The ASSET4 Framework: Adding Value through Environmental, Social & Corporate Governance Information

Investment Research | QSG Equity Research Team

There have long been firms focused on investing according to socially responsible concepts, but these types of signals have historically achieved limited penetration. Over the past few years however, the asset management industry has begun to re-evaluate socially responsible issues amid a growing realization that this information may add value to the long-term decision-making process. A range of environmental, social & governance ("ESG") related themes have the potential to heavily impact the long term viability of equity investments: from climate change and other environmental risks, to human capital management, compensation practices, supply chain impact and brand reputation. These value drivers extend well beyond those captured in traditional financial reporting, but are nevertheless fundamentally linked to shareholder returns. Using a set of specialty data provided by ASSET4, we confirm the ability to add value through the ESG data, and propose possibilities for integration into the traditional modeling process.

Introduction

Over the last few years, investors have become increasingly interested in the transparency of the investment management process, and are more cognizant than ever of the relationships that exist between investment performance and real world corporate activity. Furthermore, as part of the asset manager selection process, some institutions now include questions about how environmental, social or governance issues are taken into account during the security selection process. Many believe ESG investing to be a holistic approach that can both add value and mitigate portfolio risk.

In order to effectively incorporate environmental, social & corporate governance information into an investment process, it is necessary to first understand the nature of ESG factors and their influence on investment returns. ESG information helps identify the relatively 'good' companies, or those in harmony with social ideals, versus 'bad' companies, those whose behavior is judged to be socially irresponsible. The information is designed to reflect management practices that generate shared benefits for all constituencies, thereby enhancing the ability to produce long term shareholder value. However, if poor ESG behaviors do not result in an immediate cost to the firm, but instead manifest themselves in the decreased likelihood of future profits, this effect may be overwhelmed in the short-term and only apparent over medium to long-term horizon.

Literature Review

A widespread disagreement has existed among academicians and investors regarding socially responsible investing results. On one hand, many individuals believe that companies cannot use their financial resources to improve social or environmental performance without decreasing shareholder value. Walley & Whitehead (1994), for example, suggest that the costs of adhering to ethical standards will translate into higher product prices, a competitive disadvantage and lower profitability. On the other hand, some argue that improved social or environmental performance can enhance a company's input-output efficiency and generate new market opportunities. Porter and Van der Linde (1995) submit that active policies to improve environmental performance can create a competitive advantage due to a more cost efficient use of resources. Blank and Daniel (2002) discuss the potential usefulness of eco-efficiency scores in making investment decisions, and report that an equal-weighted eco-efficiency portfolio delivered somewhat higher Sharpe ratios than the S&P 500 Index during the 1997–2001 period. Guerard (1997), however, uses the social performance database of Kinder, Lydenberg, Domini & Company and concludes that portfolios derived from a socially screened investment universe did not perform materially differently from those obtained from an unscreened set.

While there is no shortage of divergent views, some of these conflicting results can be attributed to differences in methodology and choice of ESG indicators as pointed out by Ullman (1985) and by Griffin and Mahon (1997). Furthermore, advocates of ESG investing argue that corporate social responsibility reflects the managers' views on how the company will perform in the long term. These views may be mispriced in the short term, but can generate incremental returns in the long run (Derwall. et al, 2005).

Data & Methodology

If the benefits of social or environmental initiatives outweigh their costs, then businesses that adhere to the concept of corporate and social responsibility should be able to report relatively higher earnings than less responsible peers. However, the extent to which social or environmental based investment policies contribute to returns depends on the ability to factor the financial reward of corporate social responsibility into share prices.

This research note investigates whether ESG scores, as provided by ASSET4, have predictive power for stock-picking. ASSET4 is a leading provider of comprehensive, integrated and transparent financial and extra financial information, which is essential to understanding and managing the long term performance and risk profile of today's corporations. For this study, we use ASSET4's economic, environmental, social and corporate governance pillar scores to test the outperformance of stocks with high ESG characteristics. This information is based upon a framework consisting of over 250 key performance indicators taken from 900 individual data points. A general outline is shown in Figure 1.

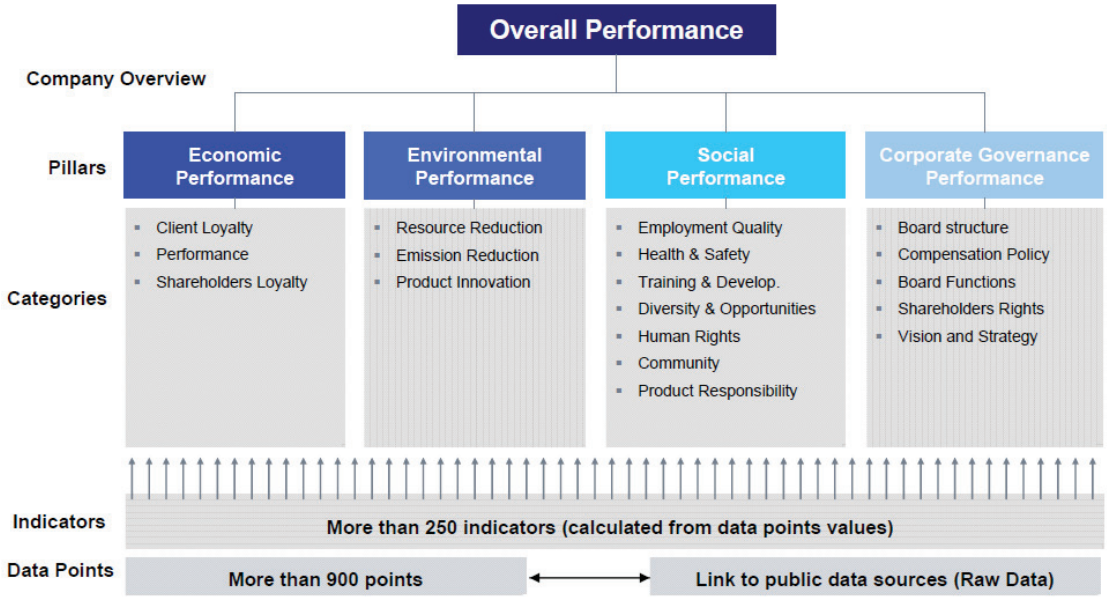

Figure 1 Asset 4 ESG data and framework

Information taken from the ASSET4 database consists of all US companies covered from June 2003 through September 2009. The total number of stocks in our sample ranges from approximately 400 in 2003 to over 900 by 2009. It should be noted that ASSET4 also covers a significant number of securities outside of the US that are not included in this study.

To arrive at a single aggregate ESG score by company, we normalize the four pillar scores (economic, environmental, social, and governance), and then combine these on an equal weighted basis to create the ASSET4 overall performance score. This metric gives a holistic view of corporate performance, and allows for a general assessment of the efficacy of this data. While not covered in detail here, we also note that pillar and category scores permit a more targeted approach for constructing optimized investment strategies than that of the integrated study. Table 1 highlights this diversity by presenting the average monthly percentile rank correlations between pillar scores from June 2003 to March 2009. As can be seen from the table, only the Social Pillar consistently scores above .60 against the other areas.

	Corp Gov Pillar	Economic Pillar	Environ Pillar	Social Pillar
Corp Gov Pillar	1.00	0.39	0.41	0.49
Economic Pillar	0.39	1.00	0.38	0.61
Environ Pillar	0.41	0.38	1.00	0.60
Social Pillar	0.49	0.61	0.60	1.00

Table 1

To test the signal strength of this data, we construct quantile portfolios on the basis of the equal-weighted performance score; thereby splitting our population sample into individual groups containing an equal number of stocks. Rankings and portfolio rebalancing occur at the end of each month for all tests, and companies with no performance score on the rank date are excluded for that period. ASSET4 estimates that firm information is available in their database approximately six months after a company's fiscal year end depending on when companies publish their CSR reports. In response to this, all ASSET4 data is lagged by six months in our study.

The remainder of this paper is organized as follows. We will first explore the characteristics of the ASSET4 coverage universe, and then evaluate the results of a univariate study of ASSET4 data using quintile portfolios formed on the basis of the equal-weighted overall performance score. From there, we will perform a series of tests to determine an optimal methodology for integrating ESG data into both socially responsible portfolios and traditional alpha frameworks.

To help understand the interaction between ASSET4 data and traditional modeling frameworks, we use QSG's Value Momentum Model ("VMM") as a proxy for conventional approaches to systematic investing. This model takes a balanced perspective for stock selection within the US market, and favors securities with high earnings quality, good valuation, strong balance sheets, positive momentum, and earnings growth. The balanced VMM is ideal for investors looking for broad exposure to a variety of proven stock selection signals and a "core" approach to portfolio construction. Below are some performance highlights of the Value Momentum Model over the Russell 1000 from 06/30/2003 to 9/30/2009. Each rebalancing period we create equal weight decile portfolios based on VMM scores. To test the forecasting performance of the factor, we calculate the Spearman rank correlation (IC) between the initial ranks and forward returns. The results over time are reported in Chart 1 below.

We also calculate an average return spread representing an investment strategy based on buying the stocks with the highest ratio (the top decile, or D1) and shorting those stocks with the lowest ratio (D10). The spread is simply the difference between these returns. That statistic, as well as

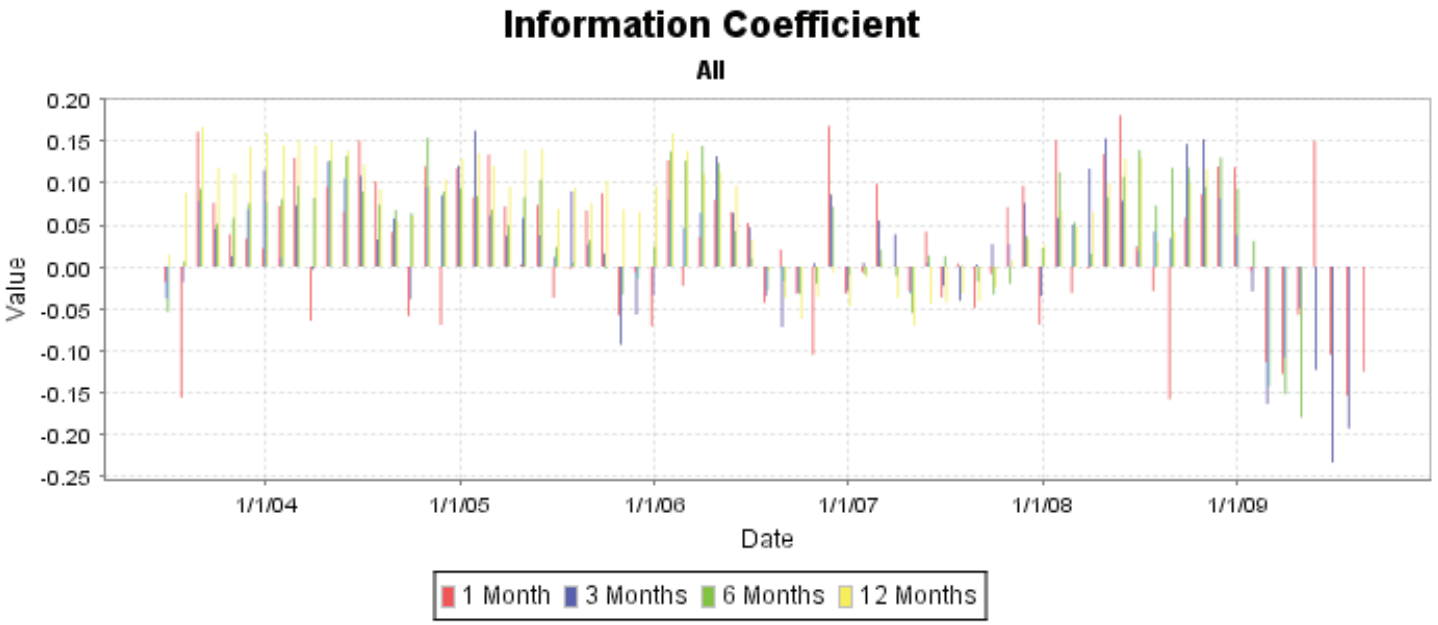

Chart 1 - Information Coefficient

the average IC is shown in Table 2.

Holding Period	Avg. IC	Avg. Top-Bottom Spread
1 Month	0.023	0.33%
3 Months	0.025	0.57%
6 Months	0.044	1.97%
12 Months	0.068	4.97%

Table 2

ASSET4 Universe

Before exploring the return generating properties of this data set, we first need to assess the fundamental characteristics of the ASSET4 coverage universe. For this study, we use the Northfield US Fundamental Equity model (please see www.northinfo.com for further information) with a benchmark consisting of the equal weighted Russell 1000 Index constituents. Some descriptive statistics of the ASSET4 data are shown in Tables 3a & b, and represent average monthly information. Our findings show that the ASSET4 universe tends to have larger capitalization securities with a bias towards high dividend payers, although no other significant value exposures were present. In addition, ASSET4 data has good representation across all sectors, as no noteworthy skews were seen when compared to the benchmark universe.

Fundamental Factor Weighted Averages		
Factor	Universe	EWQ R1000
Price/Earnings	19.20	19.20
Price/Book	2.30	2.24
Dividend Yield (%)	1.65	1.58
Market Cap (Mil)	18,843	13,035

Table 3a

Sector Exposures	Asset4 (%)	Bench (%)	Active (%)
ENERGY	5.95	4.88	1.07
FINANCIAL	18.8	21.47	-2.67
TEL&UTILITIES	9.44	8.72	0.72
TRANSPORTATION	1.55	2.14	-0.59
TECHNOLOGY	15.71	15.01	0.7
HEALTH	10.12	9.92	0.19
CONS_STAPLE	12.77	11.24	1.53
CONS_DISCRET	5.3	6.53	-1.23
BASIC INDUSTRY	15.33	15.21	0.12
MISC	5.04	4.88	0.16

Table 3b

Univariate Signal

To test the predictive power of the equal-weighted performance score on a stand alone basis, we create monthly quintile portfolios using ASSET4 data. The top quintile therefore represents the most highly ranked ESG companies. We then compare the returns of this quintile to that of the EQWT Russell 1000 and find that the ESG stocks have outperformed the broad universe by an annualized of 337bps from 06/30/2003-09/30/2009. While the top quintile did have significant P/E, dividend yield, market cap and beta (Table 4) exposures relative to the benchmark, further investigation into this performance suggests that roughly 27% of the excess is due to security specific returns unrelated to the industry, beta and fundamental factor exposures tracked by the Northfield risk model. Performance specifics are presented in Table 5.

Fundamental Factor Weighted Averages		
Factor	Top Quintile	EQW R1000
Price/Earnings	17.00	19.20
Dividend Yield (%)	2.22	1.58
Beta	0.99	1.14
Market Cap (Mil)	46,306	13,035

Table 4

Returns	
Active Return	
Annualized Monthly	3.37%
Percent of Active Return	
Stock Specific	27.00%
Factor Model Specific	73.00%

Table 5

These results emphasize the likelihood that ESG data can provide uncorrelated insights into security performance, especially in times of duress. Indeed, as Chart 2 illustrates, the majority of quintile one outperformance manifested itself during the heart of the recent financial crisis.

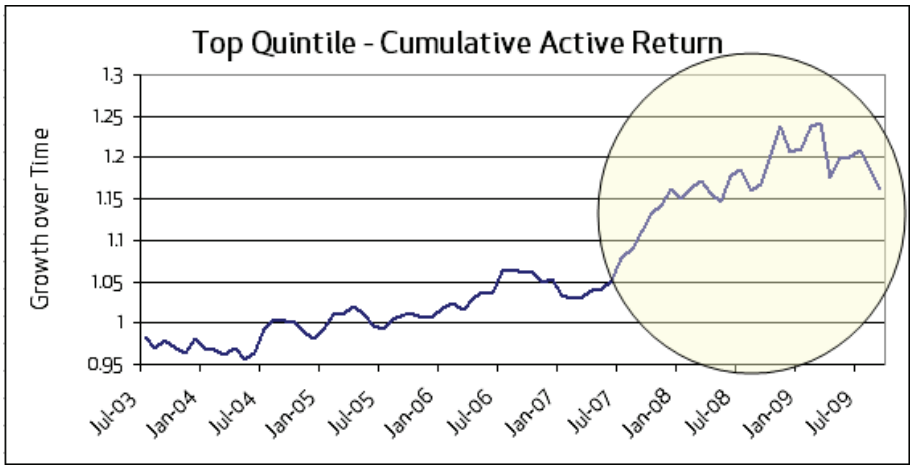

Chart 2

Screening Criteria

We now will prototype a manager with a definitive social responsibility mandate. That is to say, this investor's portfolio construction process is constrained such that only securities with high ESG scores may be included. In consideration of this possibility, we first use the ASSET4 equal-weighted performance score as a screening tool to establish an investible universe. In this instance, the top 50% of the ASSET4 domestic scores represents our filter criteria. Some managers may prefer a higher threshold, but we use the mid-point here to ensure a robust historical sample. Once the screen is complete, the QSG VMM ranks are calculated on the qualifying securities, thus ensuring that all top ranked VMM stocks have relatively high ESG scores as well. Since the original universe has been reduced by fifty percent due to the screen, we form quintile portfolios with the resulting VMM scores.

Chart 3, Tables 6 & 7 show the results of the Value Momentum Model run over the ESG screened universe. The results show better ICs than the stand alone model over all holding periods, while the spread returns are marginally reduced across all horizons. However, considering that we have filtered the top 50% of the universe based on highly ranked ASSET4 stocks, those with inferior ESG scores were no longer a part of the bottom quintile. This would likely have an adverse impact on the long-short spread for the overall VMM strategy. In addition, we notice that the annualized average active return versus the equal weight Russell 1000 improved only at the longest (12 month) horizon. This is primarily due to the quality bias inherent in both the ESG and VMM signals. The powerful rally witnessed since the March market bottom has been fueled by lower quality, higher beta companies rebounding from distressed levels. If we consider screened results only through 03/31/2009, we note that the top quintile outperformed the EQWT R1000 on a one, three, six and twelve month basis by 0.99%, 1.57%, 1.98%, and 2.05%, respectively.

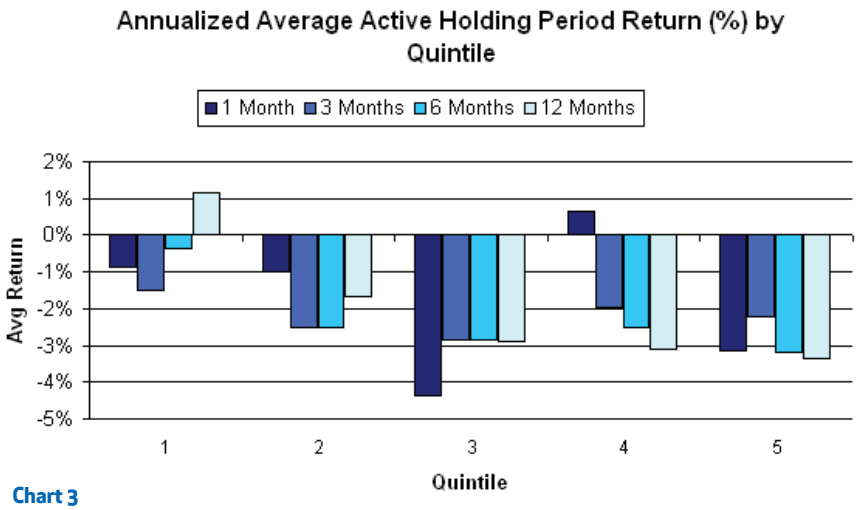

Chart 3

Holding Period	Avg. IC	Avg. Top-Bottom Spread
1 Month	0.045	0.19%
3 Months	0.049	0.18%
6 Months	0.069	1.41%
12 Months	0.090	4.49%

Table 6

Holding Period	Avg Issues	Ann Avg Active Return	Sharpe Ratio	Ann Avg Turnover	Avg Quantile Hit Ratio
1	58	-0.85%	0.62	71%	60%
3	58	-1.48%	0.55	24%	56%
6	58	-0.36%	0.49	12%	53%
12	58	1.14%	0.36	6%	57%

Table 7 - Quintile 1 Statistics (EQWT R1000 benchmark)

These results show that, although short-term spreads are somewhat reduced, using ESG as a screening criteria still allows for the successful execution of a systematic stock selection strategy.

Model Interaction

For those managers focused solely on achieving the highest possible risk adjusted returns without specific consideration for the philosophical appeal of ESG data, the screening approach outlined above may be too limiting in nature. With this in mind, we next extend the analysis to include a more detailed study of the interaction between VMM signals and ESG rankings. While ESG data does a good job capturing the core values of a company, it does not hold a complete set of answers to many of the complex factors that influence financial performance. However, when combined with more traditional financial metrics, ESG data may offer an intuitively appealing compliment to earnings and price related signals.

To study these effects, we set up the following investment strategies:

1. **Long Intersection** - Considers only those stocks simultaneously in the top 10% of the Value Momentum Model and top 25% of the ASSET4 equal-weighted performance rankings

2. **Long Exclusion** - Begins with all the stocks in the top 10% of the Value Momentum Model, and removes those names that are in the bottom 25% of the ASSET4 equal-weighted performance rankings.

Both the intersection & exclusion parameters only apply to the top decile of the VMM rankings. Deciles 2-10 remain unchanged from the original Value Momentum model. The base universe is the Russell 1000. The test period is again 06/30/2003 to 09/30/2009 and the benchmark is the EQWT Russell 1000.

The top decile results for the VMM, Long Intersection & Exclusion strategies are shown in Chart 4 and Table 8. From these graphics, we can see that both interaction strategies registered an increase in active returns relative to those seen by the stand alone VMM. We also note the increased risk adjusted returns (i.e. information ratios) and reduced turnover, which is expected given the slow moving nature of ASSET4 signals.

While the performance results are positive for both strategies, it is also important to consider how the introduction of a new signal may alter the fundamental characteristics of the original strategy. In Table 9, we summarize some of the more significant exposures present in each of the portfolios.

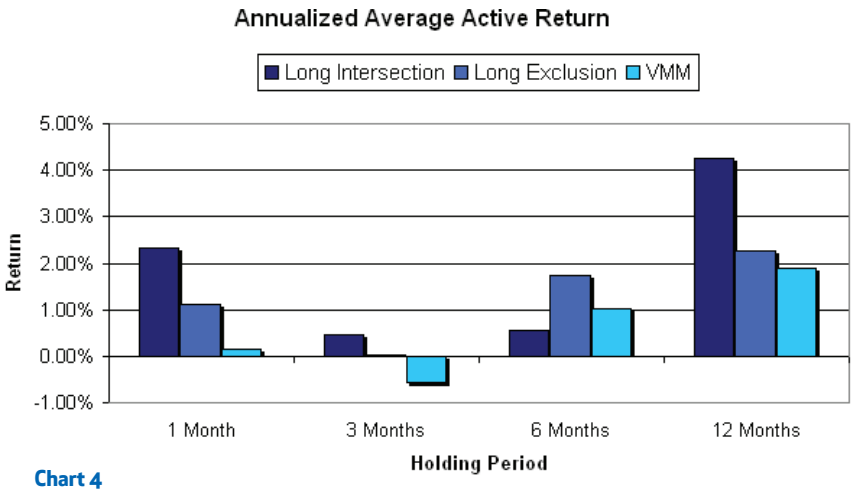

Chart 4

Since the VMM is a value driven approach, we expect both low P/E and Beta versus the benchmark, as well as a relatively high Dividend Yield. The results in Table 9 highlight these biases, and further show that while the Long Intersection strategy dramatically alters the capitalization profile of the original VMM portfolio, the Long Exclusion combination registers no significant changes. This is not unexpected given the fact that the Long Exclusion strategy on average only removes a small number of stocks (19) from the original results. For the Long Intersection strategy, however, the concentrated nature of the results limits its ability to provide a broadly diversified portfolio that is not heavily skewed towards larger-cap stocks.

1 Month	Avg Issues	Ann Avg Active Returns	Information Ratio	Ann Avg Turnover	Avg Quantile Hit Ratio
Value Momentum	107	0.16%	0.031	46.90%	58.70%
Long Intersection	21	2.34%	0.259	9.80%	54.70%
Long Exclusion	88	1.12%	0.218	40.60%	53.30%
3 Month					
Value Momentum	107	-0.55%	-0.103	15.70%	52.00%
Long Intersection	21	0.47%	0.044	3.30%	58.70%
Long Exclusion	88	0.02%	0.004	13.50%	57.30%
6 Month					
Value Momentum	107	1.01%	0.194	7.90%	60.00%
Long Intersection	21	0.54%	0.045	1.60%	56.00%
Long Exclusion	88	1.73%	0.327	6.80%	66.70%
12 Month					
Value Momentum	107	1.89%	0.449	3.90%	62.70%
Long Intersection	21	4.26%	0.671	0.80%	72.00%
Long Exclusion	88	2.27%	0.51	3.40%	69.30%

Table 8

Conclusion

Factor	Value Momentum	Long Intersection	Long Exclusion	Russell 1k EQW
Price/Earnings	14.8	14.7	14.7	19.2
Dividend Yield(%)	1.62	2.14	1.66	1.58
Market Cap (mil)	19,314	54,629	20,899	13,035
EPS Growth Rate(%)	13.53	13.27	13.61	13.09
Beta	1.02	0.97	1.01	1.14

Table 9

Investment managers are incented to identify factors that drive financial performance and generate future excess returns. ESG signals have not historically been leveraged by most traditional portfolio construction models. Consequently, issues related to environmental, social and corporate governance behaviors have often been overlooked. Standard financial measures typically look backward and report on current successes. Intrinsically, ESG objectives and priorities are forward looking and reveal prospects for future achievement. In many cases, ESG performance can directly impact a corporation's ability to expand to new markets, attract talent and access key resources; all of which are important factors in considering prospects for future performance. From this perspective, ESG signals may provide a stable path to connect intangible estimates of company quality to tangible measures that facilitate intercompany comparisons.

Through our analysis of a robust set of ESG data, we have uncovered impressive performance results for both stand alone and integrated ESG approaches. We confirmed that investment managers can blend qualitative and quantitative analyses by combining analytical modeling approaches with ESG information; where value is created from picking sustainable performance leaders and avoiding future laggards. Moreover, the recent rally seen in the US has been dominated by low quality, low priced/low cap, high beta stocks. Stylistically, this would be the "perfect storm" to wash away any alpha generated by ESG signals. Yet, our longer term tests illustrate that the positive relationship between ESG factors and financial performance remains evident.

In light of the shifting priorities of consumers, governments and markets, we expect ESG factor analysis to become more common in the future. Intangible signals that are important for long-term valuation expectations remain some of the most difficult factors to determine on the basis of financial reporting alone, and ESG information may be an effective way to enhance this pursuit. Our analysis suggests that ESG signals may allow investors to position for the 'green' themes of the future, while harvesting enhanced returns today. It may soon no longer be a question of who is and is not integrating ESG. The question will be: Who's doing the best job of it?

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