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An Evaluation of ESG Funds and Their Performance

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An Evaluation of ESG Funds and Their Performance

by

Mason K. Hook

Advisor: Sergio Santamaria, CFA, CMT

An Honors Thesis in partial fulfillment of the requirements for the degree Bachelor of Science in Business Administration in Finance.

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May 14, 2022

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Abstract

Over the past decade, Environmental, Social, and Governance (ESG) oriented funds have seen a dramatic increase in inflows and many investors have chosen to replace traditional holdings with sustainable ones. Within 5 years, it is projected that ESG exchange traded funds and mutual funds will exceed $53 trillion. Many fund managers claim that ESG funds will outperform traditional funds in the long run. If this claim is accurate, many asset managers would have a fiduciary duty to invest in ESG products. While there is often a non-financial benefit to investing in ESG funds, this paper challenges the claim that they offer a higher risk-adjusted return. By examining the holdings, performance, and expense ratios of non-ESG and ESG funds as well as relying on supporting academic research, this paper concludes that ESG funds offer no statistically significant outperformance over their non-ESG benchmarks.

Introduction

In the early 1970s, two Methodist ministers launched a mutual fund under the ticker PAXWX that directed funds towards environmentally conscious corporations and projects, the first of its kind. This idea was scoffed at because conventional wisdom stated that investors would seek profits regardless of social or economic impact. Conventional wisdom proved wrong. By the year 2025, Bloomberg Intelligence predicts that Environmental, Social, and Governance (ESG) oriented funds will exceed $53 trillion, making up over a third of all assets under management (AUM) as of that date. For comparison, as of year-end in 2021, the entire U.S. equity market sat just above $50 trillion. The term ESG originated in 2005 in a paper titled, “Who cares wins,” which ultimately concluded that ESG factors should be considered as a part of long-term investment strategies. This paper was the result of a conference held by the United Nations Global Compact alongside central bank officials and representatives of buy-side and sell-side firms. What was once a background thought in the mind of investment professionals has become a primary factor that guides investment decisions. Financial firms now have entire departments and executives dedicated to ESG factors. Public companies now spend sizable sums on ESG disclosures and retain staff and consultants that monitor these factors. Nearly every investment bank, asset manager, and consulting firm now integrates ESG metrics into their research and reports. The gold-standard for ESG metrics and scores comes from MSCI, who collects a fee from over 1,700 equity researchers, pension funds, and asset managers to rate their portfolio holdings. MSCI has been publishing ESG style ratings for companies since 1999 and covers over 680,000 securities. MSCI breaks down their ratings into four different categories: overall ESG factors, environmental factors, social factors, governance factors, and EU Paris climate accord benchmark factors. The individual components of the main factors can be seen in Figure 1 below.

Figure 1

MSCI ESG Factor Constituents			
Overall ESG Factors	**Environmental Factors**	**Social Factors**	**Governance Factors**
ESG Score	Environmental Pillar Score	Social Pillar Score	Governance Pillar Score
ESG Rating - Distribution	Environmental Pillar Score - Distribution	Social Pillar Score - Distribution	Governance Pillar Score - Distribution
ESG Rating - Top Ten Constituents	Physical Risk Climate VaR %	Controversial Weapons %	Board Independence
UN Global Compact Violations	Brown Sector Exposure (NACE) %	Tobaco Involvement - Highly Restrictive %	Board Diversity
Very Severe Controversies %	Carbon Intensity	Tobaco Involvement - Moderately Restrictive %	
	Reported Emissions %	Social Violations (Count)	
	Estimated Emissions %	Social Violations (% of Constituents)	
	Wtd Avg Carbon Intensity	Lack of Due Diligence Policy	
	Fossil Fuel Reserves	Female: Male Board Diversity Ratio	
	High Climate Impact Sector %	Total Recordable Injury Rate	
	Green Revenue	Bribery and Corruption Controversies	
	Green Bonds %		

These factors are aggregated together to create an overall ESG score and letter ranking that runs from 0 to 10 and CCC to AAA respectively. These ESG scores matter. A company with a higher MSCI ESG score tends to have higher profitability, lower systematic risk, and a lower cost of capital according to Giese et al. (2019). If ESG factors truly sort companies in a way that places more profitable and less risky companies on top, then these factors could be used to generate alpha, which is defined as excess risk-adjusted return over a benchmark. In fact, many large players in the investment management space, such as State Street Global Advisors boldly claim that their ESG funds harvest alpha. If ESG style funds perform better than their benchmark and the broad market, then many money managers would have a fiduciary duty to allocate investor capital towards these funds. This leads to a multitude of questions, but a few rise to the top. Firstly, how do the holdings of ESG funds and non-ESG funds differ? Secondly, do these funds perform better than their non-ESG counterparts and do they offer any concrete downside risk protection? Thirdly, how does the fee structure of ESG and non-ESG funds differ?

ESG Fund Holdings

As of September 2021, there were nearly 7,500 ESG funds on the market. Many of these are active strategies containing a mix of equity and fixed income securities. For research purposes, only passive investment vehicles tied to published benchmark will be evaluated. The 10 largest ESG Exchange Traded Funds (ETFs) as of January 2022 can be seen below in Figure 2.

Figure 2

Fund	Ticker	Assets ($bn)	Fund Type
iShares ESG Aware MSCI USA ETF	ESGU	25.3	Equity - U.S.
iShares ESG MSCI EAFE ETF	ESGD	7.5	Equity - Developed Markets
Vanguard ESG US Stock ETF	ESGV	6.3	Equity - U.S.
iShares ESG Aware MSCI EM ETF	ESGE	6.2	Equity - Emerging Markets
iShares MSCI USA ESG Select ETF	SUSA	4.7	Equity - U.S.
iShares ESG MSCI USA Leaders ETF	SUSL	4.4	Equity - U.S.
Xtrackers MSCI USA Leaders ETF	USSG	4.3	Equity - U.S.
iShares MSCI KLD 400 Social ETF	DSI	4.2	Equity - U.S.
Vanguard ESG International Stock ETF	VSGX	3.1	Equity - Global
BlackRock U.S. Carbon Transition Readiness ETF	LCTU	1.6	Equity - U.S.

A. MSCI USA Index

ESGU, the largest ESG ETF by AUM tracks the MSCI USA Extended ESG Focus Index, which is built by an algorithm that maximizes the ESG score of the MSCI USA Index by removing constituents. The parent index, MSCI USA Index is not constructed with an ESG focus. Thus, these two indices are ideal candidates to compare their holdings. All data will be as of February 28th, 2022. When analyzing the holdings of the two funds, there are a few noticeable points:

1. The ESG Index is overweight in information technology, real estate, and energy (which comes more from renewable sources) compared to the regular index.

2. The ESG Index is underweight in healthcare, communication services, and financials compared to the regular index.
3. The regular index contains 629 securities, while the ESG index contains 321 securities.
4. The largest 7 securities in each index are the same.

Although the ESG index contains 308 fewer securities than the regular index, the sector exposures remain relatively close. Thus, the ESG index has higher weighting in individual securities than the non-ESG index. The average weighting of a security in the non-ESG index is 0.16%, while the ESG version has an average weighting of 0.31%, nearly double. The ESG index is also more top-heavy in the 10 largest holdings. Figure 3 shows the sector weights for the regular index, and figure 4 shows the sector weights for the non-ESG index.

Figure 3 (Non-ESG)

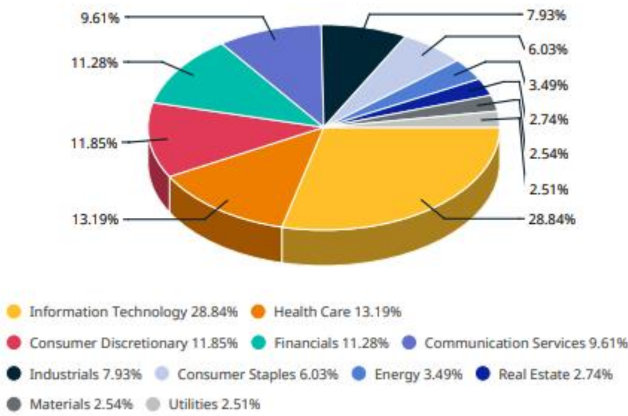
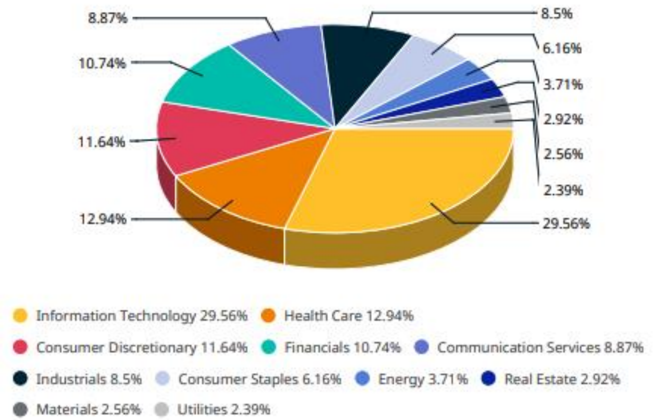


Figure 4 (ESG)



There was a more pronounced difference in weighting at the end of February 2018, with the ESG index having a 149-basis point higher weighting to information technology and 67-basis point lower weighting to energy. The predominant trend seen in this ESG index over time has been higher technology exposure and lower energy exposure. As can be seen visually, the holdings of these two indices remain relatively similar.

B. S&P 500 Index

The S&P 500 is widely regarded as the primary index that investors follow and is passively tracked by ETFs more than any other index. It is a market-capitalization index that includes the 500 largest U.S. domiciled publicly listed companies and has been published since 1957. In 2019, S&P Dow Jones Indices began publishing the S&P 500 ESG Index. According to S&P, "The S&P 500 ESG Index is a broad-based, market-cap-weighted index that is designed to measure the performance of securities meeting sustainability criteria, while maintaining similar overall industry group weights as the S&P 500." These two indices can be easily compared to understand how the holdings of ESG and non-ESG funds differ. All data will be as of February 28th, 2022. When analyzing the holdings of the two funds, there are a few noticeable points:

1. The ESG index is overweighted in information technology, consumer discretionary, and energy.

2. The ESG index is underweight in healthcare, consumer staples, financials, and utilities.
3. The S&P 500 contains 505 securities, while the ESG index contains 309 securities.
4. The top 7 constituents are the same in both indices.

Figure 5 shows the sector weights for the regular index, and figure 6 shows the sector weights for the non-ESG index.

Figure 5 (Non-ESG)

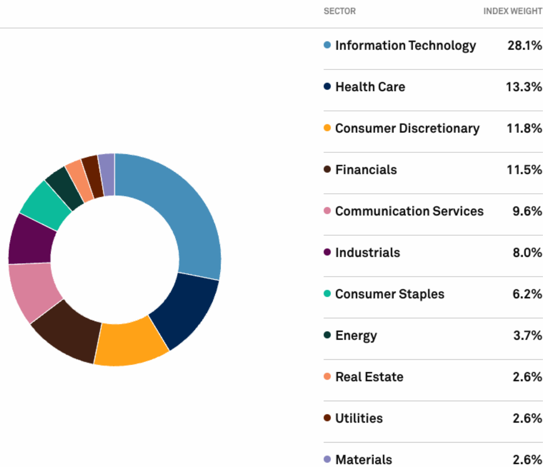
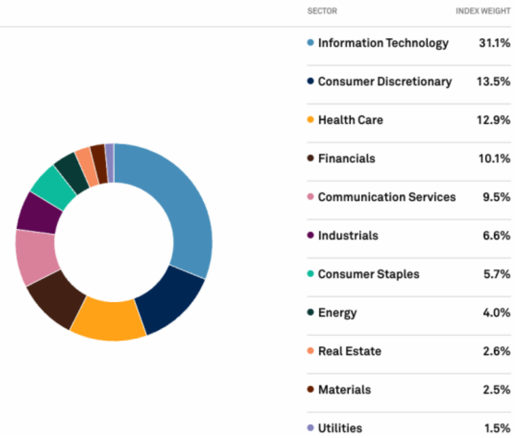


Figure 6 (ESG)



Although the weightings are similar, they are more contrasted than the weighting differences of the MSCI USA ESG and non-ESG indices. It is important to note that the ESG index contains 196 fewer securities than the regular S&P 500, which means that the ESG index less diversified and bears more idiosyncratic (diversifiable, single security) risk than the S&P 500.

C. MSCI EAFE Index

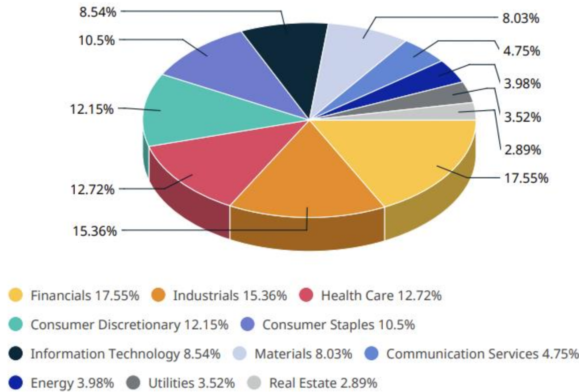
According to MSCI, "The MSCI EAFE Index is an equity index which captures large and midcap representation across 21 Developed Markets countries around the world, excluding the US and Canada. With 822 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country." EAFE stands for Europe, Australasia, and the Far East. This index is tracked by multiple ETFs. MSCI also publishes the MSCI EAFE Extended Focus ESG Index, which filters out companies from the parent index based off ESG criteria. These two indices can also be compared to understand how the holdings of ESG and non-ESG funds differ when it comes to sector weights and country exposure. All data will be as of February 28th, 2022. There are a few noticeable differences between the indices:

1. The ESG index is overweight in financials, information technology, and real estate.
2. The ESG index is overweight in Switzerland and Japan. Japan represents over 22% of the constituents in the index.
3. The ESG index is underweight in consumer discretionary, consumer staples, and communication services.
4. The ESG index is underweight in Germany, The United Kingdom, and France.

Figure 7 shows the sector and country weightings for the MSCI EAFE Index and figure 8 displays the sector and country weightings for the MSCI EAFE Extended Focus ESG Index.

Figure 7 (Non-ESG)

SECTOR WEIGHTS



COUNTRY WEIGHTS

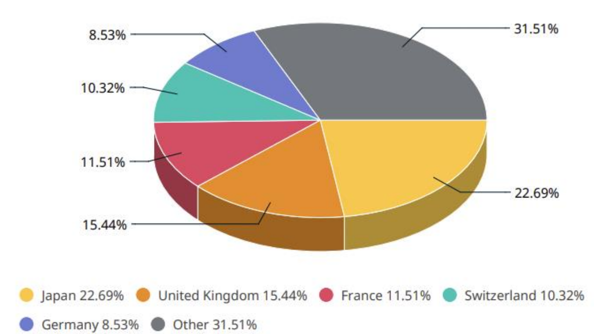
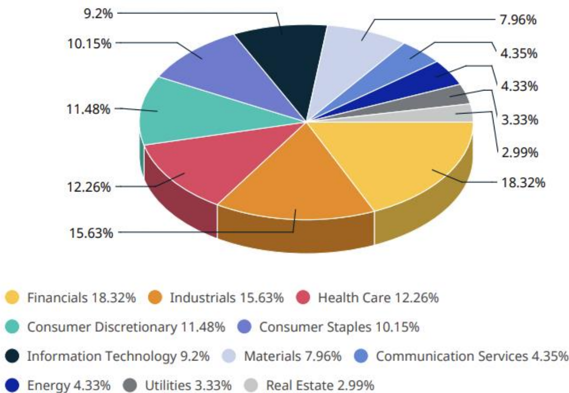
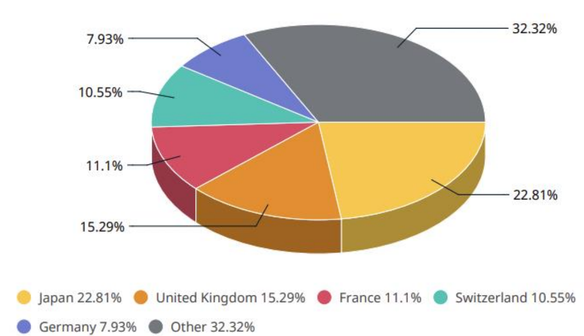


Figure 8 (ESG)

SECTOR WEIGHTS



COUNTRY WEIGHTS



The MSCI EAFE Extended Focus ESG Index has 442 constituents while the regular index has 822, thus meaning the ESG version has higher concentrations in specific companies. The ESG index is more heavily weighted in the top 10 largest securities and its average weighting in a company is 0.23% while the regular index's average weighting is 0.12%.

D. Bloomberg Aggregate US Bond Index

The Bloomberg Aggregate US Bond Index is noted as one of the highest quality indices to track the overall performance of US dollar denominated bonds. It contains a variety of different fixed income vehicles including treasuries, corporate bonds, mortgage and asset-backed securities, and municipal bonds. It has over 10,000 constituents. This index is tracked by a variety of different funds, including the Vanguard Total Bond Market Index Fund (VBTLX) and iShares Core U.S. Aggregate Bond ETF (AGG). Bloomberg, along with MSCI publishes an ESG screened version of the index known as the Bloomberg MSCI US Aggregate ESG Focus Index. This index is also tracked by a variety of funds, including iShares ESG Aware U.S. Aggregate Bond ETF (EAGG). For purpose of examining their holdings, AGG and EAGG as of March 14,

2022, will be used as proxies for the direct indices. There are some notable differences between the different holdings:

1. The ESG version has nearly 120 basis points more exposure to the industrial sector, a slightly higher weighting towards utilities, and a slightly higher weighting to supranational bonds.
2. The ESG version is over 120 basis points underweighted to financials and is slightly underweighted in treasuries.
3. The ESG version has an 80 basis-point higher weighting to BBB or lower quality bonds and an 80 basis-point lower weighting to AA bonds.
4. The ESG version has a slightly longer duration and has a 7.72% weighting in 1-2 year maturities, whereas the non-ESG version has a 10.57% weighting in 1-2 year maturities.

Figure 9 shows the credit quality of the non-ESG version, figure 10 shows the maturity of the non-ESG version, figure 11 shows the credit quality of the ESG version, figure 12 shows the maturity of the ESG version.

Figure 9 (Non-ESG)

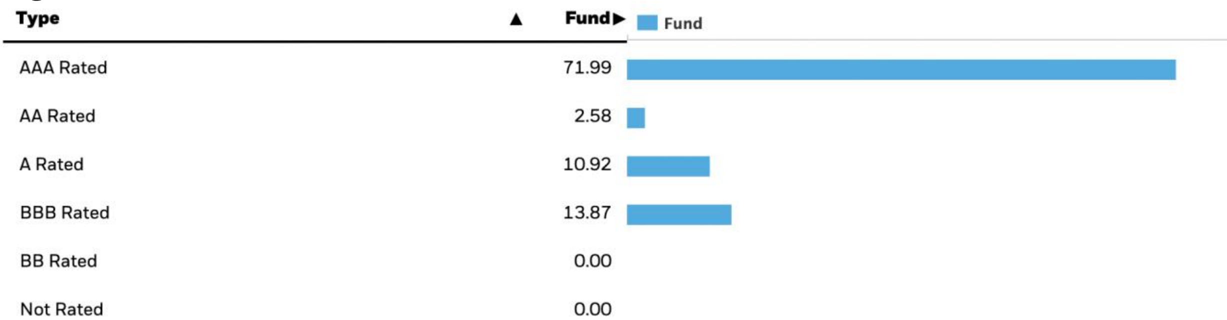


Figure 10 (Non-ESG)

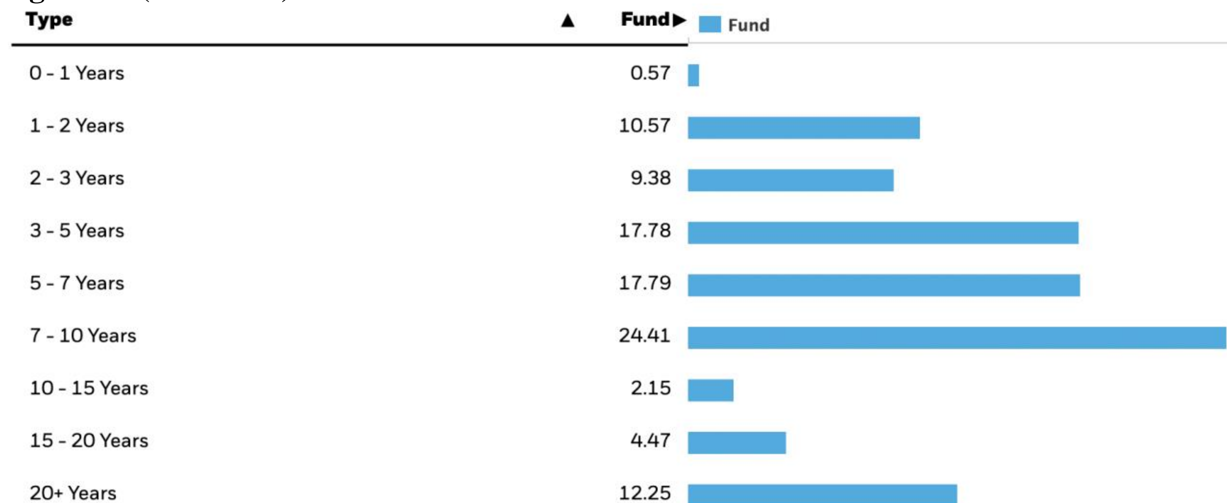


Figure 11 (ESG)

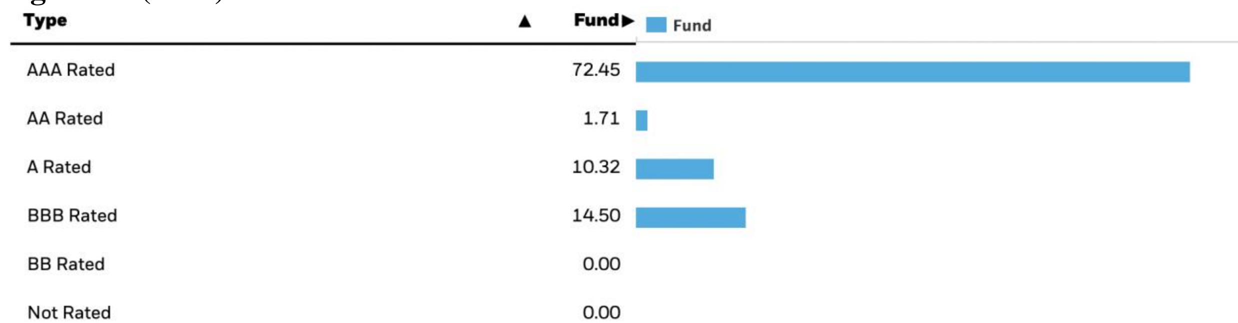
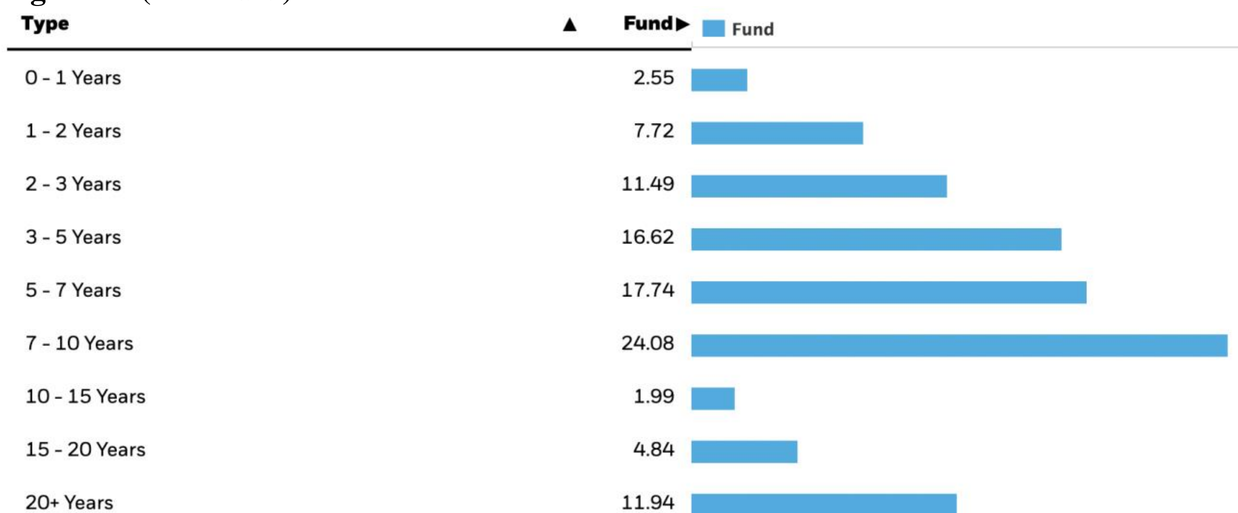


Figure 12 (Non-ESG)



E. Fund Holdings Summary

These holdings are simply a snapshot in time and do not consider the historical holdings of ESG funds broadly. A paper by Bruno et al. (2021) examined the holdings of an aggregate ESG portfolio based off of MSCI data from January of 2008 to June of 2020. The paper found that on average, the ESG portfolio would have had a 12.75% higher weighting towards technology and a -8.73% underweighting in energy. When the author added sector neutrality (took out the ESG sector bias), the fund had a negative annualized return.

ESG Fund Performance

Now that the holdings of ESG and non-ESG funds and indices have been examined, it is important to examine their performance in comparison to their benchmark. In general, since the Great Financial Crisis, it has been shown that ESG funds have had an overweight to technology and an underweight to polluters such as the oil industry. The technology-heavy NASDAQ index has been on a tear. Investors that had an overweight in technology generally performed better than their counterparts. At the same time, oil and energy producers dramatically underperformed the market. The following chart (figure 13) displays the comparative total returns of the NASDAQ, S&P 500, and WTI Oil from February 2012 to February 2022 taken from the Bloomberg Terminal.

Figure 13

The NASDAQ climbed 421%, the S&P 500 gained 290%, and oil fell 37%. ESG funds over the last decade have had a tilt towards technology because these companies generally have lower carbon emissions and are not involved in major polluting practices. The Wall Street Journal reported in February of 2020 that the five most held stocks in sustainable equity funds were Microsoft, Alphabet, Visa, Apple, and Cisco. Since ESG funds have a technology tilt, have they performed better over a recent time horizon?

A. MSCI USA Index

The MSCI Extended Focus ESG index has been published since November of 2014 and has tracked very closely to the MSCI USA Index, its parent index. Since inception of the ESG index, it has an annualized return of 13.22%, while the non-ESG index has an annualized return of 13.06%. As of February 2022, the ESG index also has a 3 basis-point higher dividend yield. The following figure shows the gross return of the two indices and the annual performance since 2015.

Figure 14

CUMULATIVE INDEX PERFORMANCE — GROSS RETURNS (USD) (NOV 2014 – FEB 2022)

ANNUAL PERFORMANCE (%)

Year	MSCI USA Extended ESG Focus	MSCI USA
2021	26.98	26.97
2020	22.66	21.37
2019	32.52	31.64
2018	-4.02	-4.50
2017	21.76	21.90
2016	11.65	11.61
2015	0.77	1.32

As can be seen visually, the ESG index very slightly outperformed the non-ESG index. Since inception, the non-ESG index outperformed in 2 years (2015 and 2017). The return differences are minimal even though the ESG index had a larger weighting to better performing sectors and higher idiosyncratic risk. It is important to note that over a 3-year and 5-year time horizon, the ESG index had a higher standard deviation by 4 basis-points and 11 basis-points respectively,

thus indicating higher volatility. The ESG index also provided no substantial downside protection either. During the rapid sell-off between February 19, 2020, and March 23, 2020, the ESG index only performed 38 basis-points better than its non-ESG counterpart. The technology-heavy NASDAQ posted a near 44% gain in 2020 and technology continued on a tear through 2021. Due to earnings misses, the rise of the Omicron variant of Covid-19, the threat of rising inflation and interest rates, drawdowns in private company valuations, and a variety of other factors, the NASDAQ most recently peaked on November 22, 2021. From then until the end of February, the index declined nearly 12% and entered correction territory. Over the same period, oil rallied over 23% and peaked north of $130 dollars a barrel. In this period of energy outperformance and technology underperformance, the ESG index underperformed the non-ESG index by 61 basis-points. As of mid-March 2022, the non-ESG index performed 72 basis-points better year to date. Finally, it is important to note that the turnover rate (the % of holdings that are sold and replaced in a year) was 22% for the ESG fund and 2% for the non-ESG fund. This large difference leads to more taxable gains generated for the ESG fund, further reducing performance. In summary, the EGS index has very slightly overperformed since inception on an annualized basis, which is correlated with the outperformance of the sectors that the index is more exposed to. Since the technology/oil inversion, the ESG index has underperformed the non-ESG index.

B. S&P 500 Index

Although it has only been published since 2019, the S&P 500 ESG index has been modeled backwards to begin on March 30, 2012. From that date until February 2022, the ESG index, on a total return basis, has outperformed the S&P 500. The following comparative chart (figure 15) pulled from Bloomberg shows the change in total return between the two indices.

Figure 15

Over this period, the S&P 500 achieved a total return of 277%, while the S&P 500 ESG achieved a total return of 294%, a 17% outperformance for the ESG index. As can be seen visually, the indices tracked very closely to one another, with the S&P 500 outperforming the ESG index as a recent as November 2019. The widening of returns between the two funds did not become apparent until after the pandemic crash in March of 2020. During the crash, the ESG fund offered no substantial downside protection, outperforming by 68 basis-points. Since the tech sell-off began in November of 2021, the ESG fund performed 25 basis-points better as of the end of

February 2022. Over the lifetime of the index, during the February-March 2020 sell-off, and the recent market correction, the ESG index has performed better than the non-ESG index when examining total return.

C. MSCI EAFE Index

The MSCI EAFE Extended ESG Focus Index has been published since November 2014. It has tracked relatively closely to the MSCI EAFE Index which it is modeled and benchmarked on. Since inception, the ESG index has an annualized return of 5.45% while the non-ESG index has returned 4.99% annually. The non-ESG index has a 2 basis-point higher dividend yield. Figure 16 shows the returns of the two indices and their annual performances since inception.

Figure 16

CUMULATIVE INDEX PERFORMANCE — NET RETURNS (USD) (NOV 2014 – FEB 2022)

ANNUAL PERFORMANCE (%)

Year	MSCI EAFE Extended ESG Focus	MSCI EAFE
2021	11.66	11.26
2020	8.66	7.82
2019	23.49	22.01
2018	-13.66	-13.79
2017	25.48	25.03
2016	0.85	1.00
2015	0.01	-0.81

The ESG index has provided a better annual return every year except for 2016. As seen with other ESG and non-ESG indices, the performances of the different indices tracked much more closely to one another before the market sell-off in February and March of 2020. During that sell-off, the ESG fund only outperformed by 8 basis points. During the recent market correction beginning in November of 2021, the non-ESG index outperformed the ESG index by 32 basis points. The standard deviation of the ESG index is higher on both a 3-year and 5-year annualized basis, meaning it bears more risk. While the MSCI EAFE index has had a 2.38% turnover in the past 12-months, the MSCI EAFE Extended ESG Focus Index has had a 24.37% turnover. This dramatic change in constituents would have likely eaten away at any net gain over the non-ESG index in an ETF that tracked it. The ESG index also trades at a higher P/E ratio and forward P/E ratio, meaning it is relatively more expensive.

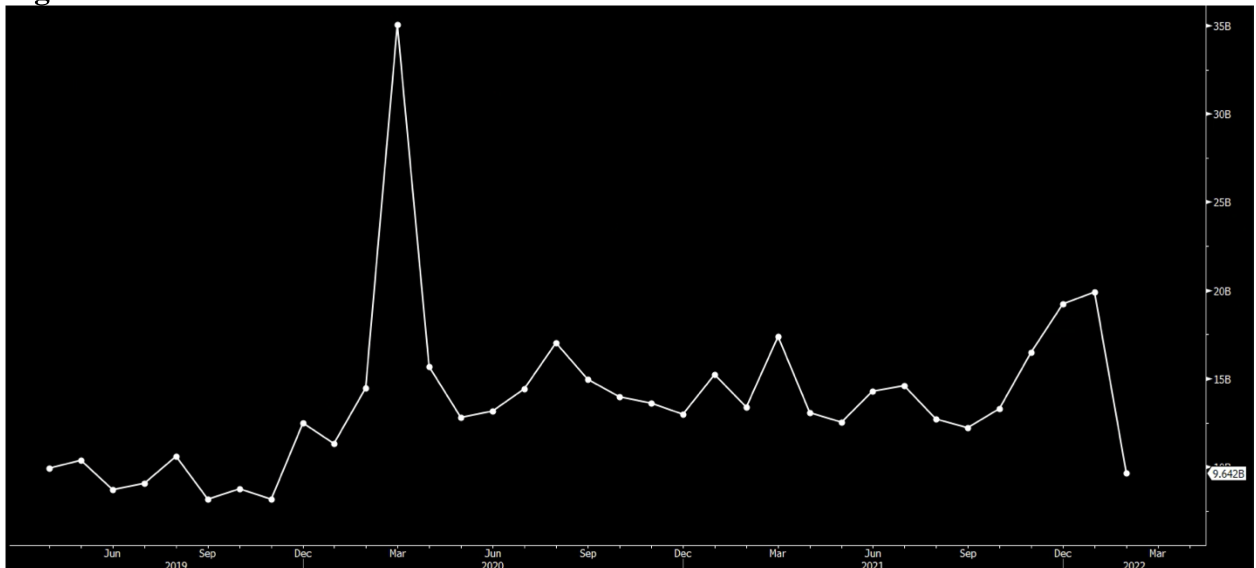
D. Bloomberg Aggregate US Bond Index

To compare the Bloomberg US Aggregate Bond Index to the Bloomberg MSCI US Aggregate ESG Focus Index, ETF proxies will be used that track these indices. The two ETFs that will be used are iShares Core U.S. Aggregate Bond ETF (AGG) and iShares ESG Aware U.S. Aggregate Bond ETF (EAGG). Although AGG has existed since 2013, EAGG and the underlying index were created in the fall of 2018. The following figure displays the comparative total returns of these two funds:

Figure 17

The non-ESG fund returned 13.84%, while the ESG fund returned 13.62%, an outperformance of 22 basis points. The annualized return of the non-ESG fund was 3.94% while the ESG fund was 3.88%. The non-ESG fund had a higher 12-month trailing yield by 69 basis points. The ESG fund did offer some drawdown protection during the pandemic crash, but a variety of other factors are at play in this situation. In March of 2020 when liquidity nearly ran out in the market for individual fixed income securities, ETFs such as AGG were used as a source of liquidity and price discovery for the bond market. The large deviation that these ETFs had from their NAV, which would normally be seen as a failure on the part of asset managers, was just a function of supply and demand for a vehicle that could be used as a price proxy. The following chart displays the average monthly volume in AGG over the past 36 months.

Figure 18



This massive increase in volume clouds whether an ESG Bond ETF is going to provide better downside risk protection. From February 19, 2020 to March 23, 2020, EAGG outperformed AGG by 97 basis points. The total return of the two ETFs during the recent NASDAQ sell-off were nearly identical, with AGG underperforming by 4 basis points. Year-to-date, AGG is

outperforming by 45 basis points. Since inception, the non-ESG bond fund has performed better on a total return basis, even though the ESG bond fund is supposed to hold 'greener' bonds that offer more competitive yields.

Fee Structure of ESG and Non-ESG Funds

Inflows into ESG funds over the past 5 years have predominantly been into passive vehicles. Every year since 2016, passive ESG funds have grown more in AUM than their active counterparts, with active funds losing AUM multiple years. Active ESG fund net flows are now around $0 on a yearly basis, while passive funds are rising. The predominate way to access indexed strategies is through an ETF. Unlike a more traditional investment vehicle such as a mutual fund, ETFs trade on an open exchange. This means that there are no minimum buy requirements (except for the trading price of the security), options can be traded on them, and the fees are much lower. These fees are paid to the asset manager that issues and manages the fund. This is often referred to as the expense ratio. For an ETF, these fees are subtracted daily by the fund issuer from the fund NAV. This means that an investor never sees a fee get subtracted on their statements. As of August 2021, the expense ratio for a passive ETF was 0.13%, whereas the cost for an active fund was 0.66%. Although these expense ratios seem miniscule, they can have a dramatic impact on total returns over an investor's lifetime. This paper has already discussed how the holdings of ESG and non-ESG funds differ, and the truthful answer is not that much. Additionally, although there are some small performance differences between ESG and non-ESG funds, the differences fail to show that ESG factors can provide alpha over the long run. Over a three-year period (February 2019 to February 2022), the MSCI USA Index and the MSCI Extended Focus ESG Index had a correlation of 0.997, the MSCI EAFE Index and the MSCI Extended Focus ESG Index had a correlation of 0.999, and the S&P 500 and the S&P 500 ESG had a correlation of 0.998. These indices are highly correlated and move near identically. With performance and holdings similar non-ESG funds, it would be logical to assume that the fee-structure is similar. However, even passive ESG funds often charge higher expense ratios than their non-ESG counterparts. The indices previously used to look at holdings and returns can be examined to compare expense ratios.

A. MSCI USA Index

The MSCI USA Index and the MSCI Extended Focus ESG Index are tracked by a variety of ETFs. The MSCI USA Index is predominately tracked by European asset managers and thus are UCITS funds. UCITS funds have a designation that allow them to be freely traded in the European Union regardless of an investor's country of origin. This additional layer of complexity often raises the expense ratio of these funds. The following table uses data provided by fund issuers who track the MSCI USA Index and the MSCI Extended Focus ESG Index and displays their expense ratios.

Figure 19

MSCI USA Index			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
Invesco	Invesco MSCI USA UCITS ETF	MXUS LN	0.05%
DWS X-Trackers	MSCI USA UCITS ETF	NDDUUS	0.07%
UBS	UBS MSCI USA UCITS ETF	IE00B77D4428	0.07%

MSCI USA Extended Focus ESG Index			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
iShares	iShares ESG Aware MSCI USA ETF	ESGU	0.15%
iShares	iShares ESG Aware MSCI USA ETF	XSUS	0.22%

The cheapest MSCI USA Index tracker is only 5 basis points, while the cheapest way to access the MSCI USA Extended Focus ESG Index is 15 basis points. To illustrate the impact of expense ratios, imagine a hypothetical investor placing $1,000,000 into the cheapest versions of these two funds and holding them for 10 years at a 7% annual return. The non-ESG fund would have cost the investor $9,173, while the ESG fund would have cost the investor $27,404. Due to the nature of compounding, the returns of the two funds will diverge further as time goes on since the appreciable capital in the ESG fund will be slightly less every year. When an investor also considers the 22% holding turnover ratio for the ESG funds compared with the 2% turnover ratio for the non-ESG funds, the tax implications would further dampen the expense-ratio adjusted returns. Holding an ESG version of the MSCI USA Index provides no statistically significant outperformance over the non-ESG version, and its added cost may result in an underperformance.

B. S&P 500 Index

The S&P 500 was the first index ever tracked by an ETF and is still today the most widely tracked index by AUM. In recent years, fund providers have also begun to track the S&P 500 ESG Index. The following figure shows the difference in expense ratios for the ETFs that track theses indices:

Figure 20

S&P 500			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
State Street	SPDR S&P 500 ETF	SPY	0.09%
iShares	iShares Core S&P 500 ETF	IVV	0.04%
Vanguard	Vanguard S&P 500 ETF	VOO	0.03%

S&P 500			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
DWS X-Trackers	S&P 500 ESG ETF	SNPE	0.10%
State Street	SPDR S&P 500 ESG ETF	EFIV	0.10%
Invesco	Invesco S&P 500 ESG UCITS	SPXE	0.09%

Both indices have very cheap trackers, but the non-ESG version is significantly cheaper percentage wise. Using the same hypothetical $1,000,000 investment in the cheapest U.S. domiciled fund, the non-ESG fund would cost $5,508, while the ESG fund would cost $12,799. Of all the indices examined, the S&P 500 ESG showed the greatest outperformance over its benchmark. As indicated previously, the two funds tracked very closely together until the COVID-19 pandemic when the ESG fund began to outperform, largely due to its technology exposure and lack of exposure to pandemic affected industries. The expense ratio and increased turnover in the ESG index is not large enough to diminish its outperformance. The ESG index very slightly outperformed the non-ESG index.

C. MSCI EAFE Index

The MSCI EAFE Index was once tracked by a variety of ETFs, but in recent years many fund issuers have shifted towards a MSCI World index that does not have a comparable ESG index. Fortunately, there is still one fund issuer that tracks the MSCI EAFE Index and the MSCI EAFE Extended ESG Index. The following table displays these ETFs.

Figure 21

MSCI EAFE Index			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
iShares	iShares Core MSCI EAFE ETF	IEFA	0.07%

MSCI EAFE Extended ESG Index			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
iShares	iShares ESG Aware MSCI EAFE ETF	ESGD	0.20%

A $1,000,000 investment in the non-ESG ETF would cost an investor $12,831 over a 10-year period, while the same investment in the ESG fund would cost $36,630. As with the MSCI USA index, it is important to note once again that the MSCI EAFE index had a 2.38% turnover in the past 12-months, while the MSCI EAFE Extended ESG Focus Index has had a 24.37% turnover. The ESG fund also had a higher standard deviation. Investing in the ESG fund over the non-ESG fund would have come with comparable returns, higher risk, and a higher expense ratio.

D. Bloomberg Aggregate US Bond Index

The Bloomberg Aggregate US Bond Index is tracked by a variety of ETFs and the Bloomberg MSCI US Aggregate ESG Focus Index is tracked by one asset manager. The following table displays these funds and their expense ratios.

Figure 22

Bloomberg Barclays U.S. Aggregate Index			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
Vanguard	Vanguard Total Bond Market ETF	BND	0.03%
iShares	iShares Core U.S. Aggregate Bond ETF	AGG	0.04%
State Street	SPDR Bloomberg U.S. Aggregate Bond UCITS	LBUSTRUU	0.17%

Bloomberg MSCI US Aggregate ESG Focus Index			
Fund Issuer	**Fund Name**	**Ticker / ISIN**	**Expense Ratio**
iShares	iShares ESG Aware U.S. Aggregate Bond ETF	EAGG	0.10%

A $1,000,000 investment in the non-ESG ETF would cost an investor $5,508 over a 10-year period, while the same investment in the ESG fund would cost $18,307. Before expense ratios were even considered, the non-ESG index already provided a greater return than the ESG index on a total and annualized basis. Investing in the ESG version of the Bloomberg Barclays U.S. Aggregate index leads to smaller returns, higher fees, and more volatility.

E. Fee Structure Summary

ESG indices and their parent indices are nearly perfectly correlated, and their returns are nearly identical. ESG indices when tracked by an ETF lead to higher fees, a larger tax burden due to a higher turnover ratio, and generally more volatility. In March of 2021, the Wall Street Journal found that ESG firms in the aggregate charge more than non-ESG funds. The same report also found that ESG fund fees continue to reduce year over year, and the funds with the smallest fees are seeing the largest inflows. This follows a broader trend in the market of decreasing fees alongside greater accessibility to the markets. Competition among ETF providers is fierce, and some fund providers have reduced their fees to 0% on certain products that are only available to customers who use their brokerage service. ESG funds, being a more recent invention, are simply further back on the fee-reduction timeline. No doubt, asset management firms have seen an increase in revenue from investors re-allocating from traditional funds to ESG funds, but there is no research to support the notion that asset management firms are charging more just because they can. The advent and expansion of ESG has led to higher costs to these firms who employee professionals dedicated to ESG research and implementation. That is to say, the higher fees that ESG funds charge may be justified in many instances. If the broad trend continues, ESG fund fees will continue to decrease over the next few years. Nonetheless, investment professionals are continuing to choose to pay a premium for ESG funds right now and are increasing their allocation to ESG funds year over year. Why are investors continuing to invest in these funds if they have similar performance and higher fees?

ESG Investor's Argument

Many investors consider credit risk, inflation risk, sector risk, and a variety of other risk factors when allocating capital. Many investors now also consider climate risk a pertinent input. As the climate changes, companies will be forced to adapt their business models. For example, as companies attempt to reduce their carbon output, more capital will be allocated to new energy solutions that are carbon neutral. If an investor believes that fossil fuels will play less of a role in the future and technology will play more of a role, it makes sense to go long technology and short fossil fuels. This is essentially what many ESG funds do. More so than just returns, many

investors now believe that a company should exist to benefit more than just its shareholders and should focus on benefiting all stakeholders that are influenced by it. Companies that are held by ESG funds are more likely to have diverse boards, have stronger internal controls, and are less exposed to certain industries like weapons producers. Investors are paying a premium to allocate their capital towards a factor that they believe will provide them an outperformance in the long run, or for moral reasons they believe investing in ESG should be a priority. As mentioned in the introduction of this paper, the first ESG style fund was launched due to religious conviction. Just as some investors choose to allocate their capital towards factors like value, momentum, size, and volatility, many will choose to allocate towards ESG. ESG investors also argue that by allocating away from 'dirty' industries, they are playing a part in increasing the cost of capital for these companies, thus motivating them to make positive changes. Furthermore, when as asset manager runs a fund, they are given the shareholder voting rights rather than the investor who places their money in the fund. This allows the asset manager to have concentrated power to make change to the boards of companies and alter their policies. Because of this power, there are newer ESG funds that invest in all companies within an index regardless of their ESG score, but they use their collective voting power to push ESG issues on companies they would like to improve. One such fund is Engine No. 1, which tracks the S&P 500 under the ticker VOTE. Engine No. 1 touts the idea of passive indexing with active ownership, advocating for "leveraging investor power to influence board elections and other shareholder votes; holding companies accountable for their environmental, social and governance commitments; investing to drive value - not divesting; and driving long-term economic value." VOTE, unlike many other ESG funds, charges an extremely low expense ratio of 0.05%. This strategy has proved successful. Shortly after the fund launched in June of 2021, Engine No. 1 targeted Exxon Mobil with the goal of getting the company to reduce their carbon footprint. Engine No. 1 used their voice to get other asset managers on board and successfully replaced three board members. The result shocked Wall Street and led to a large increase in VOTE's AUM. Investors chose to allocate their capital to VOTE not because they would achieve a better return, but because they believe they can create positive change. ESG AUMs will more than likely continue to increase not because of better returns or ESG being an untapped source of alpha, but because of changing investor priorities. ESG fund's comparable or sub-par return does not mean that sustainable investing lacks value or should be disregarded by investors. ESG investing can play a crucial role in some individual investor portfolios, and a few valuable improvements can be made to increase the attractiveness of ESG investing.

Conclusion

Since the advent of the term 'ESG' in 2005 the industry has grown from nothing to now representing over 30% of assets under management. Index providers, such as MSCI and S&P, are now publishing ESG indices that make it far easier for ETFs to track. These ESG indices very closely track their parent indices and have extremely high correlations (~.975 and higher). The holdings of these funds have historically differed with ESG funds having a lower exposure to oil and other fossil fuels and a higher exposure to technology. Since the great financial crisis, technology has boomed, and oil has lagged. Thus, ESG was set up to achieve returns greater than the broad market and the benchmarks that the funds were stacked against. Largely, this did not happen. Any excess returns that ESG funds achieved were often minimal and further reduced by high expense ratios and high turnover. ESG funds broadly carry higher risk (higher standard deviation), which investors seem not to be compensated for. This paper found that investing in

ESG strategies does not provide alpha. This conclusion is supported by other papers such as a 2019 report published by Wayne Winegarden and the Pacific Research Institute. This study took a longer-term approach than this paper and evaluated 18 ESG funds that had existed for over 10 years and looking at the hypothetical growth of $10,000 placed into the S&P 500 and the same investment into an ESG portfolio holding those 18 funds. The ESG portfolio performed 43.9% worse than the S&P 500, and over a 10-year investment horizon, only 2 ESG funds outperformed the S&P 500. That 2019 report also found that ESG funds over a 10-year horizon were often more concentrated and top-heavy compared to the S&P 500, meaning that they had a larger allocation to the 10 largest holdings in their portfolio. Bruno et al. (2021) found that studies showing ESG can provide alpha over the long run are flawed. The paper showed that ESG funds often have exposure to other factors that drive stock performance compared to their benchmark, and any outperformance should be attributed to these factors such as value and momentum. The authors concluded that ESG funds broadly have seen a 1.7% higher return due to these quality factors that is not related to ESG. In the conclusion of the paper, the author said, “While many of the ESG strategies have positive returns, adjusting these returns for risk shrinks alpha to zero. Sector biases and exposures to equity style factors capture the returns of ESG strategies.”

ESG investing provides value to investors, but that value is not alpha. Investors are allocating their capital in a way that they view as more socially responsible and are making a calculated call that climate risk will materialize and reduce the returns of the market relative to their ESG portfolios. Certain regulatory improvements can be made to increase confidence in ESG ratings and thus increase confidence in ESG funds. ESG investing has the potential to make the world a better place, but there is no guarantee that it will do that for your portfolio.

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