313. Socially Responsible Investing: Green for the Planet and Your Wallet

"Socially responsible investing in the U.S. can be defined most succinctly as the process of integrating personal values and societal concerns into investment decision-making."

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Abstract

This study analyzed whether or not investment in socially responsible companies generated abnormal returns in comparison to the S&P 500. An Environmental, Social, and Governance Index consisting of 33 companies was created based on four different ESG rating agencies. In order to perform a meaningful comparison between said ESG Index and the S&P benchmark, the researcher used Eventus software to conduct an event study. Eventus analyzed stock price data of ESG and S&P companies at a specific point in time over a period of five years. It was determined that the ESG companies performed significantly stronger in comparison to the S&P in a bullish market. There are many economic factors that impact stock prices which cannot be held constant. However, in order to mitigate some market volatility, the researcher chose a five- year period ranging from 2013 which is well after the recovery from the Great Recession to 2017, before the most recent market downturns. This leaves room for future research in less favorable economic conditions to determine if companies continue investing in their ESG initiatives during a recession, as it becomes more costly to be ethical, and if investor attitudes and priorities shift during a downward economic trajectory.

Introduction

With the rapid development of technology, the twenty-first century has been anointed as the era of information. This presents stockholders with real time data and tears down some information barriers that the previous generation of investors may have faced in the past. In turn, the next generation of professionals and potential investors place a lot more emphasis on corporate transparency and accountability, not only in financial reporting but also in socioeconomic and environmental matters. A large and increasing number of world investors are integrating environmental, social, and governance (ESG) to understand risk and opportunities. ESG can help investors identify risks not measured by conventional financial analysis. Such risks can impact financial performance through operational costs or cost of litigation.

Acknowledgements

Methodology

Sample Construction:

The aim of this sample was to create an index comprised of companies with the highest ESG ratings across all industries. A benchmark comparison would then be performed between the ESG Index and the S&P 500, this will provide evidence of stock market returns in relation to overall market performance. In order to construct said index, I turned to four different ESG ranking systems. The first list of top ESG companies that I considered was comprised by a MSCI Inc. 2019 study, another ranking system was created by Sustainalytics, the third by RobecoSAM and the last measures considered were CDP Climate Scores. I proceeded to cross reference the top ranked stocks between all four ranking systems and created a group of top 29 companies that appeared at least on two of the four lists of top stocks. I also chose to analyze the most recently available data as the nature of ESG scores is time sensitive, meaning that maintaining a high ESG score takes continuous commitment as it is comprised yearly. Therefore, a company that may have had a high rating in the past can lose that rating the following year if it is not fully committed to an ESG strategy in the long run. All four ranking systems have publicly available yearly reports that summarize their findings.

Data Collection:

In order to analyze whether or not companies with higher ESG scores experience higher returns, I utilized the Eventus software via Wharton Research Data Services (WRDS). Eventus is essential to conducting event studies as it uses historic stock price data form the Center for Research in Security Prices (CRSP) database. For each of the 29 companies in the ESG Index, I identified the corresponding PERMNO code using the WRDS company look up feature. PERMNO codes are unique company identifiers for the CRSP database serves as the basis for analysis in EVENTUS. After collecting all 29 PERMNO's I was able to use SAS software to extract the Eventus corresponding shareholder returns for the event windows as followed: (0, +12), (0, +24), (0, +36), (0, +48), and (0, +60). They represent the number of months after the first event window of January 2013.

Event Study Methodology:

An event study is usually conducted by establishing windows of time, beginning with the announcement date at 0. This study uses a Market Adjusted Returns Model using Value Weighted Index and Equally Weighted Index. I created five event windows following the annual announcement of ESG scores beginning with January 2013 to January 2017. I compared the results of said windows with the corresponding S&P 500 returns, CRSP Value Weighted returns, and CRSP Equally Weighted returns to determine any statistically significant abnormal returns.

Table 1: Market Adjusted Returns, Equally Weighted Index

Months	N +:-	Mean Cumulative Abnormal Return	Std Csect Z	Generalized Sign Z	Signed Rank
(0, +12)	29 10:19<	-1.16%	-0.643 (0.520)	-2.143 (0.032)	-40.500 (0.391)
(0, +24)	29 24:5>	16.78%	4.531 (<.001)	3.075 (0.002)	166.500 (<.001)
(0, +36)	29 28:1>>>	32.90%	7.467 (<.001)	4.567 (<.001)	216.500 (<.001)
(0, +48)	29 25:4>>>	29.95%	4.792 (<.001)	3.448 (<.001)	195.500 (<.001)
(0, +60)	29 24:5>>	45.57%	4.643 (<.001)	3.075 (0.002)	187.500 (<.001)

Table 2: Market Adjusted Returns, Value Weighted Index

Months	N +:-	Mean Cumulative Abnormal Return	Std Csect Z	Generalized Sign Z	Signed Rank
(0, +12)	29 18:11	5.24%	1.039 (0.299)	1.084 (0.278)	47.500 (0.313)
(0, +24)	29 22:7>	13.48%	3.792 (<.001)	2.571 (0.010)	142.500 (<.001)
(0, +36)	29 24:5>>>	20.54%	4.716 (<.001)	3.314 (<.001)	182.500 (<.001)
(0, +48)	29 23:6>>	25.38%	3.835 (<.001)	2.943 (0.003)	173.500 (<.001)
(0, +60)	29 21:8>	34.40%	3.112 (0.002)	2.199 (0.028)	155.500 (<.001)

The graph depicts the abnormal returns that can be expected by investors during said windows if they were to invest in the ESG Index.
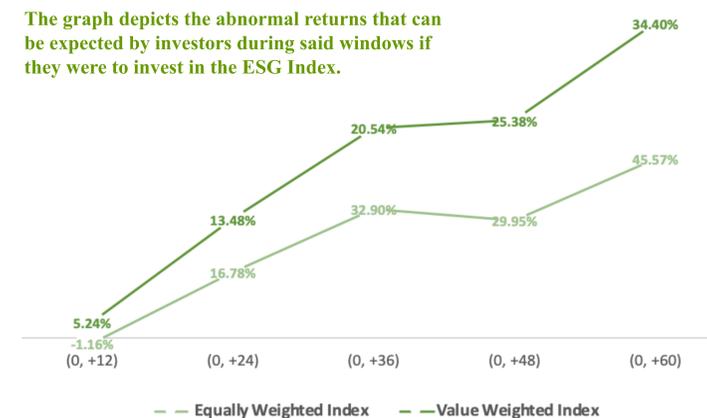
Results

Null Hypothesis : The annual announcement of high ESG scores will not have an effect on shareholder returns in the following period. We do not expect positive or negative abnormal returns.

Alternative Hypothesis: The annual announcement of high ESG scores will have an effect on shareholder returns in the following period. We can expect positive abnormal returns.

Table 1 depicts that in this model, all three Z tests display statistical significance in all but the first event window (0, +12). In window (0, +24) the mean cumulative abnormal return was 16.78 percent, (0, +36) 32.90 percent, (0, +48) 29.95 percent, and (0, +60) 45.57 percent. With that in mind, we can see the last four windows.

Table 2 reflects similar results, with abnormal returns for windows (0, +24), (0, +36), (0, +48), and (0, +60) with 13.48 percent, 20.54 percent, 25.38 percent, and 34.40 percent respectively.

Conclusion

As a result, the p-values of four out of the five event windows surpassed the acceptable ten percent and even five percent significance levels. In many cases, said event windows had a p- value of <0.001 at least in one of the three Z tests in both Equally and Valued Weighted Models. In light of such low p-values the Null is rejected, and the Alternate Hypothesis is adopted. Concluding that the annual announcement of high ESG scores has an effect on shareholder returns. For example, according to the Equally Weighted Index in Table 1, investing in the ESG Index leads to an average 45.57 percent abnormal return compared to the market as a whole during the five-year period. We can make this argument with confidence based on the <.001 p-value in window (0, +60) and a probability of one in a thousand that the outcome occurred by chance. The same conclusion can be made using the Value Weighted Index in Table 2. Investing in the sample of ESG companies leads to an average 34.40 percent abnormal return in comparison to the S&P over the five-year period.

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