33%	29%
16	Lundin Energy AB	LUNE-SE	SE	Energy	2.64	1	0.24	1	2.41	1	2.89	1	3.24	1	-26%	11%	33%
17	Colgate-Palmolive Company	CL	US	Consumer Staples	2.63	1	0.13	1	2.55	1	2.65	1	3.28	1	27%	49%	20%
18	Air Products and Chemicals, Inc.	APD	US	Materials	2.62	1	0.10	1	2.59	1	2.54	1	3.41	1	19%	77%	75%
19	Nestle S.A.	NESN-CH	CH	Consumer Staples	2.59	1	0.10	1	2.61	1	2.45	1	3.02	1	2%	37%	33%
20	Johnson & Johnson	JNJ	US	Health Care	2.57	1	0.11	1	2.45	1	2.52	1	2.92	1	11%	28%	21%
21	Cisco Systems, Inc.	CSCO	US	Information Technology	2.57	1	0.17	1	2.27	1	2.76	1	3.50	1	-4%	10%	28%
22	Novozymes A/S Class B	NZYM.B-DK	DK	Materials	2.57	1	0.14	1	2.49	1	2.63	1	2.89	1	9%	24%	3%
23	AbbVie, Inc.	ABBV	US	Health Care	2.56	1	0.15	1	2.05	1	2.57	1	3.16	1	26%	26%	24%
24	Akzo Nobel N.V.	AKZA-NL	NL	Materials	2.56	1	0.10	1	2.55	1	2.45	1	3.21	1	-1%	37%	36%
25	Kimberly-Clark Corporation	KMB	US	Consumer Staples	2.55	1	0.11	1	2.75	1	2.24	1	3.37	1	1%	26%	22%
26	SolarEdge Technologies, Inc.	SEDG	IL	Information Technology	2.55	1	0.10	1	2.70	1	2.13	1	3.05	1	236%	809%	750%
27	Intel Corporation	INTC	US	Information Technology	2.55	1	0.13	1	2.28	1	2.62	1	3.60	1	-15%	12%	16%
28	Procter & Gamble Company	PG	US	Consumer Staples	2.54	1	0.13	1	2.71	1	2.29	1	3.07	1	14%	58%	61%
29	Oracle Corporation	ORCL	US	Information Technology	2.52	1	0.19	1	2.55	1	2.32	1	3.19	1	24%	47%	42%
30	NVIDIA Corporation	NVDA	US	Information Technology	2.49	1	0.24	1	2.33	1	2.54	1	3.11	1	122%	292%	171%
31	Verizon Communications Inc.	VZ	US	Communication Services	2.49	1	0.12	1	2.37	1	2.45	1	3.12	1	0%	13%	25%
32	ASML Holding NV	ASML-NL	NL	Information Technology	2.48	1	0.20	1	2.54	1	2.25	1	2.95	1	52%	194%	179%
33	Kinnevik AB Class B	KINV.B-SE	SE	Financials	2.47	1	0.70	1	2.33	1	2.57	1	2.96	1	85%	157%	112%
34	Polymetal International Plc	POLY-GB	CY	Materials	2.46	1	0.23	1	2.24	1	2.58	1	3.07	1	48%	119%	100%
35	Reckitt Benckiser Group plc	RB-GB	GB	Consumer Staples	2.46	1	0.13	1	2.33	1	2.55	1	2.99	1	10%	15%	2%
36	SSE plc	SSE-GB	GB	Utilities	2.44	1	0.11	1	2.40	1	2.40	1	2.87	1	10%	55%	34%
37	Regeneron Pharmaceuticals, Inc.	REGN	US	Health Care	2.41	1	0.32	1	2.49	1	2.23	1	3.04	1	29%	29%	29%
38	3M Company	MMM	US	Industrials	2.40	1	0.10	1	2.54	1	2.08	1	3.01	1	2%	-2%	-18%
39	Accenture Plc Class A	ACN	IE	Information Technology	2.40	1	0.10	1	2.09	1	2.46	1	2.95	1	26%	89%	76%
40	Royal Vopak NV	VPK-NL	NL	Energy	2.39	1	0.10	1	2.30	1	2.32	1	3.18	1	-9%	14%	27%
41	S&P Global, Inc.	SPGI	US	Financials	2.38	1	0.32	1	2.38	1	2.15	1	3.63	1	21%	96%	98%
42	Alexion Pharmaceuticals, Inc.	ALXN	US	Health Care	2.36	1	0.19	1	2.27	1	2.17	1	3.27	1	44%	60%	31%
43	ENGIE Brasil Energia S.A.	EGIE3-BR	BR	Utilities	2.36	1	0.23	1	2.36	1	2.26	1	2.85	1	-10%	43%	79%
44	NortonLifeLock Inc.	NLOK	US	Information Technology	2.36	1	0.11	1	2.14	1	2.39	1	2.97	1	30%	78%	21%
45	NIBC Holding N.V.	NIBC-NL	NL	Financials	2.36	1	0.16	1	2.23	1	2.37	1	2.93	1	0%	-2%	#N/A
46	Clorox Company	CLX	US	Consumer Staples	2.35	1	0.14	1	2.21	1	2.38	1	3.39	1	34%	36%	44%
47	National Grid plc	NG-GB	GB	Utilities	2.33	1	0.14	1	2.31	1	2.21	1	2.87	1	-3%	26%	15%
48	eHealth, Inc.	EHTH	US	Financials	2.32	1	0.15	1	2.25	1	2.20	1	3.19	1	-27%	84%	307%
49	Texas Instruments Incorporated	TXN	US	Information Technology	2.30	1	0.26	1	2.13	1	2.35	1	2.97	1	31%	81%	66%
50	Aareal Bank AG	ARL-DE	DE	Financials	2.29	1	0.13	1	2.07	1	2.43	1	2.82	1	-35%	-20%	-36%
51	Castellum AB	CAST-SE	SE	Real Estate	2.29	1	0.18	1	2.29	1	2.07	1	2.96	1	-2%	35%	64%
52	NextEra Energy, Inc.	NEE	US	Utilities	2.26	1	0.14	1	2.16	1	2.22	1	3.14	1	30%	84%	107%
53	Rio Tinto plc	RIO-GB	GB	Materials	2.25	1	0.10	1	2.07	1	2.23	1	3.28	1	28%	68%	65%
54	eBay Inc.	EBAY	US	Consumer Discretionary	2.25	1	0.24	1	2.19	1	2.14	1	2.87	1	41%	83%	36%
55	NetApp, Inc.	NTAP	US	Information Technology	2.23	1	0.13	1	2.25	1	2.05	1	3.12	1	9%	17%	29%
56	ASR Nederland NV	ASRNL-NL	NL	Financials	2.22	1	0.15	1	2.20	1	2.06	1	3.00	1	4%	6%	13%
57	Hermes International SCA	RMS-FR	FR	Consumer Discretionary	2.21	1	0.14	1	2.09	1	2.24	1	2.85	1	33%	83%	101%
58	Maxim Integrated Products, Inc.	MXIM	US	Information Technology	2.20	1	0.18	1	2.02	1	2.16	1	3.27	1	46%	81%	79%
59	Svenska Handelsbanken AB Class A	SHB.A-SE	SE	Financials	2.18	1	0.19	1	2.09	1	2.14	1	2.84	1	-18%	-10%	-15%
60	Rotork plc	ROR-GB	GB	Industrials	2.18	1	0.10	1	2.05	1	2.19	1	3.16	1	-4%	32%	25%
61	Church & Dwight Co., Inc.	CHD	US	Consumer Staples	2.14	1	0.11	1	2.06	1	2.13	1	3.11	1	25%	35%	79%

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: 12/31/2020. The data includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications. ENV = environmental, SOC = social, GOV = governance.

Definitions

Capital = net operating working capital + long-term capital = total debt and equity raised from investors or retained from earnings; capital is measured after making adjustments to remedy accounting distortions – it is measured net of excess cash, net of deferred tax assets, and net of pension and retirement assets, but including leased assets, and after capitalizing and amortizing research and development (R&D) and advertising spending over time

EBITDAR = EBITDAR is EBITDA (earnings before interest, taxes, depreciation, amortization) plus BITDAR add-backs: (1) rent expense; (2) R&D and advertising spending; (3) reported retirement expense less the service cost; and (4) the changes in bookkeeping reserves for bad debts, LIFO, warranty expense, etc. EBITDAR is an improved version of EBITDA that is a purer and more comparable measure of cash operating profit

EBITDAR Margin = EBITDAR/sales

EVA = Economic Value Added (EVA) is the profit that results after all operating expenses, taxes, and capital charges have been paid. EVA also corrects for several accounting distortions baked into net income. It correctly and completely consolidates pricing power, operational efficiency, and the quality of asset management into one overall score. A higher number indicates higher performance.

EVA Margin = EVA/sales

EVA Momentum (X-Yr) = (EVA time 0 - EVA time X)/(sales time X)

MVA Margin = (market value of firm - capital)/sales

COC = WACC = weighted average cost of equity, after-tax cost of debt, and cost of other contributed capital

Appendix 1: High-ESG and Profitable Firms are Best in Developed Markets

World

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	7.6	6.0	3.5	0.9	1.4	3.8	10.8	12.2	12.6	14.4	17.0	13.1	1	0.010	52.1
2	7.0	5.3	5.5	2.4	4.5	5.0	12.0	12.0	13.2	14.3	14.4	12.7	2	0.013	36.1
3	5.4	5.2	3.3	2.4	2.9	3.7	12.1	10.9	12.7	13.2	13.8	12.2	3	0.013	25.5
4	5.4	5.7	5.1	2.6	-0.5	3.7	12.1	10.9	10.3	13.1	16.0	12.0	4	0.014	17.2
5	3.9	4.6	3.9	1.3	-1.2	2.4	13.1	12.3	10.3	13.5	14.1	12.3	5	-0.015	9.6
All	5.8	5.4	4.3	2.0	1.4	3.7	11.6	11.5	11.7	13.3	14.4	12.3	All	0.012	25.5

Developed Markets

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	8.3	6.0	3.6	1.2	2.1	4.1	9.9	12.0	12.7	14.8	16.8	12.9	1	0.011	52.1
2	9.4	6.6	5.8	2.3	5.0	5.9	11.1	11.6	12.7	14.8	14.6	12.5	2	0.012	36.3
3	7.3	6.3	3.8	2.7	5.0	4.9	11.6	11.0	12.7	12.5	13.1	11.7	3	0.013	25.6
4	8.0	6.5	5.6	3.6	0.1	4.8	11.8	10.7	9.5	12.7	15.1	11.4	4	0.015	17.7
5	6.9	6.2	4.9	2.5	-2.2	3.5	11.4	11.7	10.5	12.2	11.7	10.8	5	0.015	10.4
All	8.0	6.3	4.8	2.4	2.2	4.7	10.6	11.2	11.5	13.1	13.7	11.8	All	0.012	27.3

Developed Markets Ex US

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	5.6	4.8	3.0	1.5	-0.5	2.6	10.3	13.2	14.1	15.5	16.0	13.8	1	0.006	52.3
2	5.9	4.4	5.8	1.5	3.6	4.3	11.9	12.1	13.8	15.1	14.9	13.3	2	0.008	36.1
3	5.4	5.3	2.8	2.7	4.2	3.9	13.5	12.0	14.1	13.8	13.8	12.8	3	0.006	25.7
4	8.7	6.5	3.5	2.9	0.5	4.3	11.6	12.6	11.0	12.4	15.7	12.1	4	0.010	18.0
5	7.3	7.7	4.8	3.1	-1.7	3.9	13.2	14.0	10.8	11.0	11.4	10.6	5	0.010	10.3
All	6.5	5.5	4.0	2.3	1.3	3.7	11.4	12.3	12.6	13.4	13.7	12.6	All	0.008	29.5

Emerging Markets

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	4.0	4.9	2.7	-5.8	-1.7	1.8	21.1	18.1	20.0	16.8	23.7	17.7	1	0.009	52.8
2	-4.1	-1.3	2.8	3.4	1.8	0.4	21.3	15.3	22.9	15.7	19.1	16.1	2	0.013	35.0
3	-2.0	-0.5	-0.6	0.8	-4.7	-1.3	16.3	12.6	15.8	19.6	17.9	15.2	3	0.014	25.3
4	-3.9	1.6	2.6	-1.3	-2.8	-0.9	14.3	16.2	14.9	17.1	20.4	15.3	4	0.008	16.4
5	-1.7	0.5	1.5	0.0	-2.5	-1.0	13.2	11.7	11.9	20.9	16.7	12.8	5	0.013	7.6
All	-1.7	0.7	1.9	0.1	-1.6	-0.5	14.8	12.9	13.8	15.0	17.1	14.3	All	0.011	18.4

Emerging Markets Ex China

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	2.9	3.0	1.8	-6.8	-0.5	1.3	25.1	19.0	20.4	17.1	23.7	19.4	1	0.008	52.1
2	-4.5	-1.2	3.1	3.6	-0.6	-0.1	21.9	15.4	23.2	15.8	20.9	16.5	2	0.014	35.0
3	-3.2	-0.3	-0.9	0.9	-4.7	-1.7	17.3	12.7	15.0	19.7	18.2	15.4	3	0.011	25.3
4	-5.7	0.5	1.7	-1.1	-3.3	-1.8	14.1	16.7	15.1	16.8	21.8	15.8	4	0.008	16.5
5	-3.6	-1.1	-0.0	-0.6	-3.7	-2.4	13.9	13.0	13.5	20.2	17.8	13.6	5	0.013	7.2
All	-3.2	-0.2	1.2	-0.1	-2.1	-1.3	16.2	13.2	14.6	15.2	18.1	15.1	All	0.011	20.2

China

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	1.8	30.1	22.0	15.7	-11.8	4.8	48.4	91.1	56.8	80.1	35.0	37.8	1	0.006	58.6
2	-4.2	-1.2	-19.6	-15.6	30.0	5.8	19.9	10.1	30.9	15.8	92.5	38.5	2	-0.021	36.3
3	4.7	-6.7	14.9	-3.3	-5.2	4.4	20.0	27.0	46.1	29.6	39.1	23.4	3	0.093	19.9
4	5.6	3.7	7.9	-0.0	4.5	4.4	25.1	20.9	21.7	22.6	31.8	17.2	4	0.013	15.3
5	4.2	6.3	4.4	-0.6	0.4	2.5	19.8	15.5	16.1	34.9	17.8	14.8	5	0.014	8.5
All	4.3	7.5	6.1	-0.5	1.1	3.7	16.6	15.8	15.8	22.0	16.8	15.1	All	0.015	10.7

United States

ESG Perfor-mance	12-Mo Returns (%) EVA Margin						Standard Deviation (%) EVA Margin						Sort	Median Value EVA Marg.	ESG Perf.
	1	2	3	4	5	All	1	2	3	4	5	All			
1	13.5	8.9	5.5	-2.1	10.8	8.8	10.1	11.2	9.7	13.6	25.6	11.5	1	0.024	52.0
2	15.5	9.4	5.3	4.5	7.8	9.3	11.7	11.9	12.0	16.2	18.1	12.0	2	0.028	35.2
3	9.7	7.4	5.7	2.3	5.5	6.6	10.3	11.4	12.2	12.6	15.3	10.8	3	0.028	25.6
4	7.3	6.6	8.3	5.2	0.2	5.8	12.9	10.7	10.5	14.0	16.5	11.5	4	0.022	16.9
5	7.1	6.3	6.0	2.1	-5.7	3.9	10.8	13.9	12.9	15.9	17.3	12.6	5	0.023	10.6
All	10.4	7.6	6.6	2.8	3.6	6.7	10.4	11.3	10.8	13.4	14.6	11.3	All	0.025	22.8

Source: ISS ESG Corporate Rating, ISS EVA (Investor Express), and FactSet data. Back-tests are run with FactSet Alpha Testing.

Notes: Securities sorted every three months within GICS sectors. The cumulative returns in the graphs are geometrically derived. Equal-weighted annual returns are shown in the table. Data is from December 31, 2013 through December 31, 2020. The data for the sorts includes global stocks $250 million or greater in market cap within the ISS ESG and ISS Investor Express databases with sector classifications.

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