ENVIRONMENTAL, SOCIAL AND GOVERNANCE AWARENESS AROUND RETIREMENT AND MUTUAL FUNDS SPACE

Fifth UN PRME NE Conference
Sustainable Development Goals:
Transforming Business Education and Practice
October 29, 2020

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ESG Integration in Mutual Funds and ETFs

Stock market returns in 2018 were the worst since 2008, and bond market returns were the worst since 2013, yet both ESG equity and bond funds garnered positive net flows.

$2.6 trillion or 22% of total SRI assets were managed through registered investment companies such as mutual funds, exchange traded funds, variable annuities and closed-end funds

Globally, there are now around 182 ETFs that incorporate environmental, social and governance factors into their investment strategies, with roughly $20.7 billion in assets under management, according to the most recent data from FactSet. Fifty-nine of these ESG funds, or about a third, were launched in 2018 or 2019, according to the data.

While socially responsible ETFs tend to be more expensive than market-cap-weighted index funds, issuers have been lowering prices to make their offerings more competitive.

A total of 37 new ESG mutual funds opened in the US during 2018 in addition to another 63 funds that added ESG criteria to their prospectuses. This expanded the number of ESG funds by 50% [Hale (2)].

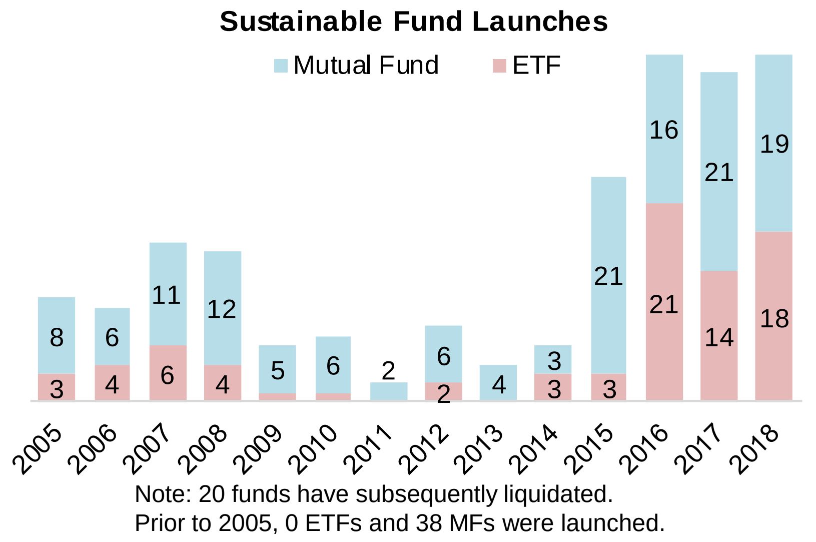
In 2020 there is renewed interest in ESG funds on the heals of the pandemic.

Counting ESG Funds

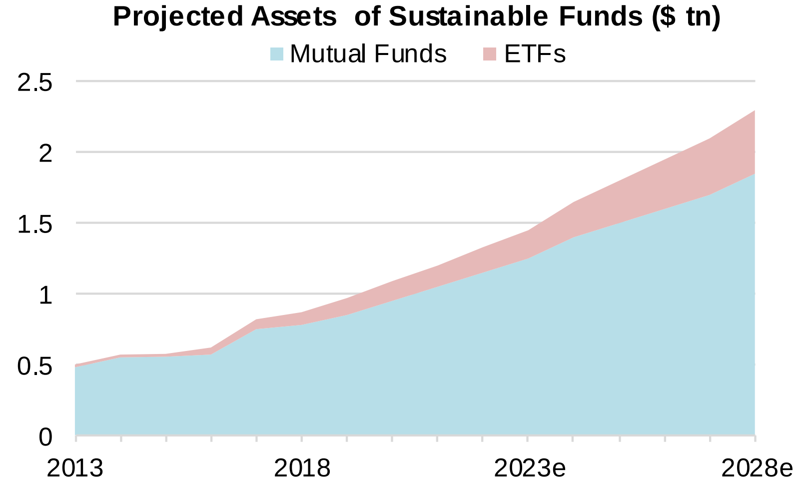
Morningstar counts 595 "socially conscious" mutual fund strategies with total Assets Under Management (AUM) of $758 billion out of 8,014 total mutual funds representing $20.8 trillion in assets. Only 224 of the 595 funds employ any exclusionary screening. Also, only 132 of the 595 include an ESG-related keyword in the name of the fund; and, this more ESG-focused group manages just $52 billion in AUM.

eVestment classifies 641 pooled/mutual fund strategies as "managed with ESG considerations," 556 as using "an ESG integration investment approach," and 72 with "a sustainability-themed investing process" out of 2,455 total funds.

Lipper categorizes 870 ESG fund share classes overshadowed by more than 23,000 non-ESG share classes.



Source: Hale (2)



Source: BlackRock

Introduction

Increased interest in ESG

Investments managed under environmental, social, and governance (ESG) criteria are experiencing a new wave of adoption. The recent growth in number of products and amount of assets managed with ESG warrants further inspection.

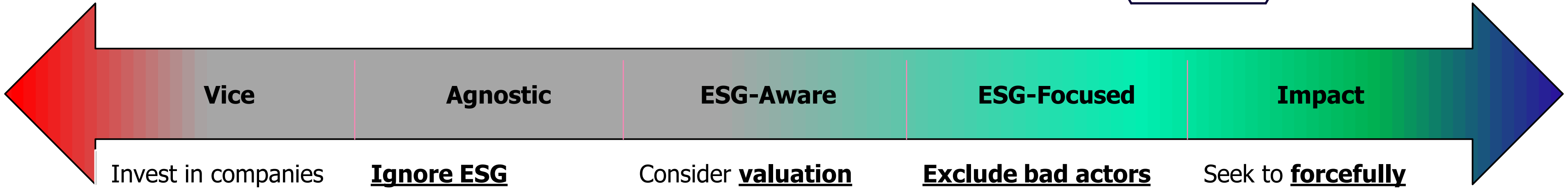
Challenges

Our initial review of this subject found that ESG is an evolving and maturing space and implementing ESG options in a corporate retirement plan is currently encumbered by:

- Lack of standardization; framework, terminology, and reporting continue to evolve for asset managers, issuers, and investors
- Weak public ESG awareness and lack of information on what participants want
- Often, failure to attract significant assets when ESG options are added to plans
- Questionable benefits to performance accompanied by relatively high fees
- Limited selection of established products, many of which have short track records, low manager tenure, and little AUM
- ESG-focused funds that satisfy a narrow segment of participants; ESG-aware funds which attempt to appeal to everyone at the cost of potentially satisfying no one

Exploratory Fund Search

This presentation seeks to further explore the subject, and spectrum, of ESG funds with a focus on ESG-aware, ESG-focused, and Impact funds, as defined below.

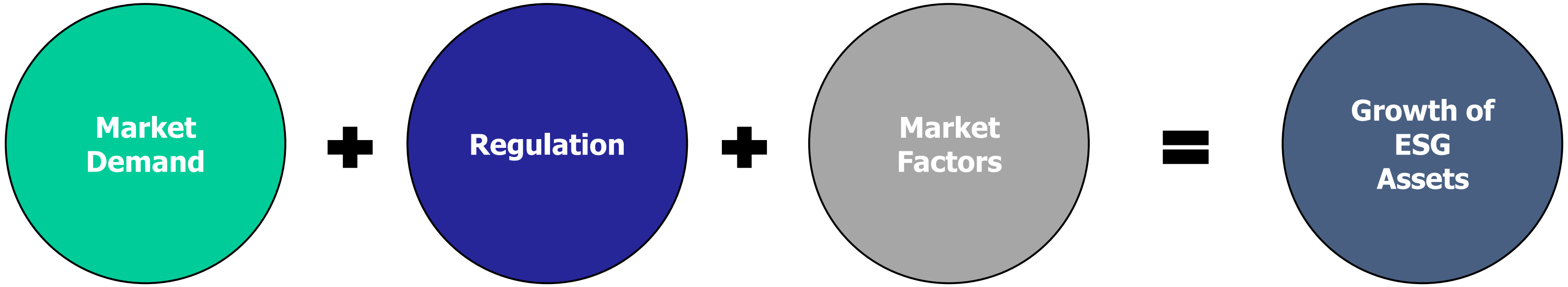


Vice	Agnostic	ESG-Aware	ESG-Focused	Impact
Invest in companies devoted to behaviors that are traditionally regarded as **morally questionable vices**	**Ignore ESG** measures, scores, rankings, and principles	Consider **valuation implications of ESG risks and opportunities** alongside traditional factors / fundamentals	**Exclude bad actors** from the investment universe and/or amplify **best-in-class ESG leaders**	Seek to **forcefully generate positive social and/or environmental impact** alongside a financial return.

ESG Adoption Drivers

Environmental, social, and governance (ESG) is an investment solution based on the philosophy that ESG analytics can complement quantitative or fundamental investment techniques so as to mitigate risks or capture new opportunities.

Over the next decade, drivers of increasing ESG assets are likely to come from:



- Millennials
- Women
- Students
- Endowments

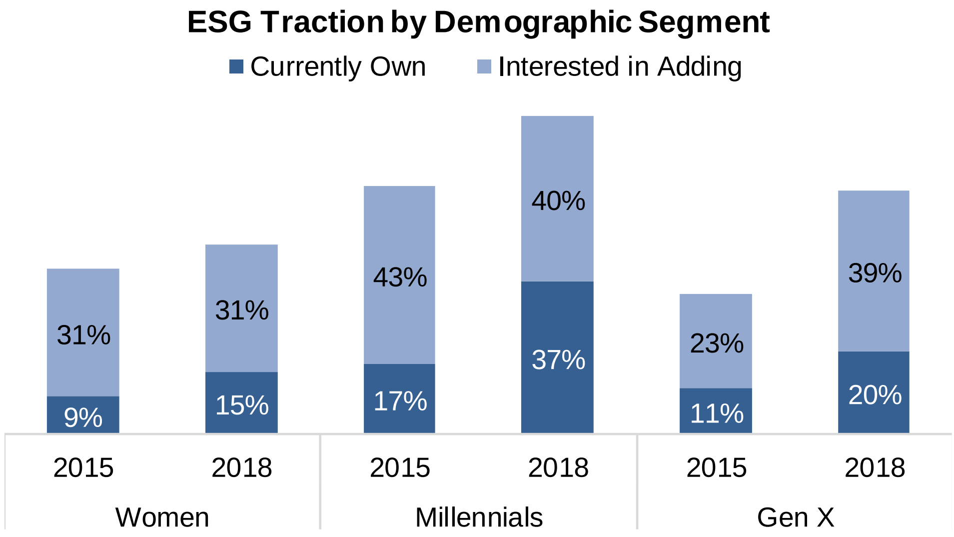
- Government Policy Changes
- DoL Guidance

- Risk Mitigation
- Seeking to Improve Performance

While only 6% of high net worth baby boomers were familiar with the term "ESG investing," 80% of high net worth investors aged 23 to 39 knew of the label; 47% of the HNW millennials had made some kind of values-based investment versus 14% of those over 60 [Crossmark].

A survey by Bank of America's private wealth management arm found that 53% of high-net-worth respondents consider a company's ESG record when making an investment decision. Responses were highest from women (64%), Generation X (65%), and millennials (87%). Surveys also show women are more inclined to be interested in impact investing than men – 70% versus 30% [BofA].

Comparing the survey results from 2015 and 2018 tells that millennials have lead adoption over Generation X, and indicates ESG ownership has grown significantly within the pool of respondents. However, ESG traction appears to be growing more slowly with the women surveyed.



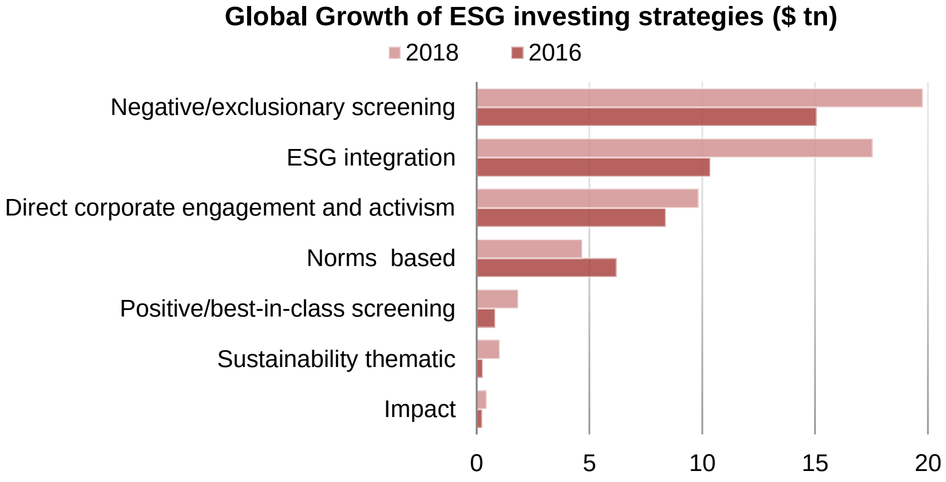
Current ESG Investment Approaches

- **Negative/Exclusionary Screening:** The exclusion from a fund or plan of certain sectors or companies involved in activities deemed unsustainable or controversial. (Ex. Excluding Tobacco, fossil fuels related funds)
- **ESG Integration:** The systematic and explicit inclusion of ESG risks and opportunities into the process of financial analysis, which can include adjusting valuations based upon ESG-related risks and opportunities and identifying and measuring the impact of off-balance-sheet ESG-related assets and liabilities. This can range from a robust bottoms-up ESG analysis to a lighter factor-oriented integration.
- **Direct Corporate Engagement and Activism:** Direct and forceful involvement with corporations to spearhead the adoption and improvement ESG practices.
- **Norms Based Screening:** Replication or close tracking of a proprietary or established third party index of securities issued by ESG-friendly companies. Index construction may take a top-down approach using easily-quantifiable measures or statistics to score and rank companies.
- **Positive/Best-in-Class:** Investment in sectors, companies or projects selected for positive ESG performance relative to industry peers. Also, includes avoiding companies that do not meet certain ESG performance thresholds.
- **Sustainability Themed Investing:** Thematic portfolio construction around specific ESG areas, such as gender-lens investing, clean technology, sustainable food and agriculture, renewable energy, or place-based investing.
- **Impact Investing:** Investment in companies, organizations and funds with the explicit intention to generate positive social and environmental impact alongside a financial return.

These ESG incorporation strategies are not mutually exclusive, and money managers often employ multiple approaches in tandem. There is also little standardization; this terminology is neither comprehensive nor universal.

The two ESG incorporation strategies that are most broadly employed today, based on the assets affected, are exclusionary screening and ESG integration. The current focus of DC plans is positive/best-in-class and ESG integration strategies [Callan].

ESG integration is gaining traction faster than other approaches. This is likely due to its broad appeal and promise of improved risk-adjusted performance by acting as a complement to non-ESG investment practices.



ESG Criticism

In an efficient market, does ESG matter?

While ESG proponents may claim that investors should let their dollars do good by supporting the stock prices of good actors and avoiding the bad, such efforts may be in vain. Non-ESG investors and vice funds (e.g. mutual fund VICEX) stand ready to buy stocks eschewed by ESG investors. The imbalance between ESG and non-ESG would need to be rather lopsided for stock prices to be meaningfully affected. Even under a liberal definition of what constitutes ESG investment, that point is still far from reality.

Greenwashing – Basically paying lip service

The one place ESG does seem to link concretely to higher profits is in mutual fund fees. ESG funds attracted in-flows of $3 billion in first half of 2019, while non-ESG funds experienced net outflows. Since 2015, clients have pulled a net $860 billion from actively managed funds, while adding a net $2.22 trillion to cheaper funds that are passively managed. Slapping an ESG label on a fund is becoming a tempting profit center for investment managers regardless of their commitment to ESG practices and a way to modestly stem both the fee compression and outflow of assets in actively managed strategies.

Transforming funds into sustainable offerings is a way for asset managers to build their sustainable investing business without creating new funds from scratch and having to wait for them to reach scale [Hale]. For example, Goldman Sachs added ESG criteria to its International Equity Fund, which is now Goldman Sachs International Equity ESG Fund and Putnam in 2018 completely retooled its actively managed, $4.5 billion Multi-Cap Growth Fund and renamed it the Putnam Sustainable Leaders Fund, with an emphasis on corporate sustainability metrics alongside its regular stock selection criteria. Aberdeen, J.P. Morgan and Morgan Stanley, on the other hand, simply added "ESG considerations" to the prospectuses of many of their funds without necessarily changing the portfolios.

ESG is not a panacea

The ESG fund that tries to be everything to everyone ends up satisfying no one. Some industries pose a problem for generic ESG managers. For example, nuclear power may be good for fighting climate change, but is it good for pollution more broadly, and is it sustainable compared to renewable energy resources? Religious investors may generally oppose abortion, but others may view accessibility to abortions as an overall positive for society. In any case, whatever ESG criteria might lead to superior risk-adjusted performance are not coincidentally going to be the same criteria that most align with participants' personal values. There has to be a trade-off between performance and values.

Time will tell

If ESG considerations are relevant to investment performance, they will eventually become universally accepted by the academic and professional communities. As that happens, investing in ESG will likely become easier and more effective. As, public and regulatory acceptance increase, the hurdle to educating participants will decline. As ESG funds proliferate and grow in size, so will their track records, resources, manager tenures, and selection. At the same time, their fees should, hopefully, decrease. Does the potential benefit of early adoption outweigh the risk?

ESG Fact and Fiction

At the start of 2018, global sustainable investment reached $30.7 trillion, a 34% increase in two years. These numbers are based on a very loose definition of sustainable investment from the Global Sustainable Investment Alliance (GSIA). Similarly, US Sustainable Investment Forum (SIF) counts over $12 trillion, roughly 26% of US investments, as falling under sustainable, responsible, and impact investing (SRI). Another source cites 7% of corporate Defined Benefits (DB) plans and 24% of Defined corporate (DC) plans now include ESG investments in their portfolios [Eezokoli].

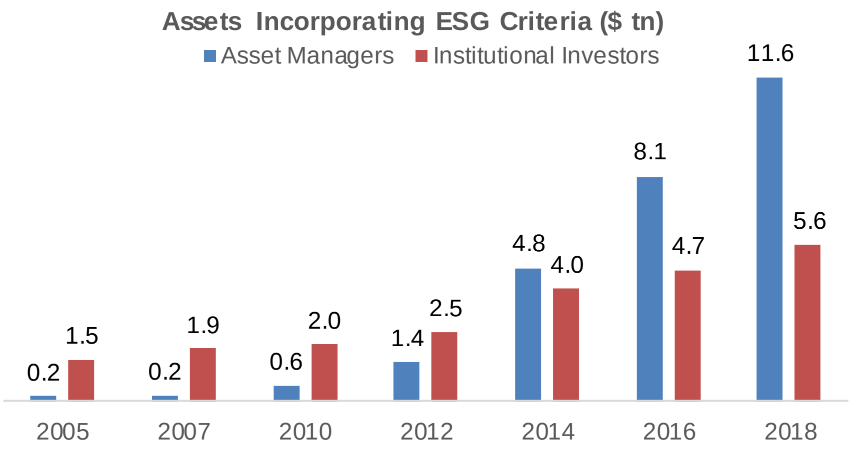
These are overly broad estimates, mainly due to the fact that many investment managers will now look at some sort of ESG information during their investment analysis. A growth manager may be cautious about investing in high P/E companies, but that does not make them a value manager, it merely suggests they are considering what they believe is any and all potentially relevant information.

ESG options are available across asset classes, but many funds purporting to consider ESG criteria do not seem to substantially adhere to ESG principles in practice. Several investment managers have started adding blanket ESG statements or labels to many of their non-ESG funds. In the first half of 2019, approximately 100 non-ESG mutual funds updated their prospectus to include ESG language, doubling what existed [Benjamin]. Of the 69 mutual fund strategies offered by Morgan Stanley, about half are reported to Morningstar as being "socially conscious." Only 1 of these funds has anything related to ESG in its name. More critically, 10 of the 25 "socially conscious" Morgan Stanley equity funds ranked in the bottom decile of Morningstar's ESG scoring. Similarly, JP Morgan now sports a "socially conscious" label on 30% of its 121 mutual fund strategies in Morningstar's database and many of them rank in the bottom quartile of peers for ESG.

An Apparent Explosion in ESG Activity

In 2005, US SIF surveys showed asset managers allocated far less to ESG mandates than the total institutional assets claiming ESG incorporation. Although ESG mandates seem to have swelled tremendously, institutional assets incorporating ESG have not even doubled (after adjusting for market returns). 84% of advisors reported their clients requested Responsible Investing strategies, yet only 44% of them said Responsible Investing is important to their practices.

ESG funds pulled in nearly $5.5 billion of new money during 2018 and a record $8.9 billion in the first half of 2019. But a good portion of those assets are in funds that did not start out as ESG products but were repurposed. Some managers simply made a change to the previously plain-vanilla fund's prospectus, adding a gloss of verbiage about using ESG criteria, without changing the fund's holdings.



In 2018, 63 existing funds added ESG criteria to their prospectus for the first time; only 11 of those funds involved a noticeable makeover with changes in the funds' holdings. Total AUM in ESG funds was $161 billion at the end of 2018, but $72 billion was in repurposed funds.

Inclusion of ESG in Corporate Retirement Plans

When a narrower, ESG-focused definition of ESG or SRI is applied, 401(k) plans with ESG funds represent a small minority of all plans and allocation to the ESG option, when offered, is often low. Nevertheless, sustainable investment options are gaining traction as plan sponsors work to increase engagement and align DC menus with participant demand and institutional values, all while being conscious of their fiduciary responsibilities. In specific, Northern Trust cites younger participants and senior company management as driving 401(k) adoption [Beers].

ESG proponents suggest adding ESG to DC plans to:

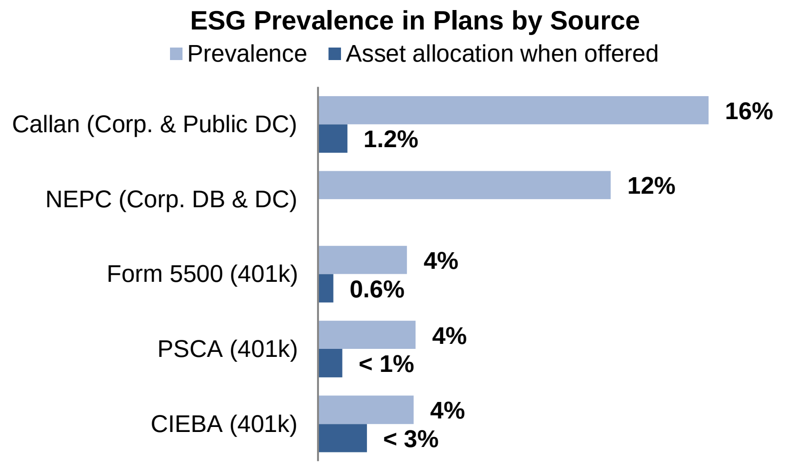
- Expand fiduciary responsibilities
- Enhance risk management
- Improve the quality of investments
- Encourage employee participation
- Attract young professionals

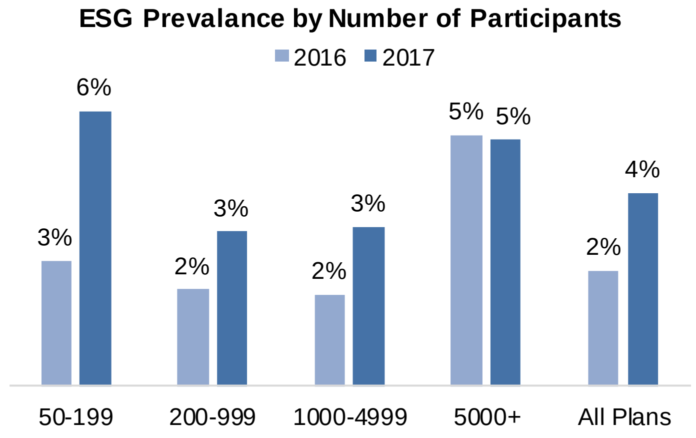
ESG is marketed as fulfilling both personal values and financial goals. Given the choice to do both, many participants would want to make the world a better place and grow their personal assets. However, if there exists a tradeoff between the two, what do participants tend to choose?

Talk versus Action

When asked to put their money where their mouth is, the amount of assets that flow into ESG investment options in participant-directed plans is relatively small. In 2017, 4% of the 605 401(k) and profit-sharing plans surveyed offered at least one ESG investment option, but only 0.03% of all assets were invested in these ESG options. This works out a less than 1% weight in plans offering ESG [PSCA]. Even in studies that are biased toward a pro-ESG sample, asset allocations to ESG investment options are only around 1-2% [Callan].

Perhaps, participants do not feel their personal values are mirrored by the generic ESG fund installed in their plan. Or, maybe their personal values are not prioritized over financial well-being. After all, many participants have dependents of their own and may feel, much like a plan sponsor, that it is not for them to potentially burden someone else with the fall-out of their values-based investing. Like any other novel investment, ESG also has to contend with inertia. Allocation rates into ESG are generally higher than current allocations.





How Strong Do You Take Your ESG?

Following the ESG discussion that led the groundwork for this further exploration, we consider the following three ESG approaches as we have chosen to define them. Together, these three approaches contain the entire spectrum of ESG strategies:

ESG-Aware funds make an explicit effort to incorporate ESG criteria, but may closely resemble ESG-agnostic funds that are free to implicitly incorporate ESG information, along with all other data.

ESG-Focused strategies demonstrate a firm commitment to ESG investment through the naming and marketing of their funds and, more critically, by avoiding certain companies regardless of how cheap they may be priced.

Impact funds define a narrow ESG goal and actively strive to see that goal achieved. This involves advocating for specific changes within companies and lobbying to get these changes implemented.

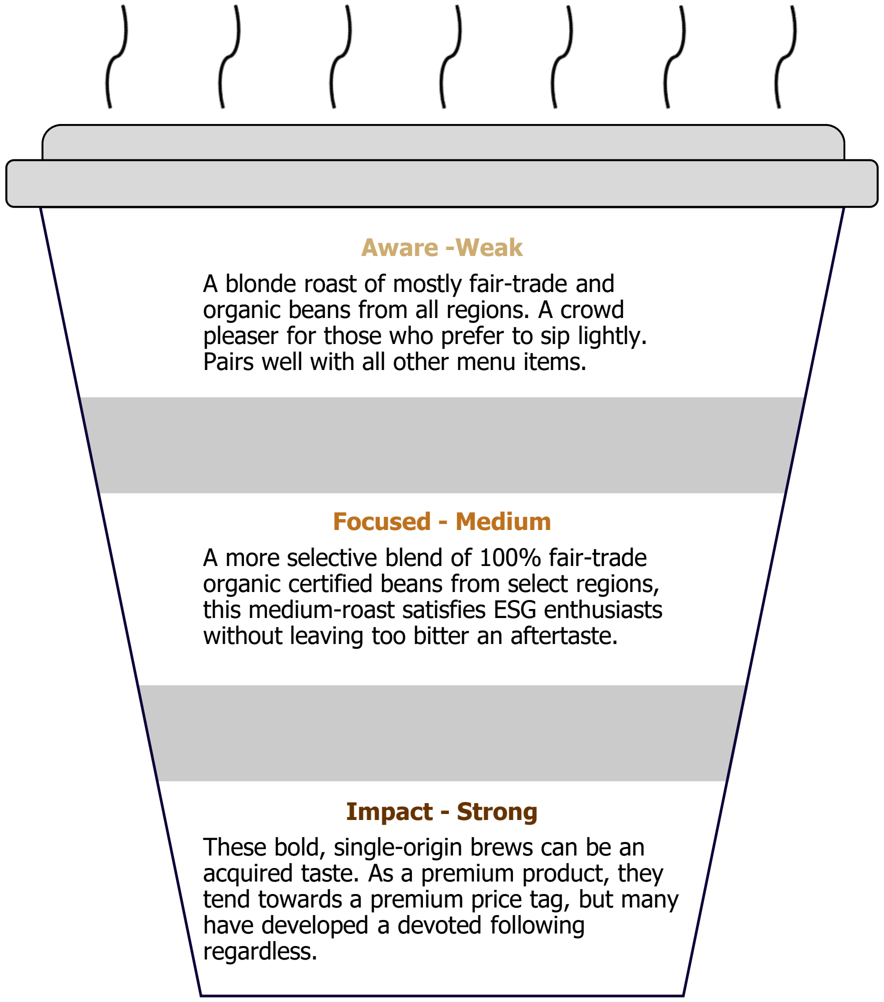
ESG Fund Screening Challenges

Filtering and ranking investment funds on the quality of ESG integration is difficult to do well with available quantitative data.

ESG Score providers seem to disagree more than they agree, and they are prone to overemphasizing data availability, rewarding companies for polish over substance, and misinterpreting the data.

Greenwashing is evident at both fund and company levels, making it difficult to separate the good from the bad. Categorizing funds broadly is the extent of what we can accomplish through ESG screening.

Within each category, funds are ranked primarily on measures that would apply to a non-ESG search. Ultimately, ranking ESG integration is no different than ranking investment process. The exercise requires thoughtful qualitative and quantitative analysis.



ESG Rating Differences

A research team at MIT Sloan found that ratings agencies may adopt different definitions of ESG performance, or they may take different approaches to measuring that performance. They have examined ESG company scores from ESG providers such as Sustainalytics (SA), Asset4 (A4) (now Refinitiv), KLD (KL) (now MSCI), RobecoSAM (RS) (now S&P), and Vigeo-Eiris (VE) (now 40% owned by Moody's) and below is the correlation table among these providers. They found the correlation among those agencies' ESG ratings was on average 61%; cross-correlations between the 5 scoring providers ranged from 42% to 73%. By comparison, credit ratings from Moody's and S&P's are correlated at 99% [Berg].

ESG Score Provider Correlation Matrix

	SA - VE	SA - KL	SA - RS	SA- A4	VE - KL	VE - RS	VE - A4	KL - RS	KL - A4	RS - A4	Average
ESG	73%	53%	68%	67%	48%	71%	71%	49%	42%	64%	61%
E	70%	61%	66%	65%	55%	74%	66%	58%	55%	70%	64%
S	61%	28%	55%	58%	33%	70%	68%	24%	24%	66%	49%
G	55%	8%	53%	51%	4%	78%	77%	24%	-1%	81%	43%

They identify three distinct sources of divergence:

- Measurement
  - Explains 50.1% of total differences
  - Occurs when ratings agencies measure the same attribute using different indicators.
- Weight
  - Explains 13.2% of differences
  - Can happen when agencies assign varying degrees of importance
- Scope
  - Explains 36.7% of differences
  - Can occur when one agency includes greenhouse gas emissions, employee turnover, human rights, and corporate lobbying in its ratings scope, while another doesn't consider lobbying.

A cursory examination of company ESG scores reveals many surprises. A company's score often appears to be determined mainly by how complete and polished their ESG policies are. The reliability of the scores is also sensitive to how available, accurate, and complete the company's ESG data is. While the scores are backwards looking and do not attempt to incorporate ESG outlook, some scoring providers do incorporate trends in ESG improvement or deterioration.

There are also differences in how major headline news impacts ESG scores. Some providers do not incorporate these controversies, or may score them separately. More critically, the severity of the controversies and any qualitative information on them is often not factored in. Controversy scores are basically limited to a simple tally of the number ESG controversies in the recent past under Refinitiv's ESG framework, while MSCI assesses both the scale and nature of the controversy's impact.

ESG Ratings Comparisons

ESG scores from MSCI, Sustainalytics, and Refinitiv look very different from each other and, likely, from participants' expectations.

- Both Sustainalytics and Refinitiv rate Philip Morris highly, while MSCI rates it the lowest of the three companies
- Sustainalytics and Refinitiv also agree that Tesla is the worst of the three companies in terms of ESG, while MSCI ranks it highest overall
- Though Sustainalytics and Refinitiv agree on the best and worst, they disagree on environment and overall ratings for Exxon and Tesla

MSCI

	Exxon	vs. Industry	Philip Morris	vs. Industry	Tesla	vs. Industry
Overall (Laggard / Average / Leader)	Average	●●	Average	●●	Leader	●●●●
Environmental	Average	●●	Laggard	●●●	Leader	●●●●
Social	Average	●●	Laggard	●	Laggard	●
Governance	Average	●●	Average	●●●	Average	●●●●

Sustainalytics

Score (Percentile Rank)

	Overall	E	S	G
Exxon	64 (64%)	55 (45%)	75 (79%)	58 (24%)
Philip Morris	66 (82%)	75 (93%)	61 (73%)	62 (54%)
Tesla	59 (48%)	70 (81%)	50 (21%)	47 (12%)

Refinitiv

	Overall	E	S	G
Exxon	A	A+	A+	B+
Philip Morris	A	A+	A	A-
Tesla	C	B-	C-	C

Many passively managed ESG funds rely entirely on a single third party provider for ESG scoring. Actively managed funds that attempt to integrate ESG data outside of their proprietary research and analysis may also rely heavily on these third party scores.

Passive & Top-Down ESG Fund Performance & Characteristics

Where an asset manager offers both an ESG fund and non-ESG fund that are otherwise comparable, several trends are evident in ESG:

- Higher expense ratios
- Higher turnover
- Lower number of holdings
- Slightly lower market cap and a growth tilt
- Higher trailing returns, especially in the 3-year period, but similar Sharpe ratios due to higher volatility

Note that due to the small sample size and reliance on trailing performance over a period of less than one full market cycle, the performance differences should not be considered conclusive evidence. Also, the growth bias in some of the examples below may be responsible for as much as 55 bps in excess performance over the trailing 3-year period, annually.

ESG Fund Excess Over Non-ESG

Note: expense ratio, growth, value, returns and Sharpe ratios show the simple subtraction of the ESG fund minus the comparable non-ESG fund turnover, number of holdings, and market cap show the ratio of ESG fund market cap to that of the non-ESG fund. Returns are annualized.

ESG Fund	Non-ESG Comparable Fund	Expense Ratio	Turnover	Num. of Hldngs.	Mkt Cap	Grwth	Value	3yr Return	3yr Sharpe	10yr Return	10yr Sharpe
US											
DFA US Social Core Equity 2	DFA US Core Equity 2 I	0.06	900%	81%	100%	1%	-1%	0.62%	0.02	-0.24%	(0.04)
DFA US Sustainability Core 1	DFA US Core Equity 1 I	0.06	133%	76%	109%	5%	-2%	1.07%	0.06	0.15%	-
Fidelity U.S. Sustainability Index	Fidelity® 500 Index	0.09	375%	64%	80%	5%	-1%				
Vanguard FTSE Social Index	Vanguard 500 Index	0.14	200%	96%	85%	3%	-4%	1.82%	0.13	0.80%	0.01
International											
Fidelity Intl Sustainability Idx	Fidelity® Global ex US Index	0.14	53%	44%	99%	4%	-4%				
DFA International Social Cor Eq	DFA International Core Equity I	0.03	200%	87%	81%	0%	0%	0.05%	0.01		
DFA Intl Sustainability Core 1	DFA International Core Equity I	0.07	200%	77%	127%	8%	-7%	0.70%	0.08	-0.20%	-
Emerging Markets											
DFA Em Mkts Sustnby Cor 1	DFA Emerging Markets Core Equity I	0.13	150%	52%	87%	5%	-4%				
DFA Emerging Markets Social Core	DFA Emerging Markets Core Equity I	0.01	275%	87%	98%	-1%	1%	0.77%	0.05	0.03%	(0.01)
Fixed Income											
DFA Global Sustainability Fixed Inc	DFA Global Core Plus Fixed Income	-0.02		32%							
DFA Social Fixed Income Institutional	DFA Investment Grade I	0.05	60%	60%				-0.13%	(0.04)		
Fidelity Sustainability Bond Index	Fidelity® US Bond Index	0.07	84%	15%							
Average		0.07	239%	64%	96%	3%	-2%	0.70%	0.04	0.11%	(0.01)

"Socially Conscious" Active Fund Performance & Characteristics

For actively managed funds, we define ESG broadly using Morningstar's "Socially Conscious" label, which managers self-identify. Here we find that the ESG funds are characterized by:

- A modest tendency toward higher expense ratios, but lower expense ratios for ESG funds tracking the S&P 500 index
- A growth bias outside of funds benchmarked to the Russell indices
- Slightly positive relative performance in the 10-year trailing period, but visibly weak performance in the 20-year trailing period

ESG Fund Excess Over Non-ESG

Note: All metrics except average market cap show the simple subtraction of the ESG fund minus the comparable non-ESG fund. Average market cap is the ratio of ESG fund market cap to that of the non-ESG fund. Performance statistics are annualized.

	Excess Median							Excess Average						
	S&P500	R1000	R2000	ACWI	ACWI xUS	EAFE	MSCI EM	S&P500	R1000	R2000	ACWI	ACWI xUS	EAFE	MSCI EM
Expense Ratio (bps)	-6	-1	+5	+14	-8	+3	+6	-3	-1	+14	+12	+5	+4	-4
Avg Mkt Cap	101%	107%	93%	92%	122%	110%	117%	105%	101%	95%	78%	110%	103%	123%
Net: % Value	-2.4%	+5.4%	-1.2%	-14.1%	-7.5%	+0.4%	-7.1%	-3.3%	-1.5%	-1.3%	-3.3%	-4.3%	-3.0%	-6.7%
Net: % Growth	+3.9%	-2.7%	-9.4%	+14.7%	+13.6%	+4.1%	+7.2%	+1.0%	+3.0%	-5.3%	+4.5%	+9.4%	+11.1%	+5.1%
10-year Trailing														
Return (bps)	+35	+135	+18	-70	+16	-69	-0	+33	+100	+24	+89	-31	+14	+4
Alpha (bps)	+35	+94	+50	-42	-49	+30	+9	+35	+98	+44	+94	-56	+31	+23
Sharpe	+0.04	+0.06	+0.02	-0.05	-0.00	-0.03	+0.00	+0.04	+0.07	+0.02	+0.03	-0.03	+0.01	+0.01
Tracking Error (bps)	-83	+35	+8	+68	+19	-1	-34	-84	+16	-29	+118	-3	-27	-45
20-year Trailing														
Return (bps)	+52	-0	-136	-233	-26	-131	-28	+20	-24	-81	-217	-40	-164	-10
Alpha (bps)	+58	+14	-147	-201	-36	-176	-43	+14	-15	-92	-198	-41	-173	-14
Sharpe	+0.05	-0.00	-0.09	-0.14	-0.01	-0.07	-0.02	+0.03	-0.02	-0.04	-0.13	-0.02	-0.09	-0.01
Tracking Error (bps)	-126	+157	+45	+682	-26	-30	-40	-135	+126	-19	+658	-60	-42	-4

Note: Peer groups contain the oldest share class for all actively managed mutual funds in the Morningstar database with the noted primary propsectus benchmark in the related morningstar categories. Funds were screened for a minimum AUM of $50 million. ESG funds are defined broadly as those labeled "Socially Conscious" in the Morningstar databse.

ESG-Focused Active Fund Performance & Characteristics

To better gauge the differences in ESG funds characteristics and performance, we screened the universe of actively managed mutual funds to filter out funds that would generally not meet the minimum criteria for a fund search and to tighten the definition of ESG funds around those that are ESG-focused rather than ESG-aware.

Four major market indices were selected and only funds with an ESG descriptor in their name (e.g. social, responsible, green, impact) were included in the ESG peer groups that manage to each respective benchmark index.

While actively managed ESG funds include diverse strategies and approaches, we can again identify several trends in performance and characteristics of ESG-focused funds compared to the broader universe by comparing sets of funds managed against the same index.

Here, comparisons to non-ESG strategies managed to the same benchmarks show that ESG-focused funds exhibit:

- Higher expense ratios
- A strong bias toward growth stocks, particularly in global equities
- A bias towards smaller large caps and larger mid caps
- Greater excess returns in the 6-year trailing period and greater alpha outside of the S&P 500 funds
- Superior performance statistics for Russell 1000 funds in the 6-year period
- Worse performance statistics in nearly all measures for the 15-year trailing period
- Worse performance except for excess return in the 24-year trailing period

Interestingly, ESG managers seem to outperform non-ESG active managers in down markets and underperform in up markets, despite leaning more toward growth and smaller market cap, on average.

Fund Characteristics and Performance Differences (ESG minus non-ESG, on average)

	S&P 500	Russell 1000	MSCI ACWI	US Agg Bond
Expense Ratio	+0.11	+0.19	+0.20	+0.03
Net % Large Value	-6.5%	-1.3%	-3.7%	
Net % Large Growth	+5.6%	+4.4%	-13.5%	
Market Cap	87%	122%	49%	
6-year				
Excess Return	+0.20	+0.28	+0.04	+0.01
Alpha	-0.11	+0.45	+0.09	+0.06
Sharpe Ratio	-0.03	+0.03	-0.00	-0.01
Tracking Error	+0.13	-0.01	+0.43	+0.34
15-year				
Excess Return	+0.09	-0.01	-0.93	-0.69
Alpha	-0.05	-0.11	-0.87	-0.58
Sharpe Ratio	-0.03	-0.04	-0.10	-0.10
Tracking Error	+0.27	+0.04	+0.79	+0.64
24-year				
Excess Return	+0.09	+0.04		-0.49
Alpha	-0.09	-0.05		-0.44
Sharpe Ratio	-0.03	-0.03		-0.07
Tracking Error	+0.32	+0.13		+0.64

ESG Performance Literature Survey

Published sources studying ESG performance yield mixed and inconclusive results. Many of the research papers disclose that they are limited by a short history of usable ESG data. Using current ESG scores to analyze historical performance would corrupt the results. Alternatively, restricting the sample to recent history means the results are tied to a specific market environment and may not be meaningful. For example, growth has strongly outperformed value over the past three years, but not over longer periods.

A survey of the published literature on ESG performance shows a lack of consensus.

ESG is Neutral

Analysis on ESG criteria by hedge fund CFM shows that neither discretionary screening nor incorporating commercially available ESG-score datasets is associated with improved risk-adjusted performance. A 2015 academic paper comes to a similar conclusion, finding the incorporation of ESG-criteria is neither beneficial nor harmful in terms of investment performance [Revelli & Viviani]. One author characterizes ESG as both a risk framework and an investment style. As a risk model, ESG threatens to impede performance through overpricing or over-anticipating risks. As a style, the paper suggested ESG may outperform in periods of rising ESG popularity, but showed that outperformance in 2014 through 2017 was balanced by the lagging performance of ESG from 2010 through 2013 [Bennani].

ESG Hurts

An analysis of 18 public ESG funds that have existed for more than 10 years, showed only one beat the S&P 500 index over a five-year period and only two over ten years. The study also found that ESG funds carried higher risks than typical S&P 500 funds, in large part because they are less diversified in their holdings. In addition, ESG funds have higher costs [Winegarden]. A 2018 paper quantified the risk-return tradeoff of 224 SRI funds, as categorized by US SIF, against non-SRI funds under both Markowitz and Sharpe models. The author concluded that, given the current stage of SRI awareness and implementation, non-SRI funds exhibit a greater ability to yield higher returns [Donath].

ESG Helps

Other studies find that ESG criteria do have the potential to produce enhanced risk-adjusted returns. A 2019 paper contends that ESG measures may provide leading indicators of a company's financial performance. By constructing ESG scores from various data sources over the period 2013-2017, the author found the top-quartile corporate governance companies significantly outperformed those in the bottom quartile after correcting for the five Fama-French factors [Khan].

ESG Shows Promise but not Practical Results

In 2015, a second level review of over 2200 unique primary studies conducted within the past 30 years found that ESG outperformance opportunities exist, particularly in North America, emerging markets, and non-equity asset classes. The review also noted that studies of mutual funds and other ESG portfolios showed, on average, mixed or neutral results from ESG incorporation. However, the author contended that this discrepancy was due to the addition of other systematic and idiosyncratic risks and, in the case of mutual funds, implementation costs [Friede].

Summary and Recommendation

ESG-related investment is seeing a new wave of adoption. The recent growth in number of products and amount of assets managed with ESG considerations may be overstated on many accounts, but it is significant enough to warrant inspection.

Upon review and analysis of the available research and data on this subject, we find that ESG continues to evolve, however implementing ESG options in a corporate defined benefit or defined contribution plan is encumbered by:

- Lack of standardization; framework, terminology, and reporting continue to evolve for asset managers, issuers, and investors
- Weak public awareness of what defines ESG investment and lack of information on what participants want
- Often, failure to attract significant assets when ESG options are added by plan sponsors
- Questionable benefits to performance accompanied by relatively high fees
- Limited selection of established products, many of which have short track records, low manager tenure, and little AUM
- ESG-focused funds that satisfy a narrow segment of participants; ESG-aware funds which attempt to appeal to everyone at the cost of potentially satisfying no one

Corporate retirement plans are still in a formative period of ESG adoption. In light of this and the specific concerns above, we recommend a conservative approach to ESG incorporation.

A wait-and-see approach will allow many of the highlighted issues above to advance into a more mature state.

Appendix

ESG Score Provider Summary

Rating Provider	Target Users*	Key Issues & Indicators*	Methodology	Scoring & Rating
Bloomberg	Investors & companies	120 Key Issues 700 Indicators	Bloomberg evaluates companies on an annual basis, collecting public ESG information disclosed by companies, w hich are divided into 120 ESG indicators. Bloomberg trails MSCI in terms of the number of data items but covers more companies w orldw ide than any of the other vendors.	Does not generate an ESG performance score or rating but does produce an ESG disclosure score and sub-components. Provides scores from 3rd parties (ex. Sustainalytics, ISS etc.)
FTSE Russell	Investors	125 Key Issues 350 Indicators	Uses publicly avaialble ESG information for rating the companies. Ratings are calculated using an exposure-w eighted average i.e., most material ESG issues are given the most w eight w hen determining the company's scores. 3 pillars divided into 14 themes.	Rating 0-100
Morningstar	Investors	(relies on Sustainalytics data)	Morningstar acquired a 40% stake in Sustainalytics in 2017. Sustainability ratings are based on tw o components: company-level ESG scores developed by Sustainalytics and ESG controversies.	Graded on a scale of 0 to 100 relative to other firms
MSCI	Investors	37 Key Issues 1,000+ Indicators	Environment (51% w eighting), Governance (32%) and Social (17%). These 3 pillars divided into 10 themes and sub-divided to 37 key isues. MSCI provides Intangible Value Assessment (IVA) scores to rate the risks and opportunities.	Industry-specific key issues are scored (0-10) Rating of AAA – CCC, relative to industry peers
Robeco SAM	Investors & companies	120 Key Issues 80 Indicators	Rules-based assessment methodology. 61 industries derived from the GICS industry classification system, analyzed using industry-specific questionnaires. Companies are valuated based on a range of financially relevant sustainability criteria covering the economic, environmental and social dimensions.	Total Sustainability Score betw een 0 – 100 Ranked against other companies in their industry
S&P	Investors	Combines quant. and qualitative information	ESG Evaluation report sets out the analysts' view of the ESG Profile of the company and its Preparedness assessment. Preparedness assessment evaluates the entity's capacity to anticipate and adapt to a variety of long term plausible disruptions.	Ranking on a 100-point scale; incorporates ESG profile and preparedness assessment on capacity to w eather long-term disruptions related to ESG, politics, technology, etc.
Sustainalytics	Investors	21 Key Issues 70 Indicators	Breaks dow n ESG indicators into three distinct dimensions: preparedness, disclosure, and performance. 40% w eighting to Social, 35% Enviromental and 25% Governance w eighting.	Sector/industry based comparison Rating out of 100
Thomson Reuters Refinitiv	Investors	178 Key Issues 400 Indicators	Measures a company's performance based on reported data in the public domain across 3 pillars and 10 different ESG topics. They capture and calculate over 400 company-level ESG measures, w hich w ere put into 178 most relevant and comparable data points. Data updated every 2 w eeks.	Percentile rank scores (available on both percentages and letter grades from D- to A+)
Virgeo-EIRIS	Investors & companies	38 Key Issues 330 Indicators	Criteria Weighting Methodology. Each criteria is activated and w eighted based on its relevance by sector. Three factors contribute to the w eighting of each criterion. Factor 1: Nature of stakeholders' rights, interests and expectations; Factor 2: Vulnerability of stakeholders by sector; Factor 3: Risk categories for the company.	Rating Scale: Double+ to double-

*Source: Bhardwaj

Retirement Plan ESG Surveys

More than half of the existing DC participants believe Sustainable investing options should be available in their 401(k) plans. [NorthernTrust]

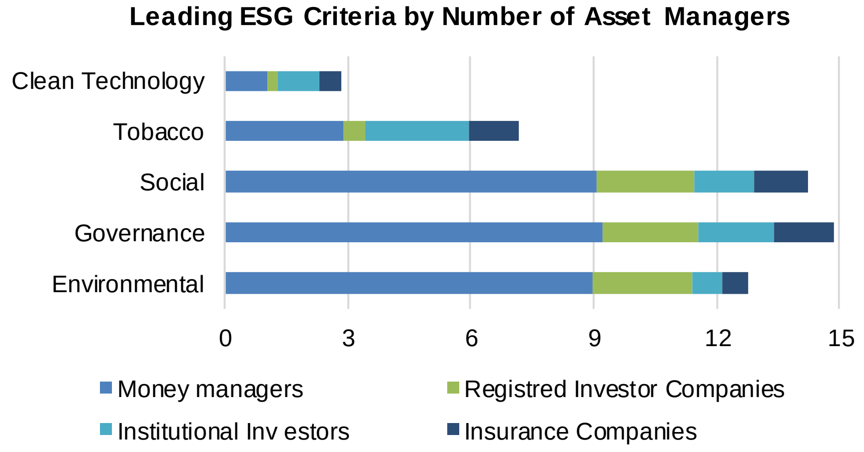
ESG investing has been gaining traction among DC plan participants as well, according to recent data from the Natixis Investment Managers DC Plan Participant Survey: 61% say that ESG options in their plan would make them more likely to contribute, however, only 13% of those surveyed are offered with ESG options in their current plans.

In a survey of about 600 DC plans, reports that in 2016 about 2% of DC plans offered an ESG investment option as one of the options participants could select from [PSCA]. Additionally, a Vanguard Group report indicates that in 2016 about 8 percent of the 1,900 DC plans has made available to participants an option where ESG factors had been incorporated into investment management.

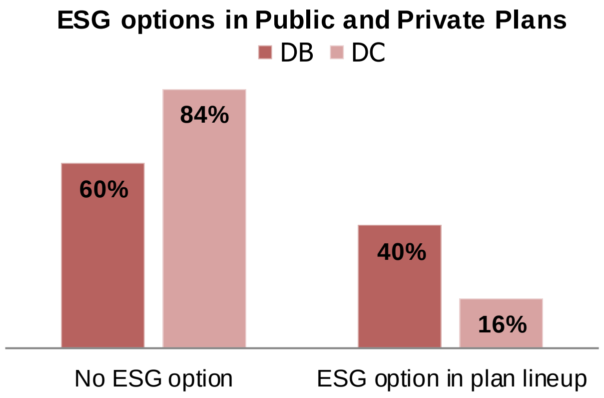
Defined benefit plans are more than 3 times more likely to incorporate ESG factors into investment decisions than defined contribution plans.

Although less number of 401(k)s currently offer ESG options, large financial firms (BlackRock, Wells Fargo and Natixis) are betting that will change and are developing products for the 401(k) marketplace.

74% of Fortune 1000 employees believe offering socially responsible investment options is important in their 401(k) [Povaddo]



Source: US SIF



Source: Callan

According to Callan, 16% of DC plans offer a dedicated ESG option, however, this number masks a large divide among plans: only 5% of corporate DC plans offer a standalone option, compared to the 43% of public and non-profit plans that do so.

In addition, utilization for both sponsor types remains low. Allocations range from a barely perceptible 0.23% to 3.10% of plan assets, with an average of 1.20%.

When there is an ESG-focused option in the plan lineup, usage tends to be very low. Respondents indicate an average allocation of just 1% to the ESG option, when available. [PSCA]

Active vs. Passive ESG Strategies

Active Manager Benefits

Company Engagement

Active managers are able to engage company management directly and regularly. They can also threaten to sell their position if their concerns go unheeded.

Fundamental ESG Research

Portfolios are typically built on bottom-up fundamental analysis which helps to incorporate ESG factors alongside all other available information in determining which investments are right for the portfolio. Unique ESG insights beyond what is easily quantified or measured can provide added value.

Forward-Looking and Responsive

Holdings can be managed dynamically, allowing immediate response to ESG-related news. Views and assessments can be more forward-looking and nuanced.

Passive Manager Benefits

Transparent

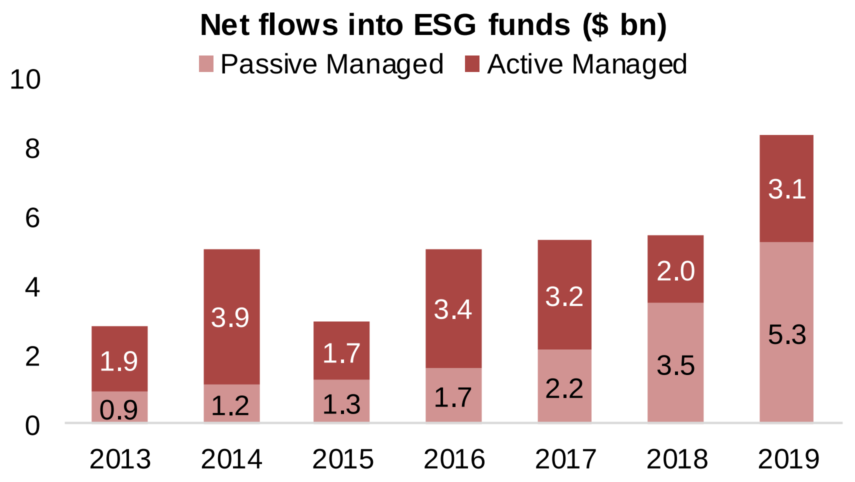
The passive route offers greater transparency due to formulaic ESG incorporation. This produces clear attribution of the impact ESG criteria have on performance.

Cost-Efficient

Applying rules-based ESG criteria to the investment process can be achieved through straightforward exclusionary screening or through positive screening based on third-party ESG scores.

Bias-Resistant

Investments are not biased by the personal values of a single analyst or PM. Biases may still be introduced through the design of ESG criteria or scoring.



Source: Hale

Equity vs. Fixed Income ESG

Equity Benefits

Demand

Equity investment options are in relatively greater demand by participants because most participants will have an optimal allocation that weights equity significantly higher than fixed income.

Popularity

Equity options tend to be more popular with participants, even more than optimal allocation models would suggest.

No Neutral Alternative

Many fixed income ESG funds allocate heavily to US Treasuries and other government, or government-related, debt. These investments may not exactly spur improvements in society or the environment, but they are viewed as relatively harmless. No equivalent exits in equity markets.

Fixed Income Benefits

Access to Bad Actors

Issuer of debt can tie the capital raised by bond issuance to specific ESG-friendly projects, providing a route for investment regardless of how ESG-unfriendly the company may be in all other regards.

Underrepresented Asset Class

Most investment lineups have many more equity funds than fixed income funds. ESG provides an opportunity to add a distinct but approachable bond fund in the universe of (for example) US core bonds, corporate bonds, or even emerging markets debt.

US vs. Global Equity ESG Strategies

US Equity Benefits

Greater Recognition of Companies

US investors are generally more familiar with US companies, and better able to form opinions about whether those companies align with personal values.

Greater Alignment of Personal Values

ESG issues with an international impact can be harder for participants to evaluate and relate to. Does investment in poorer countries allow factories with inhumane working conditions to continue their bad practices or allow them to improve working conditions for workers who have nowhere else to turn?

More Direct Extra-Financial Benefit

In making the world a better place, why not start where participants breathe, work, and live?

Global Equity Benefits

ESG Matters More

Many International developed and, in particular, emerging markets countries contain companies that exhibit lower ESG scores on average and greater ESG dispersion.

More Diversified Single Investment

For participants who might avoid non-ESG equity options in the lineup, offering a global equity fund gives them access to a more diversified and larger chunk of financial markets.

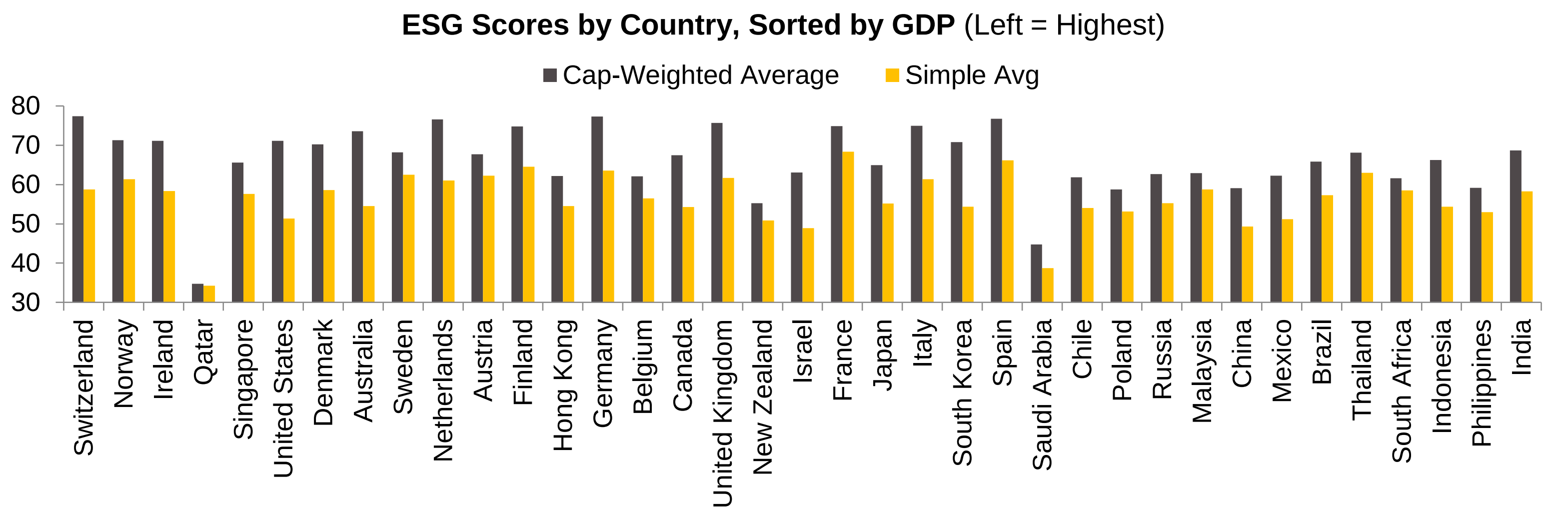
More Evolved

ESG adoption is much higher in many foreign countries compared to the US. Investors in international equity markets can be more ESG savvy and demanding of ESG practices from investment managers and company management.

ESG-GDP Correlation

Correlation between the GDP of a country and the market-cap-weighted ESG score of companies within that country shows a positive 28% correlation.

When taken as a simple average of ESG scores, the correlation drops to only 8%. Meaning it is a mostly large cap bias.



Scope of ESG

Defining Asset Classes

In our universe of screened funds, we include both passive and active US and global equity funds. The screens have been constructed to examine the breadth and depth of offerings in three categories we have defined for ESG intensity: aware, focused, and impact.

The four funds we showcase from each exploratory screen were selected to provide a variety of implementations. In contrast, an actual fund search would incorporate tighter screening filters and candidate selection would be based on criteria emphasizing the quality of the fund rather than ensuring variety between funds. Also, given that some participants may choose to use an ESG equity fund as their sole allocation to equity markets, we would tend toward a more diversified, conservatively positioned fund.

Fixed income is not being considered at this time as many fixed income ESG portfolios hold large amounts of US Treasuries and other government, or government-related, debt. Accordingly, the Vanguard Intermediate Term Treasury Index fund can already serve this purpose.

Defining Focus

Fundamentally, we expect that integrating ESG information and principles at all steps of the investment process is key to delivering an ESG product that meets our, and our participants', standards. A strategy that only applies a quantitative ESG screen on the initial universe must rely on easily quantifiable data. In choosing a devoted ESG product, we would favor ESG research and analysis that is proprietary, qualitative, and quantitative. Reliance on quantitative or third party data appears problematic for it can be outdated, backwards-looking, and not aligned with the work being done by the a strategy's analysts or portfolio managers.

Although we consider a variety of ESG approaches, universally, we expect a good candidate should:

- Brand the fund with a name that clearly expresses that it is an ESG fund
- Use positive screening, negative screening, or both
- Integrate ESG into analysis, not merely as an overlay or filter
- Demonstrate all qualities we would require of a non-ESG fund
- Represent an appropriate investment for a participant's entire equity allocation

ESG Regulatory Differences

In 2015, the Department of Labor rescinded its 2008 bulletin on Economically Targeted Investments and issued a new bulletin with language: "fiduciaries need not treat commercially reasonable investments as inherently suspect or in need of special scrutiny merely because they take into consideration environmental, social, or other such factors." A 2016 bulletin further promoted ESG integration in the Investment Policy Statement of ERISA plans.

However, a 2018 bulletin partly walks back this advance toward ESG acceptance. Stating, fiduciaries "must not too readily treat ESG factors as economically relevant to the particular investment choices at issue when making a decision" and "must always put first the economic interests of the plan in providing retirement benefits."

In the US, retirement plan committees have grappled with how to carry out their fiduciary responsibility as growing interest in ESG investment is voiced by their participants.

- Department of Labor guidance has shifted with changes in presidential administrations
- Plan fiduciaries have grappled with how to interpret DOL's guidance
- Litigation risk has not been firmly tested

In the European Union, adoption by retirement plans is made easier by:

- The Institutions for Occupational Retirement Provision directive issued in 2016 requires pension funds in the EU to take into consideration ESG factors and risks in investing their funds
- The European Insurance and Occupational Pensions Authority has issued guidance on how to incorporate ESG factors

In the UK,

- Policy on financially material ESG factors required from plan trustees by October 2019
- Disclosure on non-financial matters considered to be required
- By October 2020, plans must produce an implementation statement indicating how they acted on the principles they set out

Elsewhere,

- Government Pension Investment Fund of Japan integrates ESG data in its investment process to assess sustainability
- Swedish National Pension Fund assesses the sustainability of companies in its portfolio

ERISA Considerations and ESG

ESG as an Investment Style

The traditional style box assortment of nine US equity funds spanning the range of small to large cap and value to growth gave participants many choices, but often included multiple choices that were not significantly different. ESG presents a novel style that participants are more likely to view as a different choice. The more ESG-intense the more different that choice but, potentially, the more limited the audience to which it appeals.

Constants within Department of Labor Guidance

DOL guidance on ESG investments has included the following two core principles regardless of which administration is in office:

- ESG investment decisions must be guided “first and foremost” by the economic interests of the plan and its participants.
    - The focus on financial returns and risks is paramount, and fiduciaries can’t accept lower returns to further or secure “collateral benefits.”
- If two alternatives (e.g., funds) are “economically equivalent,” then ESG considerations can be a tie-breaker when making the decision on what alternative to select.

Prudent Selection

Our research demonstrates that the impact of ESG on return or risk may not be demonstrably positive or negative. We believe, based upon significant due diligence and analysis, that we could make a prudent judgment that certain ESG fund managers could add value to plan participant accounts through the manager’s distinct proprietary investment process. That process would include ESG research and analysis to varying degrees.

We also believe that the potential to increase participant contributions generally supports adding an ESG fund that is considered economically equivalent. Increasing participation in, and contributions to, the plan ultimately increases the retirement benefit participants receive.

Some ESG funds have higher expenses, which for any ESG fund that we would recommend would need to correlate with the expectations of the manager’s added economic value. While participants may choose to spend extra money on fair-trade or organic food certifications because they feel better about their purchase and believe it makes the world a better place, we cannot justify paying more for a “socially conscious” investment label in the same way. As previously noted, the level of fees should correlate with expectations of the manager’s added economic value.

Summary

ESG-related investment is seeing a new wave of adoption. The recent growth in number of products and amount of assets managed with ESG considerations may be overstated on many accounts, but it is significant enough to warrant inspection.

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Traditional Screening

- ☐ Asset class = US equity, global equity
- ☐ AUM > $500mn
- ☐ Manager tenure > 5 years
- ☐ Fees < category median
- ☐ Top 10 holdings < 50%
- ☐ 3,5-year return > benchmark index
- ☐ 3,5-year Sharpe ratio > peer median
- ☐ Tracking error between 3-7%

*806 "Socially Conscious" Morningstar funds were filtered down to 83 funds on:

- Asset class of US or global equity
- AUM of at least $500 million
- Manager tenure of at least 5 years

Only 9 include an ESG keyword in the name

ESG Screening

- ☐ Advertised or labeled as ESG
- ☐ Managed by ESG brand (e.g. Calvert)
- ☐ Name includes ESG keyword

Integrates ESG through:

- ☐ Environmental positive screening
- ☐ Environmental negative screening
- ☐ Social positive screening
- ☐ Social negative screening
- ☐ Governance positive screening
- ☐ Governance negative screening
- ☐ Follows third party scoring or index

ESG Approach

ESG Aware checkboxes

- ☐ Access to 3rd party ESG data
- ☐ Siloed ESG analyst or department
- ☐ ESG applied at start or end of process

ESG-Focused checkboxes

- ☐ Proprietary ESG analysis and outlook
- ☐ Integrated ESG analysts/PMs
- ☐ Every step of process incorporates ESG

Impact checkboxes

- ☐ Expert ESG analysis focused on impact
- ☐ Activist PM with explicit ESG concern
- ☐ ESG theme drives investment process

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