Sustainable Investment Fund
Annual Report
2023-2024

SUSTAINABLE INVESTMENT FUND // 2024 ANNUAL REPORT

April 26, 2024

To our stakeholders and the broader Haas community:

We are excited to share with you our annual update for the Haas Sustainable Investment Fund (SIF), now in its 16th year. This year was a fantastic learning experience for our principals; we have expanded our investment horizons, added exposures to new sectors, found better ways to properly position the portfolio for long-term capital appreciation, and above all created a culture where our best ideas were brought to the forefront. Along the way, we made some significant decisions that will allow for the fund to succeed for the foreseeable future.

For the fund fiscal year of March 31, 2023 - March 31, 2024, our discretionary investments returned 8.24%. For the period of August 31, 2024 - March 31, 2024, our discretionary investments returned 5.12%. In January 2024, we initiated a $250,000 investment in Nia Impact Solutions Fund SMA, which returned 2.95% through March 31st. Our passively managed Aperio mandate returned 46.92% from March 31, 2023 - March 31, 2024; however, this performance is significantly impacted by flows from the account. In the past year, $1.3 million was withdrawn from the Aperio account to fund discretionary investments, the aforementioned Nia SMA, and our annual required withdrawal totaling $153,308.49, which was distributed in April 2023. Overall, our total portfolio grew by 13.87% over the past year, though these numbers will be lower once April 2024 marks are complete. Our blended benchmark of 60% MSCI ACWI 40% Bloomberg Aggregate Bond Index returned 14.6% over the same period. As of March 31, 2024, the total value of the portfolio exceeds $4.3 million.

Equities make up 60% of the total portfolio including Aperio. This is due to a large trim to Aperio that we made in March in order to allocate from Aperio’s passive mandate to different active equity strategies, real assets strategies, and fixed income strategies. Our current cash and fixed income portfolio comprises 35% of the portfolio; cash itself is ~13% of the portfolio. Cash is invested in a Schwab money-market fund that is yielding approximately 5% annually; as such, we are comfortable with our oversized cash position while we search for new opportunities. In anticipation of this move, we also shifted our managed fixed income portfolio to longer duration securities; thus our duration risk has not changed. This change was made with the belief of future interest rate cuts; with those seemingly off the table, we have positioned ourselves well for future policy changes. Real assets make up the remaining 5% of the portfolio.

We took significant action this year to properly allocate ourselves towards broader healthcare and technology given the advancements in generative artificial intelligence and next-generation therapeutics. We also increased our exposure to real estate with investments in Welltower, a REIT focused on retirement homes, and Avalon Bay, a REIT focused on affordable housing. We sold out of managed equities that we believed were engaging in ESG-washing to build what we believe to be a materially more impactful portfolio.

We want to express our sincere appreciation to each of you, to our Faculty Advisors, Jillian Grennan and Anne Simpson, and to Charlie Michaels, Larry Johnson, and the late Al Johnson for their foundational support of this fund. We are grateful for the opportunity to be stewards to this capital and for the opportunity to build a sustainably invested portfolio to benefit future generations of Haas MBA students and principals.

Sincerely,
2023-24 SIF principals

Table of Contents

2023-2024 SIF Principals	**4**
Fund Performance	**5**
IPS Revisions	**24**
Sustainability Performance	**27**
Shareholder Engagement	**30**
Thought Leadership Pieces	**36**
Appendix: Thought Leadership Pieces in Full	**40**
Appendix: Full Investment Policy Statement	**65**

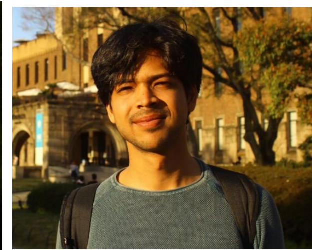
2023-2024 SIF Principals

During the 2023-24 academic year period, the Haas Sustainable Investment Fund maintained its vision of building student knowledge and managing assets on behalf of UC Berkeley while shifting capital towards achieving sustainability goals. The principals were trained in and acquired investing skills to prepare them for their industry careers. The principals are transitioning to careers within investment management, management consulting, venture capital, renewable energy, corporate sustainability, and technology.

Austin Schoff

Bivek Adhikari

Juned Kazi


Keshav Ramaswami

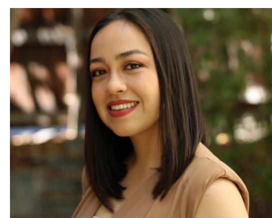
Meredith Albion

Alison Montenegro

Arsal Khanani

Courtney Schrier

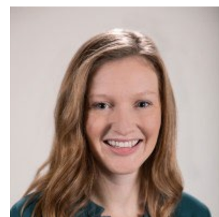
Akshar Ved


Giselle Mendoza

Georgine Co

Jack Rossiter

Jeremy Baptiste


Laura Kurt

Fund Performance

In the back-half of 2023, markets have been buoyed with expectations of decreasing interest rates. This expectation, as well as AI driven optimism led to market growth as the “magnificent seven” (Amazon, Alphabet, Apple, Microsoft, Meta, Nvidia, Tesla) stocks led market performance. The S&P 500 rose 26.2% while the MSCI ACWI rose 22.8% in 2023. Unsurprisingly, the best performing sectors were information technology and communication services, while the worst performing were Real Estate and Utilities. Developed markets (MSCI EAFE) rose 18.85% in line with the US. In comparison, emerging markets rose 10.27% as gains were dampened by the effects of rising US dollar values. Fixed income markets also rebounded from negative performance due to rising interest rates, up 5.5% in 2023 (Bloomberg US Agg).

YTD in 2024, markets have remained resilient. Economic indicators like consumer spending, inflation, and job growth have pointed to a fairly robust economy. Markets have responded with the S&P 500 up 10.56% and MSCI ACWI up 8.32% through 3/31/24. Regarding sectors, energy, communication services, and financials have been the top performers while real estate and materials have been the main detractors.

In evaluating investment performance, time-weighted returns were used. Additionally, dollar-weighted returns were used for fund-level performance analysis given the large outflows from Aperio.

Over the past 1 year through 3/31/2024, the discretionary holdings in the fund returned 8.24%, underperforming its benchmark. The top performers include Nu Holdings (NU), Comfort Systems USA, Inc (FIX) and Intuitive Surgical (ISRG), and the laggards were ChargePoint Holdings (CHPT) and Stem Inc (STEM). YTD, the discretionary holdings within the portfolio returned 3.07% through 3/31, underperforming the benchmark. Of note, as most new names were added in April, performance is not yet reflective of the changes incorporated into the portfolio. The names newly added are sector agnostic – we believe returns through the second half of the year should be in line with the market.

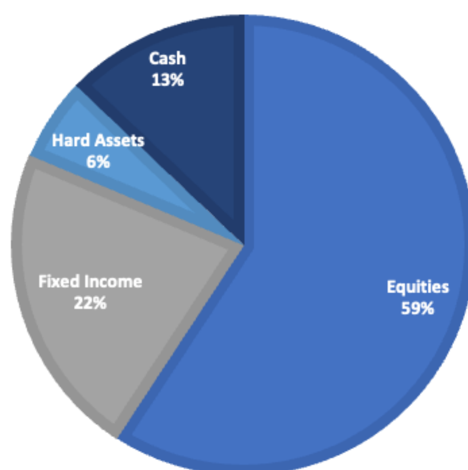
For the past year, the Aperio portfolio returned a time-weighted 21.75%, underperforming its benchmark. This underperformance is largely due to the overweight in real estate, and underweight to energy. Real estate was the second worst performing sector in the index over the past year, being brought down by its -7.24% return YTD. The sector as a whole is being impacted from the lagged effects of interest rate increases. Naturally, the portfolio has zero exposure to energy. This has detracted from returns as energy is the leading sector in the index year-to-date. The Aperio portfolio slightly underperformed its benchmark and returned 7.85% YTD. The NIA SMA returned 2.95% for the year thus far.

The fixed income portion of the portfolio held up well. Although defensive, the short duration assets grew due to the Fed not cutting short-term interest rates. The short-term bond ETFs

each returned over 5% for the past year as short-term rates remained relatively elevated. Our medium-duration holding, Ishares US Green Bond ETF (BGRN) returned 3.29%. Although briefly declining in late Nov/Dec, longer-term interest rates ultimately rose during the second half of 2023 and YTD 2024. Although BGRN performance was impacted, the holding is yielding 5.5%. Demand for green bonds is still strong and returns may also benefit if interest rates decline through 2024.

Going forward, we expect a slowing yet strong economy. Although the consumer remains strong and longer-term inflation is trending downward, the impacts of the "higher for longer" inflationary environment may lead to slower growth as interest rates remain elevated. Along with the market, we do expect at least one rate-cut by the end of year. Of note, we continue to monitor risks associated with ongoing geopolitical tensions.

Current Portfolio Allocation:



Asset Class	% Weight	$ Amount
Equities	**59.21**	**2,568,097**
Individual Equities	12.43	539,123
Managed Equities (ETF, Mutual Fund, SMA)	19.53	847,069
Passive Equity (Aperio)	27.25	1,181,906
Fixed Income	**22.15**	**960,705**

Medium Duration	12.46	540,424
Short Duration	9.70	420,715
Hard Assets	**5.85**	**253,730**
Commodities	0.97	42,072
Real Estate	4.88	211,659
Cash	**12.79**	**554,737**
Total	**100.00**	**4,337,270**

Returns Data:

Asset Class	1 Yr. Return %*	YTD Return %*
Discretionary Investments	8.24	3.07
Benchmark (60% MSCI ACWI/ 40% BB Global Agg)	14.49	4.16
Difference	**-6.25**	**-1.09**
Aperio	21.75	7.85
Benchmark (MSCI ACWI)	23.81	8.32
Difference	**-2.06**	**-0.47**

*Returns Through 3/31/2024

Benchmark Data:

Benchmark Index	1 Yr. Return*	YTD Return*
MSCI ACWI	23.81	8.32
S&P 500	29.88	10.56
Russell 1000	29.87	10.30
Russell 2000	19.71	5.18
Russell 2500	21.43	6.92
MSCI USA ESG Leaders	33.60	11.92
S&P Small Cap 600 ESG	18.45	3.04
MSCI EAFE	15.90	5.93

MSCI Emerging markets	8.59	2.44
MSCI Emerging Markets ESG Leaders	3.60	2.10
Bloomberg US Aggregate Bond	1.70	0.78
Bloomberg Global Aggregate Bond	0.50	-2.07
Ice BofA Green Bond	4.51	-2.14
Bloomberg 3-month T-Bill	5.35	1.30

*Returns Through 3/31/2024

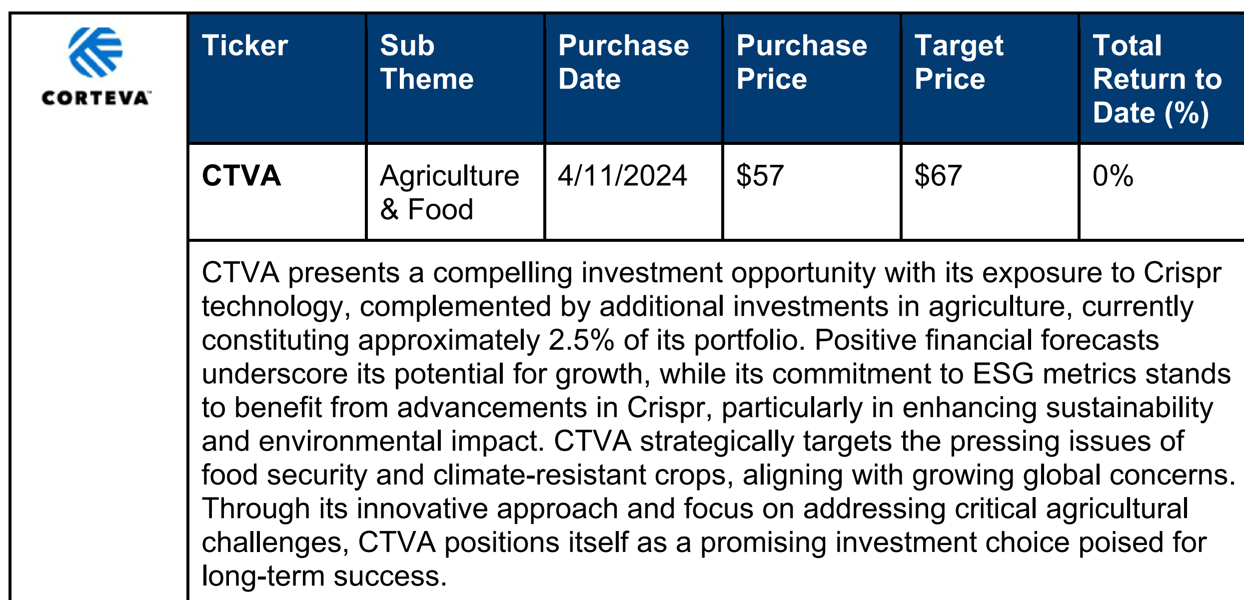
As part of the ongoing management and oversight of the Fund's overall portfolio, this year's principals implemented strategic changes across active equity, fixed income, and discretionary fund investment holdings within the portfolio, with a focus on both optimizing investment returns and maintaining the Fund's impact mission.

Active Equities

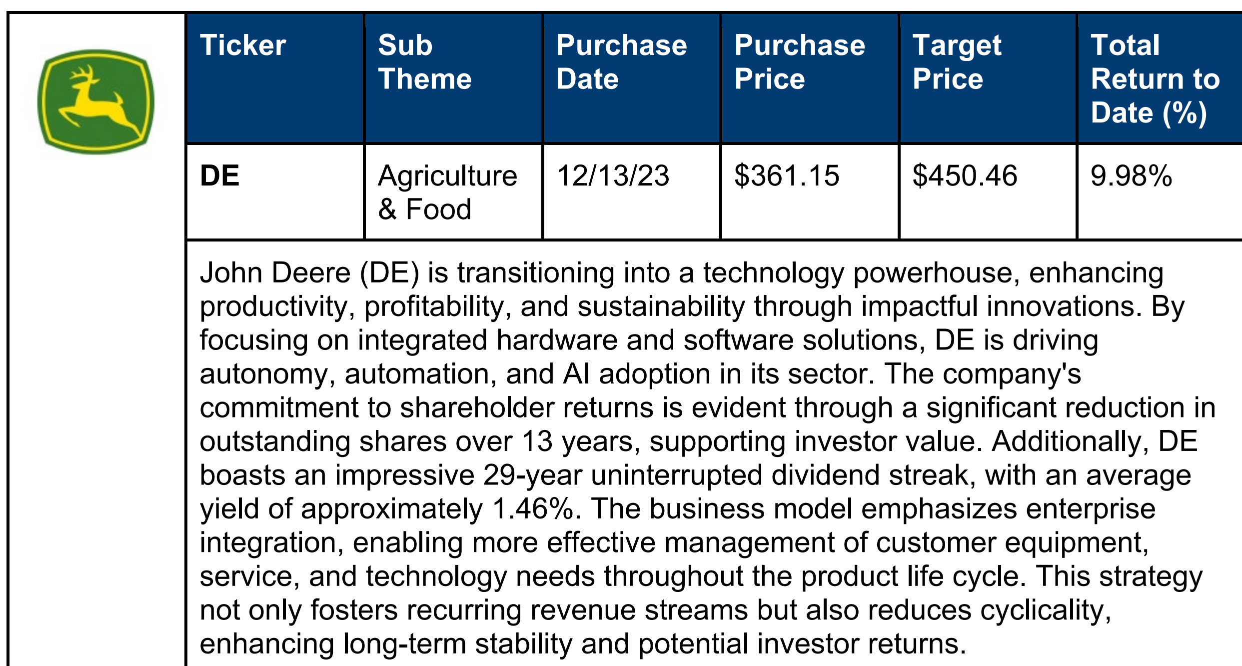
Purchases

Through a structured process of top-down industry research and fundamental security analysis, the Fund added to its long-only active equity portfolio through the acquisition of eleven new equity positions which we have broken down thematically into the following areas;

Climate

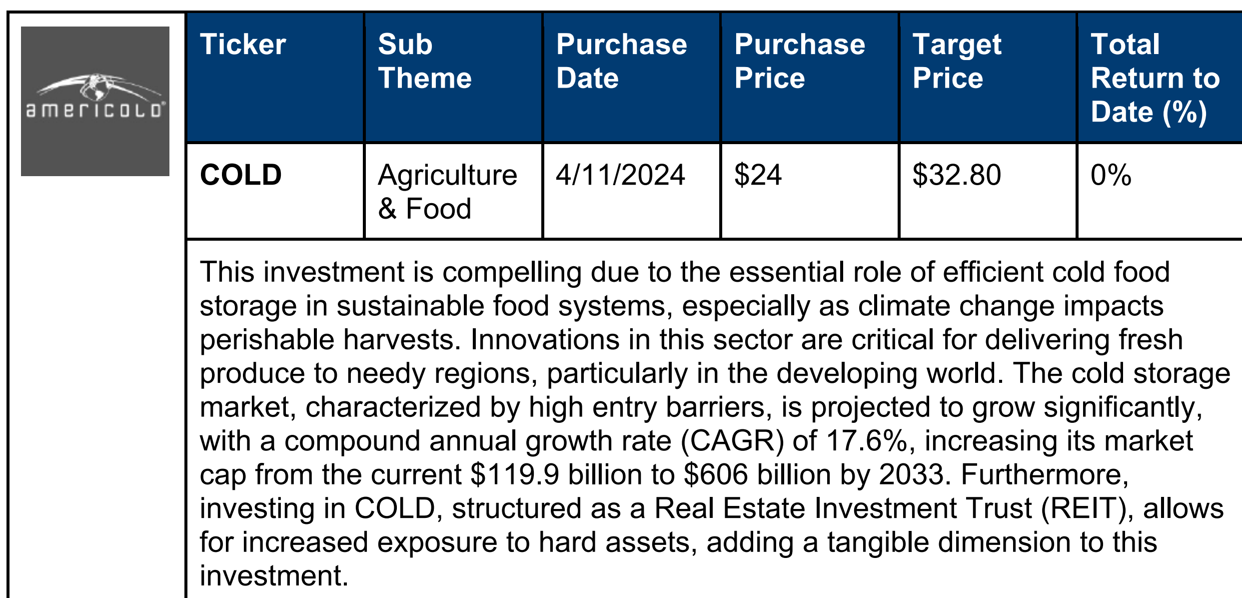


CORTEVA	Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
	CTVA	Agriculture & Food	4/11/2024	$57	$67	0%
	CTVA presents a compelling investment opportunity with its exposure to Crispr technology, complemented by additional investments in agriculture, currently constituting approximately 2.5% of its portfolio. Positive financial forecasts underscore its potential for growth, while its commitment to ESG metrics stands to benefit from advancements in Crispr, particularly in enhancing sustainability and environmental impact. CTVA strategically targets the pressing issues of food security and climate-resistant crops, aligning with growing global concerns. Through its innovative approach and focus on addressing critical agricultural challenges, CTVA positions itself as a promising investment choice poised for long-term success.					



Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
DE	Agriculture & Food	12/13/23	$361.15	$450.46	9.98%

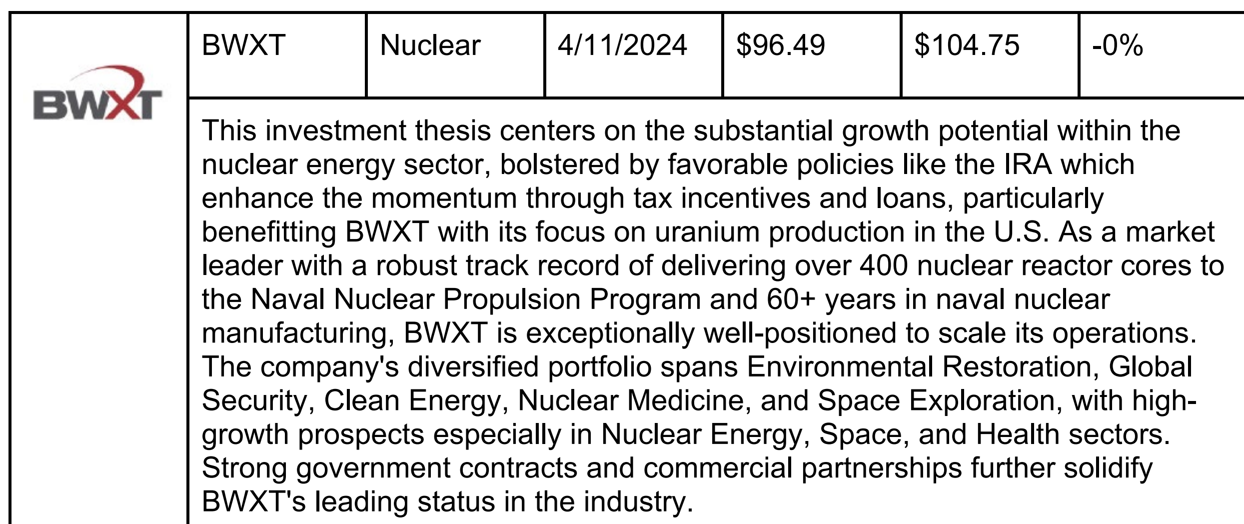
John Deere (DE) is transitioning into a technology powerhouse, enhancing productivity, profitability, and sustainability through impactful innovations. By focusing on integrated hardware and software solutions, DE is driving autonomy, automation, and AI adoption in its sector. The company's commitment to shareholder returns is evident through a significant reduction in outstanding shares over 13 years, supporting investor value. Additionally, DE boasts an impressive 29-year uninterrupted dividend streak, with an average yield of approximately 1.46%. The business model emphasizes enterprise integration, enabling more effective management of customer equipment, service, and technology needs throughout the product life cycle. This strategy not only fosters recurring revenue streams but also reduces cyclicality, enhancing long-term stability and potential investor returns.



Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
COLD	Agriculture & Food	4/11/2024	$24	$32.80	0%

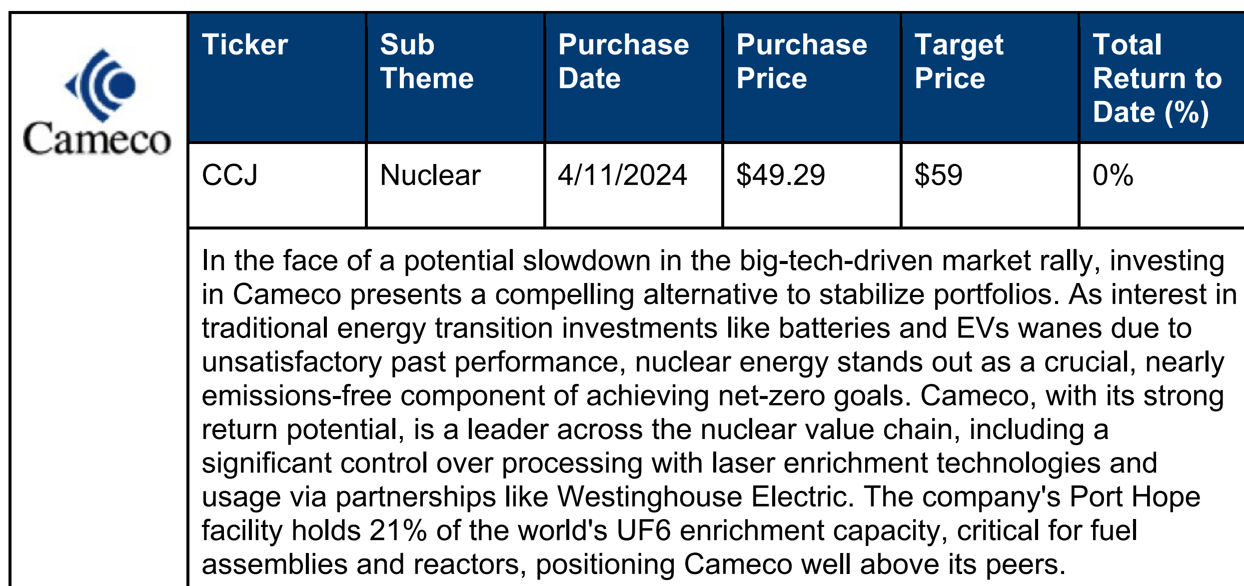
This investment is compelling due to the essential role of efficient cold food storage in sustainable food systems, especially as climate change impacts perishable harvests. Innovations in this sector are critical for delivering fresh produce to needy regions, particularly in the developing world. The cold storage market, characterized by high entry barriers, is projected to grow significantly, with a compound annual growth rate (CAGR) of 17.6%, increasing its market cap from the current $119.9 billion to $606 billion by 2033. Furthermore, investing in COLD, structured as a Real Estate Investment Trust (REIT), allows for increased exposure to hard assets, adding a tangible dimension to this investment.

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)



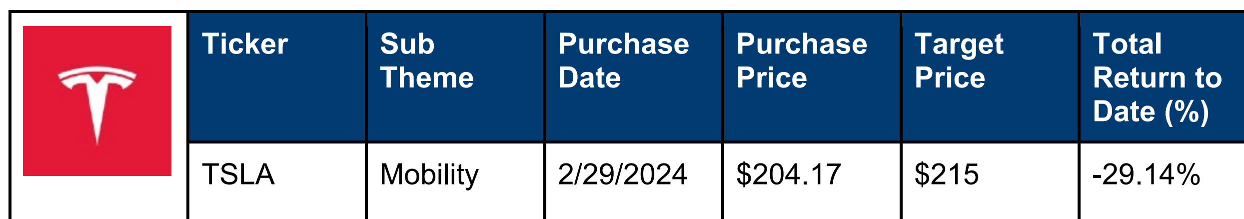
BWXT	Nuclear	4/11/2024	$96.49	$104.75	-0%

This investment thesis centers on the substantial growth potential within the nuclear energy sector, bolstered by favorable policies like the IRA which enhance the momentum through tax incentives and loans, particularly benefitting BWXT with its focus on uranium production in the U.S. As a market leader with a robust track record of delivering over 400 nuclear reactor cores to the Naval Nuclear Propulsion Program and 60+ years in naval nuclear manufacturing, BWXT is exceptionally well-positioned to scale its operations. The company's diversified portfolio spans Environmental Restoration, Global Security, Clean Energy, Nuclear Medicine, and Space Exploration, with high-growth prospects especially in Nuclear Energy, Space, and Health sectors. Strong government contracts and commercial partnerships further solidify BWXT's leading status in the industry.



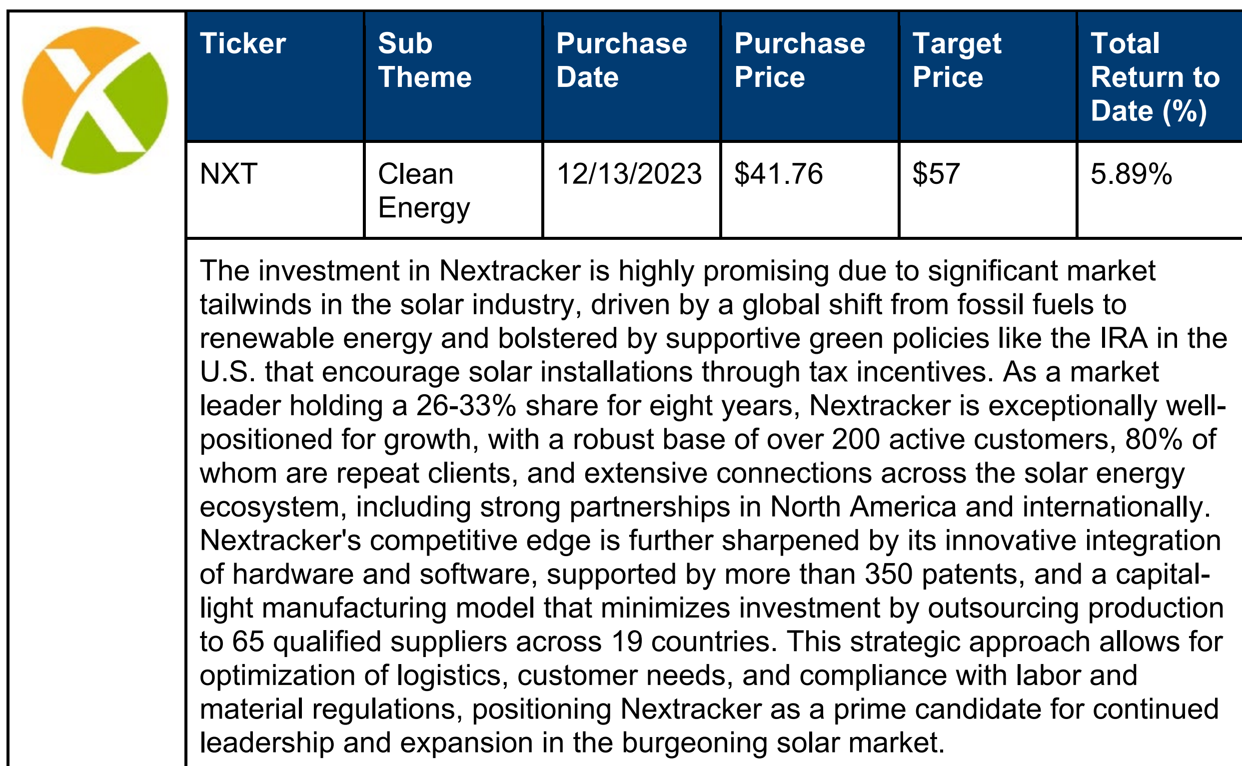
Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
CCJ	Nuclear	4/11/2024	$49.29	$59	0%

In the face of a potential slowdown in the big-tech-driven market rally, investing in Cameco presents a compelling alternative to stabilize portfolios. As interest in traditional energy transition investments like batteries and EVs wanes due to unsatisfactory past performance, nuclear energy stands out as a crucial, nearly emissions-free component of achieving net-zero goals. Cameco, with its strong return potential, is a leader across the nuclear value chain, including a significant control over processing with laser enrichment technologies and usage via partnerships like Westinghouse Electric. The company's Port Hope facility holds 21% of the world's UF6 enrichment capacity, critical for fuel assemblies and reactors, positioning Cameco well above its peers.



Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
TSLA	Mobility	2/29/2024	$204.17	$215	-29.14%

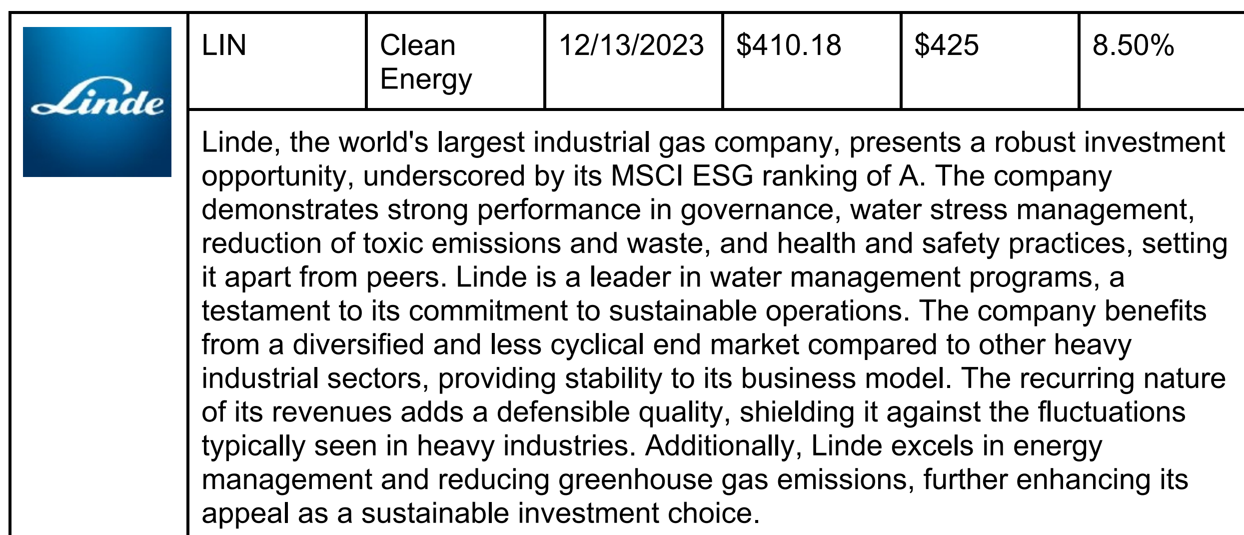
Tesla holds the title of the most valuable automotive brand globally and continues to lead the U.S. market in clean energy vehicle production. Despite recently losing its position as the global leader in EV sales to BYD Auto Co., Tesla remains the top seller in the U.S. The company boasts an MSCI ESG A rating, reflecting its strong performance in clean technology and carbon footprint management, though it faces challenges in labor management and product safety. Currently, Tesla appears to be in a transitional phase between growth cycles, and its recent overselling post-earnings suggests a potential for a market rebound. Additionally, Tesla's expansive supercharging network, which includes over 50,000 stations and is now accessible to other EV makers through the North American Charging Standard (NACS), represents a significant revenue opportunity. The recent pullback in Tesla's stock was partly driven by the absence of forward earnings guidance, highlighting a critical area of investor concern.



Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
NXT	Clean Energy	12/13/2023	$41.76	$57	5.89%

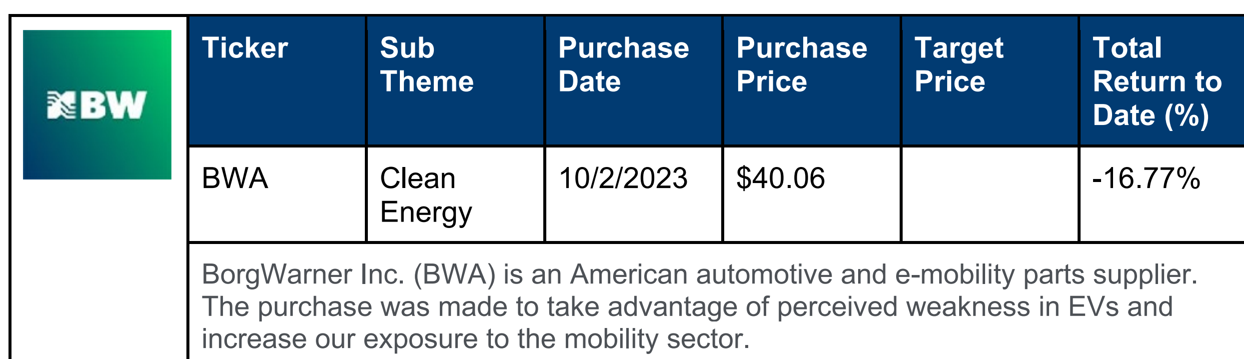
The investment in Nextracker is highly promising due to significant market tailwinds in the solar industry, driven by a global shift from fossil fuels to renewable energy and bolstered by supportive green policies like the IRA in the U.S. that encourage solar installations through tax incentives. As a market leader holding a 26-33% share for eight years, Nextracker is exceptionally well-positioned for growth, with a robust base of over 200 active customers, 80% of whom are repeat clients, and extensive connections across the solar energy ecosystem, including strong partnerships in North America and internationally. Nextracker's competitive edge is further sharpened by its innovative integration of hardware and software, supported by more than 350 patents, and a capital-light manufacturing model that minimizes investment by outsourcing production to 65 qualified suppliers across 19 countries. This strategic approach allows for optimization of logistics, customer needs, and compliance with labor and material regulations, positioning Nextracker as a prime candidate for continued leadership and expansion in the burgeoning solar market.

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)



LIN	Clean Energy	12/13/2023	$410.18	$425	8.50%

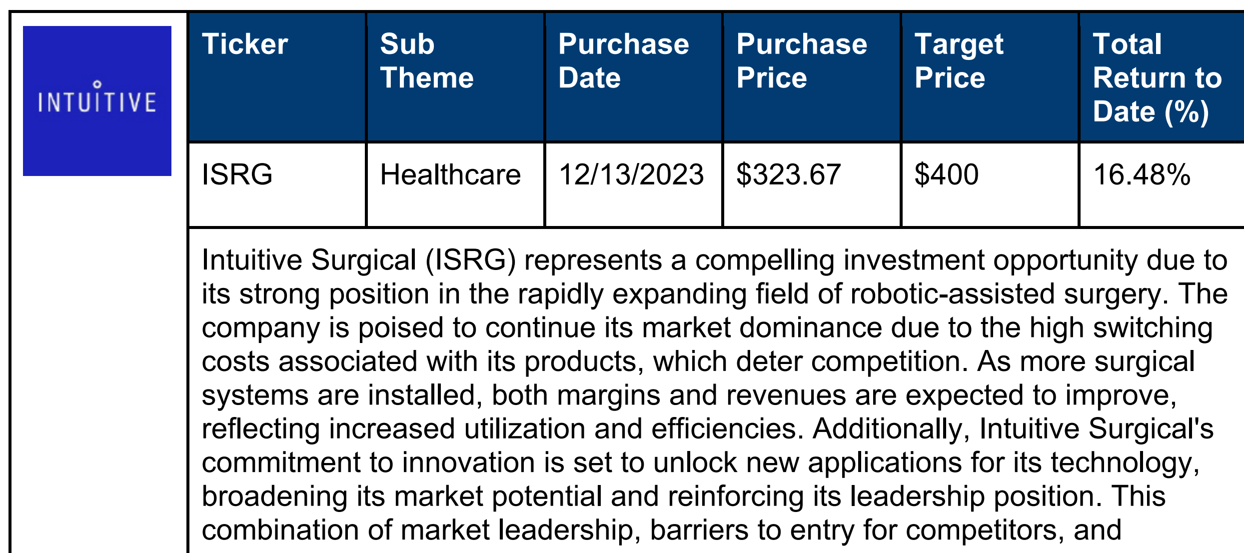
Linde, the world's largest industrial gas company, presents a robust investment opportunity, underscored by its MSCI ESG ranking of A. The company demonstrates strong performance in governance, water stress management, reduction of toxic emissions and waste, and health and safety practices, setting it apart from peers. Linde is a leader in water management programs, a testament to its commitment to sustainable operations. The company benefits from a diversified and less cyclical end market compared to other heavy industrial sectors, providing stability to its business model. The recurring nature of its revenues adds a defensible quality, shielding it against the fluctuations typically seen in heavy industries. Additionally, Linde excels in energy management and reducing greenhouse gas emissions, further enhancing its appeal as a sustainable investment choice.



Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
BWA	Clean Energy	10/2/2023	$40.06		-16.77%

BorgWarner Inc. (BWA) is an American automotive and e-mobility parts supplier. The purchase was made to take advantage of perceived weakness in EVs and increase our exposure to the mobility sector.

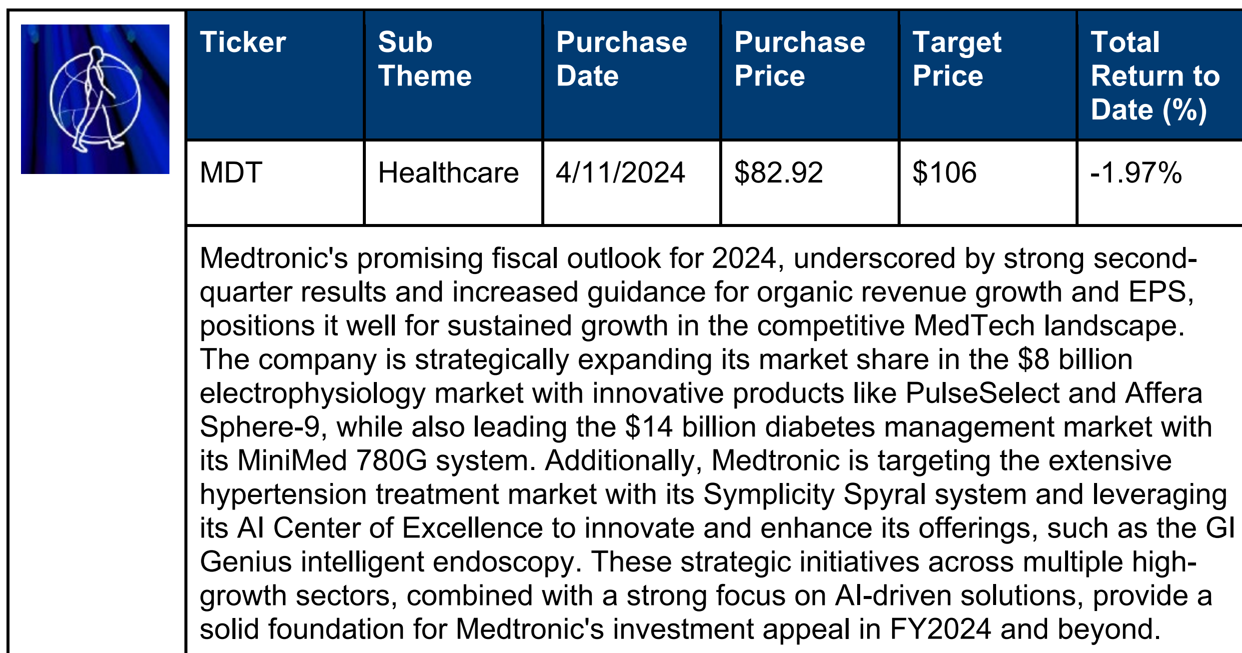
Healthcare



Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
ISRG	Healthcare	12/13/2023	$323.67	$400	16.48%

Intuitive Surgical (ISRG) represents a compelling investment opportunity due to its strong position in the rapidly expanding field of robotic-assisted surgery. The company is poised to continue its market dominance due to the high switching costs associated with its products, which deter competition. As more surgical systems are installed, both margins and revenues are expected to improve, reflecting increased utilization and efficiencies. Additionally, Intuitive Surgical's commitment to innovation is set to unlock new applications for its technology, broadening its market potential and reinforcing its leadership position. This combination of market leadership, barriers to entry for competitors, and

	continuous innovation makes Intuitive Surgical a promising investment for the future.

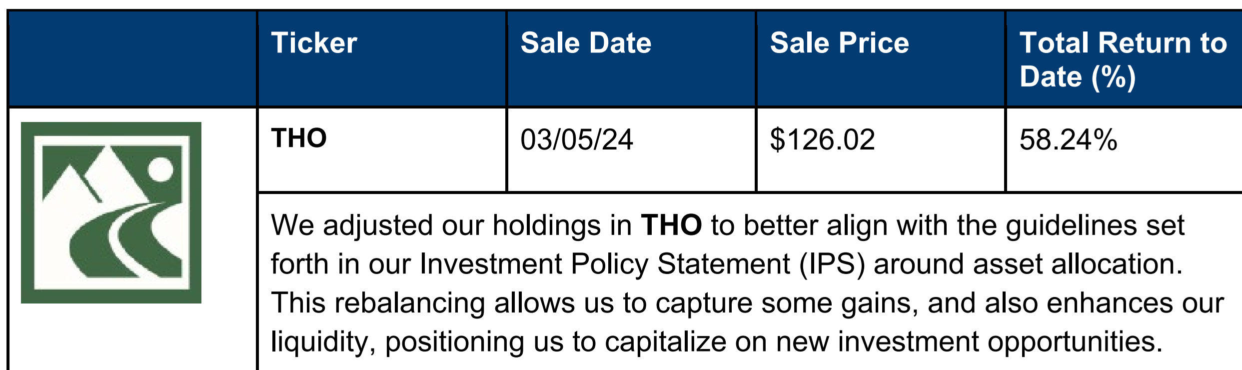


Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
MDT	Healthcare	4/11/2024	$82.92	$106	-1.97%

Medtronic's promising fiscal outlook for 2024, underscored by strong second-quarter results and increased guidance for organic revenue growth and EPS, positions it well for sustained growth in the competitive MedTech landscape. The company is strategically expanding its market share in the $8 billion electrophysiology market with innovative products like PulseSelect and Affera Sphere-9, while also leading the $14 billion diabetes management market with its MiniMed 780G system. Additionally, Medtronic is targeting the extensive hypertension treatment market with its Symplicity Spyral system and leveraging its AI Center of Excellence to innovate and enhance its offerings, such as the GI Genius intelligent endoscopy. These strategic initiatives across multiple high-growth sectors, combined with a strong focus on AI-driven solutions, provide a solid foundation for Medtronic's investment appeal in FY2024 and beyond.

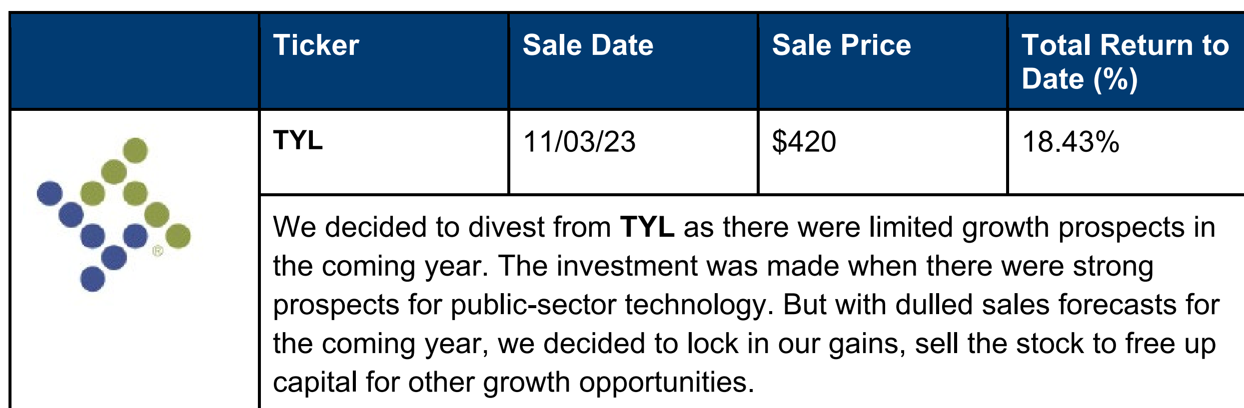
Sales

Principals remained in continuous review of SIF’s existing holdings to find opportunities to sell securities when necessary. This was driven in-part by the market conditions observed during the 2023-24 academic year, change in the underlying investment thesis as well as providing the fund with high levels of dry powder, which placed a greater impetus on evaluating new investments.

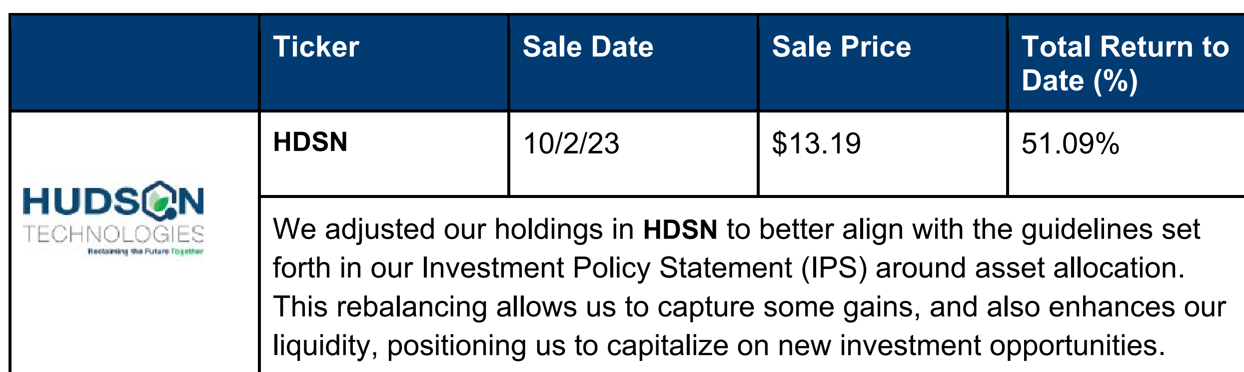


Ticker	Sale Date	Sale Price	Total Return to Date (%)
THO	03/05/24	$126.02	58.24%

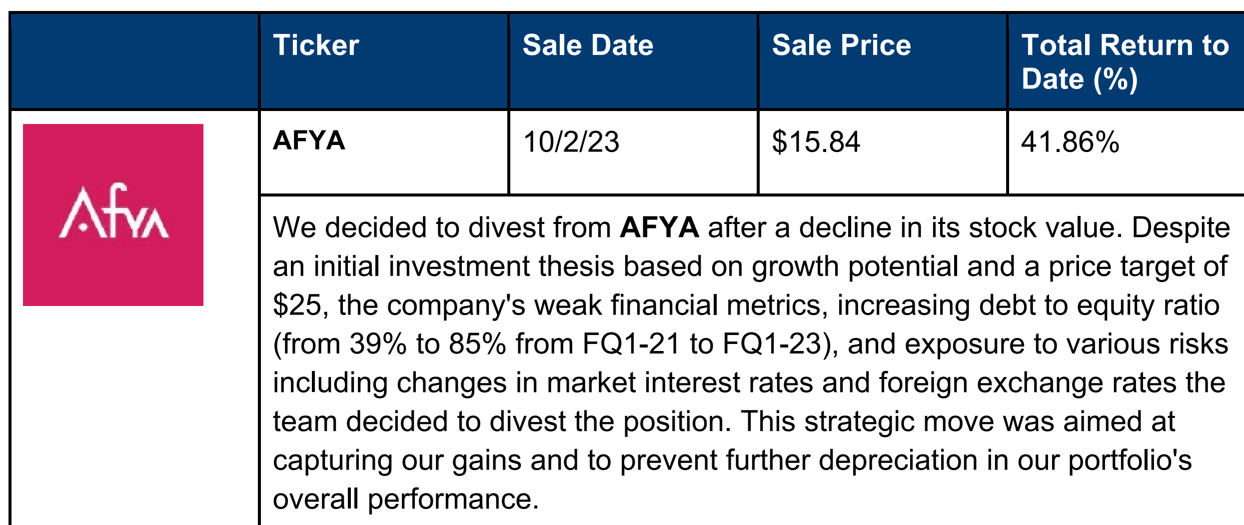
We adjusted our holdings in **THO** to better align with the guidelines set forth in our Investment Policy Statement (IPS) around asset allocation. This rebalancing allows us to capture some gains, and also enhances our liquidity, positioning us to capitalize on new investment opportunities.



	Ticker	Sale Date	Sale Price	Total Return to Date (%)
	TYL	11/03/23	$420	18.43%
	We decided to divest from **TYL** as there were limited growth prospects in the coming year. The investment was made when there were strong prospects for public-sector technology. But with dulled sales forecasts for the coming year, we decided to lock in our gains, sell the stock to free up capital for other growth opportunities.			

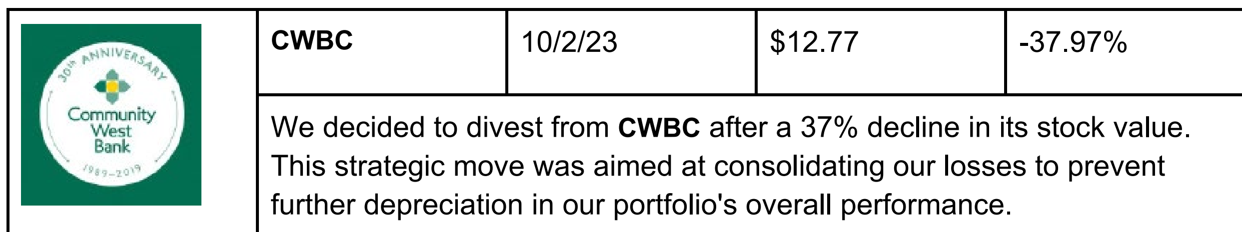


	Ticker	Sale Date	Sale Price	Total Return to Date (%)
	HDSN	10/2/23	$13.19	51.09%
	We adjusted our holdings in **HDSN** to better align with the guidelines set forth in our Investment Policy Statement (IPS) around asset allocation. This rebalancing allows us to capture some gains, and also enhances our liquidity, positioning us to capitalize on new investment opportunities.			

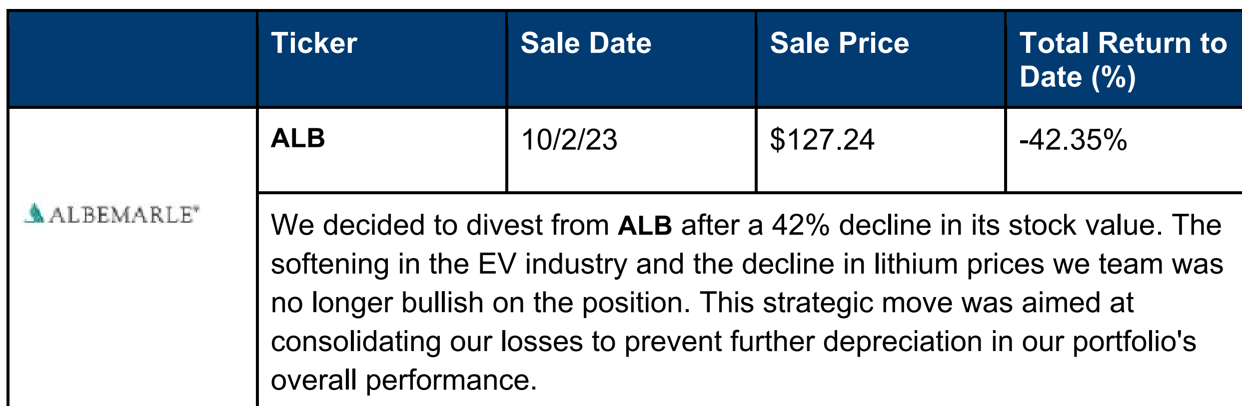


	Ticker	Sale Date	Sale Price	Total Return to Date (%)
	AFYA	10/2/23	$15.84	41.86%
	We decided to divest from **AFYA** after a decline in its stock value. Despite an initial investment thesis based on growth potential and a price target of $25, the company's weak financial metrics, increasing debt to equity ratio (from 39% to 85% from FQ1-21 to FQ1-23), and exposure to various risks including changes in market interest rates and foreign exchange rates the team decided to divest the position. This strategic move was aimed at capturing our gains and to prevent further depreciation in our portfolio's overall performance.			

	Ticker	Sale Date	Sale Price	Total Return to Date (%)



	CWBC	10/2/23	$12.77	-37.97%
	We decided to divest from **CWBC** after a 37% decline in its stock value. This strategic move was aimed at consolidating our losses to prevent further depreciation in our portfolio's overall performance.			



	Ticker	Sale Date	Sale Price	Total Return to Date (%)
	ALB	10/2/23	$127.24	-42.35%
	We decided to divest from **ALB** after a 42% decline in its stock value. The softening in the EV industry and the decline in lithium prices we team was no longer bullish on the position. This strategic move was aimed at consolidating our losses to prevent further depreciation in our portfolio's overall performance.			

Discretionary Fund Investments

Purchases

Principals performed diligence on both active and passive ETFs and mutual funds. The Fund allocated capital into the following funds:

Climate

IVEG	Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
	IVEG	Agriculture & Food	12/13/2023	$18.30	N/A	5.00%
	The iShares Emergent Food and AgTech Multi Sector ETF (**IVEG**) seeks to track the investment results of an index composed of companies from US and non-US markets that are expected to benefit from creating or using agricultural technologies or innovative food products or services. IVEG presents a strong investment opportunity that provides a social and environmental focus as it addresses increasing concerns over food security and environmental impact of agriculture and food sectors. This ETF allows us to increase exposure to multiple AgTech solutions and the potential upside of the emergent and growing AgTech sector. The ETF is global, forward looking, and targeted, yet diversified.					

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
SMH	Clean Energy	3/8/2024	$236.77	$279.36	-12.23%
	The semiconductor industry is poised for substantial growth driven by accelerating digitization and technological innovations, with significant advancements in cloud computing, artificial intelligence, 5G, and Gen AI fueling demand for increasingly efficient and powerful chips. Innovations such as smaller transistor sizes and advanced packaging technologies are vital in meeting this growing demand. Regulatory support further bolsters the industry's prospects, with the CHIPS Act providing $53 billion to enhance U.S. chip manufacturing capabilities, and the Inflation Reduction Act offering attractive tax incentives for projects related to renewable energy and electric vehicles. Additionally, global commitments to decarbonization, evidenced by the outcomes of COP28, are reshaping market expectations, with a projected tripling in renewable energy usage, doubling in energy efficiency initiatives, and a surge in electric vehicle sales to comprise 35% of the passenger vehicle market. This environmental focus, including the semiconductor industry's strides towards Net Zero targets, enhances the sector's appeal for sustainable investment.				

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
BLLD	Clean Energy	3/18/2024	$46.74	$52.64	-4.24%
	This investment fund is designed to achieve long-term capital appreciation by focusing on companies that are building the infrastructure necessary for a sustainable and inclusive economy. It primarily invests in common stocks and depositary receipts of entities that play a pivotal role in facilitating access to essential goods and services, enhancing connectivity, bolstering social infrastructure, and promoting environmental resilience. Employing a thematic investment approach, the fund aims to identify and invest in companies that are integral to various aspects of sustainable infrastructure. It carefully selects investments across key sub-themes, including electricity, renewables, transport, water, digital infrastructure, sustainable logistics, medical infrastructure, social housing, and education infrastructure. This strategy not only targets financial returns but also supports enhanced Environmental, Social, and Governance (ESG) outcomes, aligning investor values with broader societal benefits.				

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
TEMP	Clean Energy	4/11/2024	$43.30	$50.32	-1.85%
	The **TEMP** fund is well-aligned with the global sustainability trend and SIF's ESG-focused investment prospectus, targeting sectors benefiting from the low-carbon transition and favorable government regulations. With a competitive expense ratio and strong performance relative to peers, this actively managed fund is globally diversified, especially in the industrials sector, to reduce environmental impact and leverage opportunities worldwide. The fund targets notable growth in sustainable segments, achieving compound annual growth rates (CAGR) of 6.4% in Sustainable Transportation, 11% in Sustainable Construction, 13.4% in Sustainable Food, 7.5% in Water, 8.5% in Renewable Energy/Electrification, and 4.7% in Recycling and Re-Use. By focusing on these key areas, TEMP not only seeks financial returns but also contributes to environmental advancements, positioning it as an appealing choice for sustainable investment.				

Healthcare

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
FSMEX	Healthcare	4/11/2024	$66.59		-4.00%
	The Fidelity Select Medical Tech and Devices Fund investment was driven by a desire to upsize our exposure to total health care. It was pitched alongside the Vanguard Health Care Fund to provide broad exposure to tools, diagnostics, pharmaceuticals, insurance, and biotechnology. Both Vanguard Health Care and Fidelity were sized at $50,000 - the standard mutual fund investment is sized at $100,000.				

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
VGHCX	Healthcare	3/19/2024	$217.39		-5.36%
	The Vanguard Health Care Fund investment was driven by a desire to upsize our exposure to total health care. It was pitched alongside the Fidelity Select Medical Tech and Devices Fund to provide broad exposure to tools,				

	diagnostics, pharmaceuticals, insurance, and biotechnology. Both Vanguard Health Care and Fidelity were sized at $50,000 - the standard mutual fund investment is sized at $100,000.

Technology

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
IHAK	Cybersecurity	4/11/2024	$46.10		0%
	The **IHAK** investment thesis capitalizes on the escalating importance of cybersecurity, recognized globally as a critical economic and business risk. Cyber-attacks not only jeopardize data privacy, product safety, and occupational health but also pose unique threats to environmental security through potential pollution events. Despite its significance, SIF's current portfolio lacks dedicated exposure to this sector. The cybersecurity market is primed for substantial innovation and growth over the coming decade, driven by the necessity for companies to strengthen their cyber defenses continually. This ongoing need to enhance cybersecurity infrastructure promises sustained investment opportunities, making IHAK an attractive proposition for addressing this underserved segment in SIF’s portfolio.				

Mid-Cap Passive

Ticker	Sub Theme	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
VOT	Mid-Cap	4/11/2024	$231.77	266.54	0%
	The **VOT** mid-cap investment thesis is predicated on the observation that while market returns in 2023 and early 2024 have predominantly favored the large-cap sector, small to mid-cap companies have recently begun to show signs of recovery after a period of stagnation. These smaller companies have been disproportionately affected by high interest rates, which have increased the cost of accessing capital. However, as the Federal Reserve is expected to lower rates in the second half of 2024, there is a strong potential for a sharp rebound in the small and mid-cap sectors. Historically, these companies tend to outperform larger corporations during the early stages of a bull market. Furthermore, the expectation that U.S. equities will continue to outperform				

	their non-U.S. counterparts adds to the attractiveness of investing in U.S.-based mid-cap companies like those represented in the VOT fund. This positions VOT as a strategic choice for investors looking to capitalize on the anticipated shifts in market dynamics and rate adjustments.

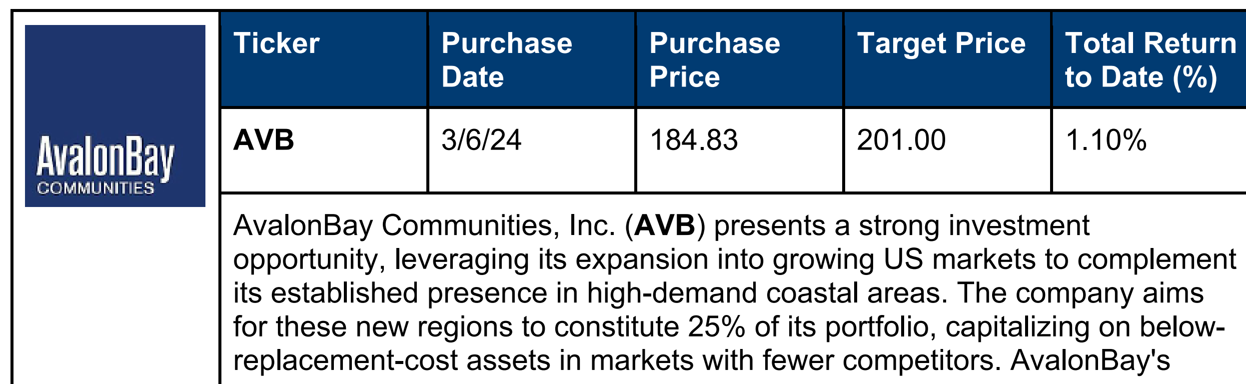
Sales

Ticker	Sub Theme	Sale Date	Sale Price	Total Return to Date (%)
JUST	Large Blend	10/2/2023	$60.75	3.55%
	We exited our position in the **JUST** ETF due to overlapping exposure within our portfolio and a misalignment with our Investment Policy Statement (IPS) goals and investment thesis. This sale has provided us with additional liquidity, enabling us to pursue other asset purchases and investment opportunities that better fit our strategic objectives.			

Ticker	Sub Theme	Sale Date	Sale Price	Total Return to Date (%)
WOMN	Large Blend Impact	10/2/2023	$29.91	5.80%
	We exited our position in **WOMN** due to its high expense ratio and low actionability in terms of women empowerment and leadership. This sale allowed us to fund the Nia Impact Solutions Investment.			

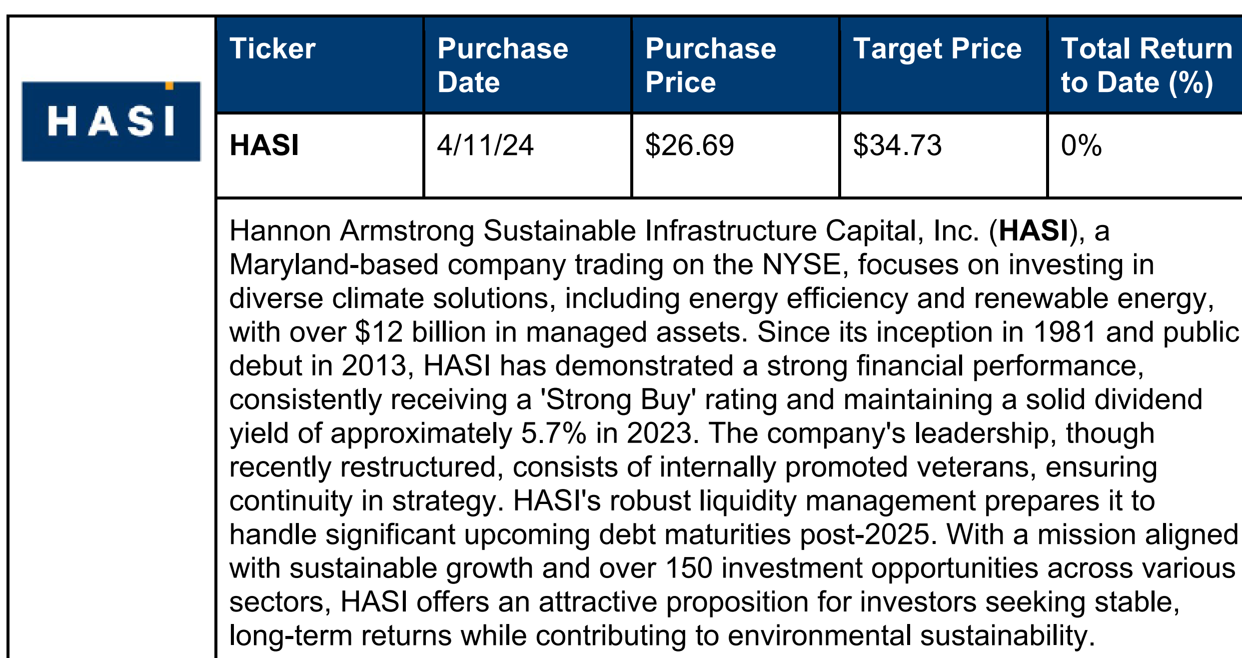
Real Assets

Purchases



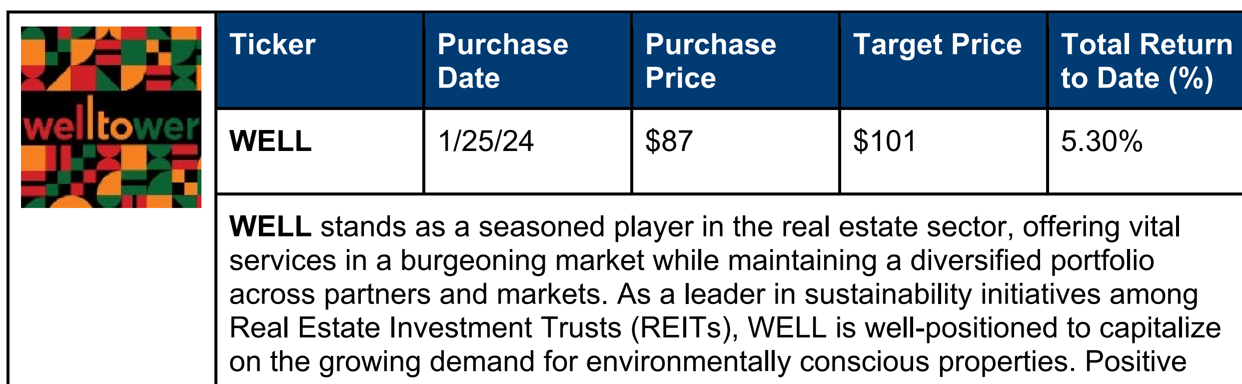
	Ticker	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
	AVB	3/6/24	184.83	201.00	1.10%
	AvalonBay Communities, Inc. (**AVB**) presents a strong investment opportunity, leveraging its expansion into growing US markets to complement its established presence in high-demand coastal areas. The company aims for these new regions to constitute 25% of its portfolio, capitalizing on below-replacement-cost assets in markets with fewer competitors. AvalonBay's				

vertically integrated model controls costs and quality across development, acquisition, and management, positioning it well in a robust U.S. rental market facing housing shortages and high homeownership costs. Commitment to affordable housing and sustainability further enhances its appeal, with over 91 affordable housing properties and numerous initiatives promoting energy efficiency. Financially solid, AvalonBay boasts increasing net operating income, rising funds from operations per share, and strong credit ratings, underscoring its operational efficiency and strategic market positioning. This makes AvalonBay an attractive option for investors seeking growth, stability, and ESG alignment.



Ticker	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
HASI	4/11/24	$26.69	$34.73	0%

Hannon Armstrong Sustainable Infrastructure Capital, Inc. (**HASI**), a Maryland-based company trading on the NYSE, focuses on investing in diverse climate solutions, including energy efficiency and renewable energy, with over $12 billion in managed assets. Since its inception in 1981 and public debut in 2013, HASI has demonstrated a strong financial performance, consistently receiving a 'Strong Buy' rating and maintaining a solid dividend yield of approximately 5.7% in 2023. The company's leadership, though recently restructured, consists of internally promoted veterans, ensuring continuity in strategy. HASI's robust liquidity management prepares it to handle significant upcoming debt maturities post-2025. With a mission aligned with sustainable growth and over 150 investment opportunities across various sectors, HASI offers an attractive proposition for investors seeking stable, long-term returns while contributing to environmental sustainability.

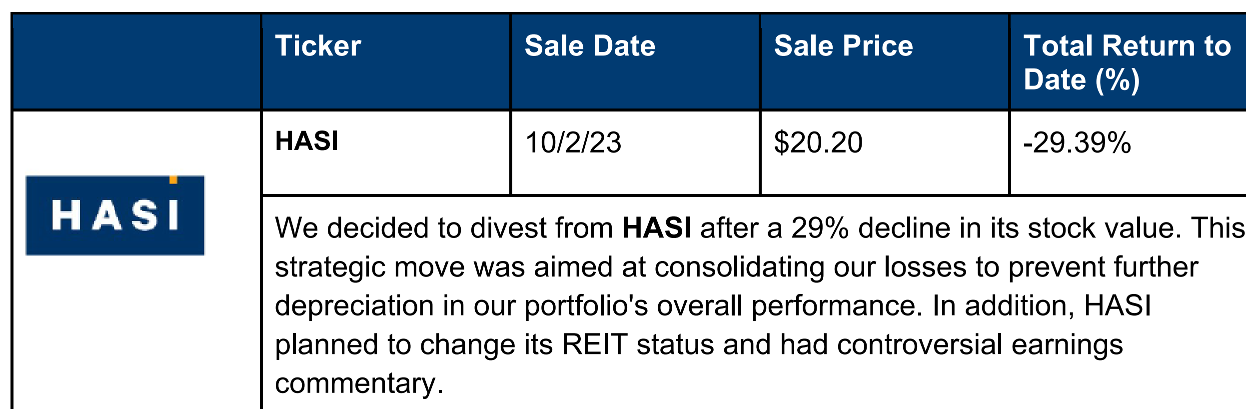


Ticker	Purchase Date	Purchase Price	Target Price	Total Return to Date (%)
WELL	1/25/24	$87	$101	5.30%

WELL stands as a seasoned player in the real estate sector, offering vital services in a burgeoning market while maintaining a diversified portfolio across partners and markets. As a leader in sustainability initiatives among Real Estate Investment Trusts (REITs), WELL is well-positioned to capitalize on the growing demand for environmentally conscious properties. Positive

	movements by management are anticipated to fuel further value creation, particularly through strategic portfolio repositioning post the dissolved JV with Chartwell, which is expected to enhance alignment across the Canadian portfolio and drive significant net operating income (NOI) growth. Additionally, the company's aggressive acquisition strategy, having executed $3 billion worth of acquisitions and with $1 billion more under contract as of October 30, 2023, demonstrates its commitment to expansion and value enhancement. Complementing its strategic vision is a robust liquidity position, boasting a healthy balance sheet and $6.6 billion in near-term available liquidity as of the same date. Supported by credit ratings of BBB+ and Baa1 from S&P Global Ratings and Moody's respectively, WELL stands as an attractive investment opportunity with strong growth prospects and solid financial stability.

Sales



	Ticker	Sale Date	Sale Price	Total Return to Date (%)
HASI	**HASI**	10/2/23	$20.20	-29.39%
	We decided to divest from **HASI** after a 29% decline in its stock value. This strategic move was aimed at consolidating our losses to prevent further depreciation in our portfolio's overall performance. In addition, HASI planned to change its REIT status and had controversial earnings commentary.			

Fixed Income

The rapidly changing macroeconomic landscape consisting of high inflation and the Federal Reserve's rapid interest rate increases allowed for interesting investment opportunities in Fixed Income in a rising yield environment. The Principals conducted a thorough evaluation of the fixed income portfolio holdings and executed select changes to invest in resilient asset classes and thoughtfully monitor duration. While our longer-term goal is to extend duration as we eventually expect interest rate decreases, we have tactically increased duration by selling off a significant amount of short-term treasury holdings. However, we have added a short-duration mortgage-backed securities fund to increase our exposure to a stable, highly-rated asset class and have considered other bond fund investments with duration between 4-6 years. Given recent Federal Reserve comments indicating a delay of interest rate cuts, we have kept duration at moderate levels and while we have extended it slightly, we have not shifted it significantly. We expect that future central bank rate cuts are already priced into markets. The fund has also observed a moderating labor market and acknowledges potential election volatility could have an impact on yields. We have selectively evaluated fixed income opportunities that have the

potential to add stability to our portfolio and diversify our holdings to find investment opportunities with low correlation to equities.

Purchase

Ticker	Sub Theme	Purchase Date	Purchase Price	Total Return to Date (%)
MBSD	Intermediate Government	3/6/2024	$20.40	-0.83%
	The **MBSD** investment fund leverages a robust strategy focusing on Ginnie Mae securities, recognized for their superior risk-return profile and virtually zero default risk. Historically outperforming treasuries, these Agency MBS enhance portfolio diversification and stability, thanks to government backing. The fund targets the optimal mid-level coupon stack, balancing risks associated with lower and higher coupons, thus mitigating market volatility and prepayment risks. Beyond financial returns, MBSD significantly contributes to social impact by facilitating accessible and affordable housing for underserved populations through its investments. This strategic blend of financial and social benefits makes MBSD a compelling investment option.			

Sales

Ticker	Sub Theme	Sale Date	Sale Price	Total Return to Date (%)
BGRN	Green Bonds	3/5/2024	$46.72	-0.79%
	We adjusted our holdings in **BGRN** to better align with the guidelines set forth in our Investment Policy Statement (IPS). This rebalancing also increased our duration, as we wanted to better position ourselves for future rate cuts.			

Ticker	Sub Theme	Sale Date	Sale Price	Total Return to Date (%)
SGOV	Ultrashort	3/5/2024	$100.35	-0.23%

<table>
<tr><td rowspan="2"></td><td>Treasury Bond</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">We adjusted our holdings in SGOV to better align with the guidelines set forth in our Investment Policy Statement (IPS). This rebalancing also increased our duration, as we wanted to better position ourselves for future rate cuts.</td></tr>
</table>

Nia Impact Solutions SMA

Additionally, we also invested $250,000 into the Nia Impact Solutions SMA. The Nia investment was driven by two key factors: our underweight positions in technology and healthcare and Nia's willingness to build an SMA for us with lower fees. Nia Impact Capital is a women-led B Corp that invests with a focus on transitioning public companies to a more sustainable, just, and inclusive economy. For us, Nia provided coverage and expertise to growth tech companies that were not just the standard magnificent seven along with exposure to health care providers, biotech, and pharmaceutical companies. On the energy front, Nia's limited exposure (outside of First Solar) allowed us to better position some of our energy investments made before the current group of principals started management. Nia is led by Kristin Hull, who holds a Ph.D in education from the University of California, Berkeley, and in her role as an educator, created a separately managed account for the Haas Sustainable Investment Fund. The purpose of this was to illustrate how an evergreen manager makes trades and manages a fund. The fund invested $250,000 in January, with Nia tailoring their Impact Solutions Fund to our goals.

IPS Revisions

Revision 1: Our fund managers voted to modify IPS targets for asset class allocation. The below table depicts our overall asset class allocation along with some supporting details around our rationale.

Asset Class	Target	Range	Percent Change
Equity Overall	65%	50-80%	+10%
Third Party Managed Passive Equity	30%	25-35%	-5%
Discretionary Fund Investments	20%	15-25%	+10%
Active Equities	15%	10-20%	+5%
Fixed Income	20%	15-25%	-5%
Cash	0%	0-5%	-5%
Other (VC, PE, Other Alternatives)	0%	0-5%	Tightened range

Equity: The fund identified several reasons to increase its equity target. First and foremost, the fund anticipated stock appreciation over a 5-year time horizon. With interest rates expected to decline in the next year, the fund felt the stock market was poised for growth and that our fund should benefit with increased equities exposure. Furthermore, our team has made a concentrated effort to expand the definition of sustainability to truly incorporate environment, social, and governance standards in our fund portfolio. We increased equities exposure to make more direct investments in companies in healthcare and agriculture. The fund continues to incorporate a California tilt in this year's IPS along with a reduction in international exposure by 5% (10% allocation in aggregate). A California tilt aligns with our defined value statement(s): "*The Fund is also conscious of its location in the state of California, and, more specifically, the University of California. Remembering that the University of California was founded with a mission of public service to the state, the Principals of the Fund plan to carry this tradition forward by keeping in mind the ecological and socioeconomic challenges that are most relevant to California."* We considered Aperio's California tilt product/solution. However, upon further review of a hypothetical investment mix, our fund managers ultimately decided the solution did not meet our IPS standards. We ultimately reduced our exposure to our Third Party Managed Passive Equity service, Aperio. We felt that increasing our cash balances was critical to make more investments in active and discretionary fund investments. Furthermore, the fund wanted more active participation from its managers.

Fixed Income: While the fund recognizes the value of a tactical fixed income position to anchor the portfolio and diversify our investments, we have decreased our target and range slightly by 5%. We see strong opportunities to achieve alpha in other categories, including active and passive equities. Additionally, because Treasury rates have remained high throughout the last year, we have been more selective in selecting active and passive fixed income fund investments and standards have become higher for investing in fixed income funds.

Cash: We aim to reduce our cash holdings and allocate those funds to other asset classes to optimize our opportunities to seek alpha. Cash on hand is intended to be held temporarily and put to use for identified investment opportunities. Short-term treasury bills have been viewed as a safe, efficient way to park cash when previous investments are liquidated, especially when yields have been in the low 5% range from 2023-2024, but we aim to efficiently move those investments into higher-yielding asset classes when investment opportunities are selected.

Other (PE, VC, Other Alternatives): The target has remained at zero because these asset classes have been deemed as having too risky for the size of our fund. We aim to align our investment goals with those of the stakeholders of the fund and have agreed to exclude these investments.

Revision 2: Our fund managers voted to Include a new category to the Impact Scorecard: “Sustainable Resource Use” and to remove the category “California”. As a reminder, the impact scorecard is used to justify/validate an investment decision. Should an investment thesis/hypothesis not meet the scorecard standard, the investment will not be considered. The previous year's impact scorecard consisted of five criteria: Gender, Human Rights/Responsible Consumption, Climate, Water, and California. “California” as a category was removed as the principals have opted to evaluate the global impact of each investment rather than a localized lens. The first four of these categories correspond to Ethos ESG (SIF’s primary ESG data vendor for 2022-2023) rating criteria for Gender Equality, Fair Labor Practice, Climate Action, and Water/Sanitation, respectively. Our team opted to include another standard: Sustainable Resource Use. There is a clear differentiation between Climate Action and Sustainable Resource Use. Per Ethos ESG, the Climate Action impact ranking is assessed on the areas of disaster readiness and effective aid, reduced greenhouse gas emissions, and renewable energy growth, while the Sustainable Resource Use impact ranking is assessed on the areas of conflict-free mineral production, reduced waste, and sustainable use of natural resources. As an example, a company that produces certain types of lithium-ion batteries for electric vehicles or battery storage could score well in Climate Action for its resulting reduction in scope 3 tailpipe emissions, but also score poorly on Sustainable Resource Use if it sources minerals such as cobalt from Congo or if it does not take into consideration end-of-life disposal/management of these batteries. Moreover, adding this criterion to the scorecard aligns with SIF’s values of building a more equitable, inclusive, and sustainable society. While there is an urgent need to accelerate the Climate transition and invest and build critical technologies to get us there, we

must also take into account the impact this may have on affected communities and advocate for Climate Justice. We should ask important questions of where and how these resources are produced and used, and where and how these materials will be disposed of at its end of life.

Revision 3: Our fund managers added an additional layer of sustainability goals to reflect our synthesis and interpretation of external ESG ratings. In line with the scale of the Ethos ESG impact rating, each asset investment is evaluated on a score of A, B, C, D, or F. In the past, this rating has not been referenced on the annual report and there has been limited reference to (1) impact score requirements for purchases and (2) impact-related reasons for sale.

> *"Impact-related reasons for sale include:*
> *1. Failure to meet impact thesis (from original pitch)*
> *2. Meaningful deterioration of impact scorecard and limited opportunities exist for shareholder engagement"*

As a fund, we plan to value how our asset investments perform in each of the impact criteria. To address this issue, our team proposes the following actions:

> ***Action 1:*** Rather than qualifying the score which is translated from Ethos ESG A, B, C, D, F rating, we should use the exact score provided by our internal and external sustainability analysis.
>
> ***Action 2:*** Clarify cut-off scores: if an asset investment has a score of D or F in any of our impact criteria, the holding should be sold if held or deemed as not eligible for investment if pitched. If an investment team requests an exception despite a score of "D" or "F", a case will be presented, which will require a 75% majority rule (from 100% SIF team participation). The argument should present a pathway through which the asset will achieve an impact score of "C" or higher as well as a time frame in which this score is expected to be achieved. If the score is not achieved by the deadline communicated in the pitch, the investment will be sold at the deadline.
>
> ***Action 3:*** The impact scores of each asset investment based on the impact scorecard should be included in the report. Asset Investments that have a score of D or F in any of the criteria, should have its specific case/argument included in the report.

Ultimately, these actions will provide greater accountability and transparency of our investments.

Sustainability Performance

ESG Data & Reporting

ESG reporting has become the go-to method for public companies to share their environmental, social, and governance practices, offering investors more transparency. However, while widely accepted, the SIF principals have found it challenging to measure the actual impact of the SIF portfolio using solely ESG data. ESG often prioritizes avoiding harm over measuring actual impacts, now widely regarded as a means to assess overall business risk. The proliferation of ESG rating firms like Ethos and MSCI has led to the creation of disparate frameworks, resulting in overlap and inconsistency. Moreover, institutional investors contribute to this complexity by adding their own metrics to these frameworks.

This past year, SIF predominantly utilized MSCI and Ethos ratings when scoring prospective investments. MSCI and Ethos are two of the leading ESG scoring companies, and their ratings are widely used by investors to assess ESG risks and opportunities. However, relying solely on MSCI and Ethos ratings has its limitations, as they do not provide a complete picture of a company's impact performance.

Although limited, ESG reporting is the resource available with the most extensive database of public companies, enabling SIF principals to align decisions with the IPS. Given the limitations of ESG ratings, our goal is to integrate a range of strategies to contribute impact, signal that measurable impact matters, actively engage, and grow new undersupplied capital markets. We encourage future principals to improve impact measurement beyond ESG ratings, define a clear framework, and potentially develop a Theory of Change for the SIF at the beginning of next semester. While principals acknowledge existing gaps, these are expected to be addressed as the Impact Measurement and Management industry for public equities evolves, aiming to balance high-quality impact measurement with accessibility and usability.

To mitigate the limitations of relying solely on ESG reporting from a single source, a broader set of tools is needed to provide a more complete picture of a company's ESG performance. This can include using multiple ESG scoring companies to offer a comprehensive view of a company's ESG risks and opportunities. By incorporating ESG ratings from other reputable companies such as Sustainalytics, FTSE Russell, Ethos, or Bloomberg ESG, principals can offset the limitations of any one ESG scoring company. Additionally, principals can utilize other tools such as engaging with companies on ESG issues, voting proxies to promote ESG-related proposals, and collaborating with other student-led funds to influence corporate behavior. Furthermore, additional frameworks suggested by the SIF principals, such as Theory of Change, Double Materiality, TCFD considerations, SEC Climate Disclosures, and a collaborative approach during investment pitches, can further enhance decision-making processes. By integrating a blend of these tools and recommendations, principals can enhance their ability to make informed investment decisions that align more closely with SIF values and risk tolerances.

Future principals should also consider not only utilizing a broader set of ESG reporting sources but being cognizant of how each rating agency derives its score. Some of these differences include various methodologies, coverage, emphasis on different ESG factors, and update frequency. Each company may have a distinct methodology for assessing ESG risks and opportunities, potentially leading to differences in ESG scores for the same company. Moreover, the coverage of different rating agencies may vary, affecting the scope of ESG analysis. Additionally, different rating agencies may prioritize various ESG factors differently, resulting in divergent scores for the same company. Furthermore, the frequency of updating ESG ratings varies among rating agencies, impacting the timeliness of the information provided.

Impact Overview

The methodology adopted by the principals for 2023-2024 expanded upon last year's exclusionary approach to focus on refining the selection of securities based on sector, subject matter, and specific assets. The investment team adopted a holistic strategy, evaluating financial performance alongside sustainability considerations derived from ESG factors and significant themes. This year, there was a deliberate effort to delve into and prioritize impact areas that had previously received less attention, aiming to better adhere to the IPS Value Statement. These included key challenges such as Climate Change Mitigation and Adaptation, Clean Water and Sanitation, Human Rights Protection and Responsible Consumption & Production, and Gender and Racial Equity.

Exclusionary Approach

In line with the previous year's strategy, the SIF principals began with an exclusionary approach by eliminating sectors and opportunities that the group considered uninvestable, primarily guided by SIF values. This involved excluding weapons and energy firms not transitioning to cleaner energy sources, as well as companies with documented human rights violations or scandals. Additionally, firms lacking in ESG disclosures were disregarded, aiming to promote ESG reporting standards, though without strict adherence to SASB guidelines due to the early stage of reporting adoption. Disclosure types varied, including sustainability reports, risk discussions in 10K filings, voluntary sustainability goals, and outcome measurements. Principal focus extended to industry-specific reporting metrics such as greenhouse gas emissions, California presence, human rights, gender diversity in leadership roles, and water and sanitation standards.

Concerning the weapons screen, the Fund refrains from investing in companies involved in the manufacture, sale, or distribution of anti-personnel mines, cluster munitions, white phosphorus, chemical, biological, or nuclear weapons. Similarly, companies dealing in assault and non-assault firearms or small arms for civilian, military, or law enforcement purposes are excluded, along with those deriving 5% or more of their revenues from such sales. Companies generating 5% or more of their revenues from the sale of weapon systems and related components to the military or

defense industry are also excluded, except for those offering non-weapons-related products or services.

Regarding the Prison Industrial Complex screen, the Fund recognizes the exacerbation of poverty and inequality due to mass incarceration. Consequently, it avoids investment in private prison operators and companies primarily serving incarceration and detention facilities. Additionally, companies contributing to the militarization of the U.S.-Mexico border or engaged in immigrant policing, monitoring, and surveillance are excluded from the Fund's portfolio.

Impact Framework

SIF, over the course of the year, has decided to enhance its impact framework by embracing a multifaceted approach that extends beyond traditional ESG reporting. While acknowledging the value of ESG data in providing transparency and risk assessment, we recognize the need to augment these metrics with a broader set of tools to comprehensively evaluate a company's impact performance.

To achieve this, SIF will continue to leverage multiple reputable ESG scoring companies, including but not limited to MSCI and Ethos, to obtain a more nuanced understanding of companies' ESG risks and opportunities. By incorporating ratings from diverse sources such as Sustainalytics, FTSE Russell, and Bloomberg ESG, the fund can mitigate the limitations inherent in relying solely on one provider. This diversified approach ensures a more comprehensive assessment of ESG performance, considering variations in methodologies, coverage, and emphasis on different ESG factors among rating agencies. We have also amended our IPS to reflect that the future Principals should use at least three ESG ratings to ensure that we do not fall prey to the biases of one ESG rating agency. Furthermore, the SIF will actively engage with companies on ESG issues, exercise voting proxies to advocate for ESG-related proposals, and collaborate with other student-led funds to amplify their influence on corporate behavior. Embracing additional frameworks such as Theory of Change, Double Materiality, and TCFD considerations will provide further guidance in assessing the holistic impact of investments and aligning them with SIF values and risk tolerances.

As the impact measurement and management landscape evolves, the SIF remains committed to refining its approach to ensure a balance between high-quality impact measurement and practical usability. While challenges persist, the SIF principals are confident that by integrating a blend of tools, frameworks, and engagement strategies, they can enhance their ability to make informed investment decisions that drive positive social and environmental change while delivering financial returns in line with investor expectations.

Shareholder Engagement

Our principals periodically review and evaluate shareholder proposal opportunities that allow our fund to make an impact. We reviewed a list of Shareholder Proposals engaging companies that we are invested in actively or passively through Aperio investments. This year we supported one Shareholder Proposal with As You Sow that requested Danaher Corp. report to shareholders on the effectiveness of the Company's DEI efforts. Within the healthcare sector, statistically significant positive correlations have been found between increased manager diversity and free cash flow. Danaher has not yet shared sufficient hiring, retention, or promotion data to allow investors to determine the effectiveness of its diversity and inclusion programs. Further, the Company was sued by a pension fund for its lack of diverse leadership. Information on the company's DEI efforts are important information for investors to have and encouraging the company to report this information can further its efforts. In addition, our portfolio has an increased interest in the healthcare sector and believes in the importance of furthering diversity, equity, and inclusion efforts in this space. Lastly, we appreciated that the proposal focused on driving greater transparency into relevant metrics.

While we only supported one shareholder proposal, we reviewed many and evaluated whether we should support them based on alignment with our portfolio's values and objectives as well as the merit of the proposal and impact that it could achieve. For example, we chose not to support a shareholder proposal with Altria, one of the world's largest producers and marketers of tobacco, cigarettes, and related products (which we are passively invested in through Aperio). The proposal engaged Altria in issues related to the significant plastic waste from cigarette filters and requested that the company issue a public report, at reasonable expense and excluding proprietary information, assessing the benefits to the Company of extended producer responsibility laws for spent tobacco filters for tobacco companies operating in the US. Upon discussion, the fund decided not to publicly support a proposal as an investor in the tobacco industry as this is a passive investment that is not fully aligned with our fund's values. Our principals saw that our funds' focus on health this year is fundamentally at odds with engaging with the cigarette industry. In contrast, we believe our investments in companies like Waste Management and supporting commercial recycling are better ways to invest in reduced waste that do not misalign with our portfolio's values.

We also evaluated shareholder proposals for merit, strategic alignment, and impact and decided not to proceed with several on this basis. For example, in some instances we thought proposals were asking for detail beyond what was needed to advance the company's strategic priorities, or asking for data that was already disclosed, or requesting data from a company that would have little impact on investor or board decision-making. One proposal we thought fit into this last category of low likelihood of impact was a proposal requesting Coca Cola to issue a public report detailing known or potential risks or costs to the Company and its employees caused by the decline in the quality of their accessible medical care, specifically related to issues around and beyond reproductive rights and access to maternal care. As You Sew led a very similar

shareholder proposal in 2023 that requested Coca-Cola to analyze the potential impact of restricted abortion access on their business, including employee recruitment and retention in affected states. This proposal was rejected by investors. Since As You Sow had recently filed a very similar proposal, we decided not to support this proposal as we did not believe it would gain traction and we did not see how the report would have a meaningful impact on the state reproductive rights. Another example we considered and did not sign onto included a proposal asking Johnson & Johnson's BOD to adopt a policy that tied climate metrics more directly to executive pay. Upon further evaluation, we identified that Johnson and Johnson does in fact already tie several greenhouse gas metrics to executive compensation. Finally, we reviewed a proposal for CitiBank, where As You Sow planned to create a resolution regarding climate change disclosure similar to the one already proposed to Bank of America. However, we rejected this because CitiBank already had a report in place addressing these issues.

Further, our fund believes in the importance of shareholder activism to engage companies on important issues and will continue to evaluate potential opportunities, ensuring that they align with our portfolio's values and hold merit.

Key Learnings, and Recommendations for Improvement

Introduction

Since its inception in 2008 as the nation's pioneering student-managed investment fund focused on responsible investing, SIF (Sustainable Investment Fund) has provided a unique platform for Haas MBA students to gain hands-on experience managing real assets in alignment with ESG (Environmental, Social, and Governance) principles. Over the years, the SIF has evolved into a leading fund for MBA students interested in ESG investing within public markets. Supported by Haas' Sustainable and Impact Finance Initiative (SAIF) since 2020, the SIF has benefited from the expertise and resources of its distinguished advisory board.

Goals

At the beginning of our stewardship, we established several goals aimed at achieving sustainable and responsible investment outcomes:

- **Financial Performance:** Achieving competitive financial returns while adhering to ESG criteria.
- **Impact:** Investing in companies demonstrating positive environmental, social, and governance practices.
- **Transparency:** Ensuring transparency in our investment processes and effectively communicating our actions to stakeholders.
- **Education:** Enhancing our knowledge and understanding of sustainable investing principles and practices.

Key Learnings

Our semester managing the sustainable investment fund has provided invaluable insights into various aspects of responsible investment stewardship:

1. **ESG Due Diligence and Greenwashing:** We learned the importance of conducting thorough due diligence on ESG investments to avoid falling prey to greenwashing. This involved scrutinizing ESG reports, engaging with company management, and assessing third-party evaluations to ensure alignment with our sustainability goals.
2. **Time Horizons and Investment Strategy:** Understanding the time horizons associated with each investment was critical. We recognized the need for a longer-term perspective, balancing short-term financial goals with long-term sustainability objectives.
3. **Challenges of Group Decision-Making:** Navigating group decisions posed challenges due to varying perspectives, risk tolerances, and investment preferences among team members. Effective communication and consensus-building were crucial in addressing these challenges.
4. **Learning about New Industries with Sustainability Angles:** Exploring new industries that still had a sustainability angle broadened our understanding of investment

opportunities. We recognized the potential for impact in sectors beyond traditional ESG focus areas.

5. **Metrics and Calculations for Evaluating Investments Across Asset Class:** Developing metrics and calculations for evaluating different investments helped us assess their sustainability performance more comprehensively.
6. **Leveraging Financial Research and Data Evaluation Tools:** Through exploration and hands-on experience, we've honed our skills in utilizing various platforms to conduct thorough analyses and make informed investment decisions. More detail is below:
    a. **Ethos ESG**, a part of ACA Group, has been instrumental in our journey towards integrating environmental, social, and governance (ESG) considerations into our investment process. Through Ethos ESG's software platform, we've gained access to comprehensive ESG data and analysis, enabling us to assess companies' sustainability practices and make investments that align with our responsible investing principles.
    b. **MSCI**, a leading provider of ESG ratings and research, has equipped us with essential tools and insights to navigate the evolving landscape of sustainable investing. By leveraging MSCI's comprehensive ESG data and analysis, we've been able to integrate sustainability considerations into our investment decisions, ensuring that our portfolio reflects our commitment to responsible investing practices.
    c. **As we sow,** as a means to harness shareholder power for impact,
    d. **FactSet**, a leading financial data and analytics tool that provided a wide range of financial analysis.

Recommendations for Improvement

We identified two key changes to enhance the efficacy and integrity of our decision-making processes:

Change 1: Improving the Pitch Process

Standardized Pitch Template

We've devised a template that consolidates crucial information for all pitches, with a focus on managed equities and passive equities, as they are the most commonly presented. While adherence to the template's design is optional, its content should be incorporated into all pitches.

Collaborative Approach

Our second proposal aims to diversify the perspectives presented during pitches. Typically, presentations emphasize the positive aspects of an investment, understandably aligning with our objective of identifying lucrative opportunities. However, this predisposition towards optimism may inadvertently lead to confirmation bias, as presenters may overlook potential

drawbacks. To counter this, we suggest a collaborative approach, wherein the presenter partners with a classmate tasked with highlighting reasons why the equity may not be a favorable investment. By presenting both sides, we ensure principals have access to a comprehensive spectrum of information, facilitating more balanced investment decisions.

Enhanced Voting Process

Currently, the lack of contextual feedback accompanying votes hinders the presenter's ability to glean insights and refine subsequent pitches. We propose revamping the voting criteria to include an open text field, mandating voters to articulate their rationale for voting "yes," "no," or "I could live with it." To maintain anonymity, the results can be summarized using ChatGPT. This feedback mechanism not only benefits presenters by offering constructive criticism but also serves as a valuable resource for understanding the class's investment priorities, which can evolve over time.

These proposed changes aim to foster a more informed and equitable decision-making process, ultimately enhancing the quality of our investment decisions.

Dedicated Training and Guest Speaker

We recommend that one of the classes be dedicated to deep diving into the pitch process, expectations, and examples. In addition to that, it would be useful to have a guest speaker from a relevant background (professor or someone from an existing fund) cover some of the best practices of making an investment pitch specifically from an ESG perspective.

Change 2: Investment Monitoring

Effective investment monitoring is essential for ensuring the continued success and alignment of our portfolio with our investment objectives. In this section, we outline several key recommendations aimed at enhancing our monitoring practices and maximizing the performance of our holdings.

Weekly Portfolio Review

We propose instituting a weekly review of our entire portfolio as the first agenda item in every class session. This regular review will allow us to stay informed about the performance of our holdings, identify any emerging trends or risks, and make timely adjustments as needed to optimize portfolio performance.

Macro Economy Presentations

In addition to monitoring our investment holdings, we suggest incorporating weekly presentations on the macro economy into our class sessions. These presentations, led by students taking turns, will provide valuable insights into broader economic trends and their

potential impact on our portfolio. By staying informed about macroeconomic factors, we can make more informed investment decisions and adapt our strategy accordingly.

Sector Exposure Limits

To manage risk and ensure diversification within our portfolio, we recommend establishing sector exposure limits for both current holdings and investment recommendations. These limits will help prevent overconcentration in any particular sector and mitigate the impact of sector-specific risks on our portfolio performance.

Technology Stock Emphasis

Given the importance of technology stocks in today's market landscape, we propose a higher level of technology stock recommendations compared to other areas in the market. This emphasis on technology stocks reflects their significant growth potential and innovation-driven nature, aligning with our goal of achieving competitive financial returns.

Portfolio Viewing Access

Ensuring that everyone involved has access to view the portfolio is crucial for transparency and collaboration. We recommend providing all team members with viewing access to the portfolio, allowing them to monitor performance, track changes, and contribute to decision-making discussions effectively.

Conclusion

Our semester in sustainable investment management has been a journey of learning, growth, and reflection. We have gained valuable insights into the complexities of responsible investing, emphasizing the need for thorough due diligence, understanding time horizons, and fostering effective group decision-making processes. As we continue our journey, we are committed to applying these learnings to achieve our goals of financial performance, impact, transparency, and ongoing education in sustainable investment stewardship.

Thought Leadership Pieces

We explored several areas of thought leadership that encompassed the following themes:

Theme 1: Using public markets to advance positive impact

During the course, we discussed at length whether and how sustainable investing should play “defense” versus “offense”, wherein defense is minimizing risk and maximizing value to the portfolio through investment in more sustainable funds whereas offense is driving or incentivizing positive change more directly. Through the year we had an opportunity to hear from many fund managers, NGOs, and other groups about sustainable investing and posed these questions to them. Often, we heard that sustainable investment funds have many tools to play “defense”, for example through screening criteria, review of ESG ratings, and evaluation of governance structures and sustainability reports, etc. There appears to be a more limited opportunity for the public markets to play “offense,” with shareholder engagement cited as the sole lever during our discussions. This brings us to the question - how could public markets drive positive impact beyond shareholder engagement, e.g., through capital allocation? When asked this question, fund managers often cited the lack of quality and comparable data.

Theme 2: Navigating the New Climate Disclosure Landscape

There have been significant strides in the ESG and climate disclosure landscape over the past year, with new requirements for disclosure making traction in the US, CA, and the EU. Our principals explored the state of current ESG and climate reporting regulations and the impact of these regulations on our fund. New and proposed legislation from the SEC, EU, and California will mandate climate-related disclosures for companies. These regulations require companies to disclose emissions as well as information on climate-related risks, risk management processes, and climate targets and goals. While these regulations all expand reporting requirements for companies, the regulations diverge in their definition of materiality and scope. First, the regulations currently diverge on their definitions of materiality with the EU regulations emphasizing “double materiality” which expands the definition of materiality to mean that companies must disclose information on the impact of their business on the environment and society irrespective of the positive or negative effect of such impacts on companies’ financials. In contrast, the CA and SEC roles define materiality to be more in line with the potential impact on a specific company’s business or financials. Second, when it comes to scope, the SEC rule currently excludes Scope 3 emissions, while the CA and EU legislation calls for disclosure of Scope 3 emissions. Further, implementation challenges for these regulations have become clear through legal challenges and questions in application. Overall, while there are challenges and uncertainty, there are actionable insights that our fund can apply from following the evolving regulations. We identified that our principals should develop expertise in the TCFD framework for climate risk disclosure, incorporate climate risk analysis into due diligence, and closely monitor regulatory developments.

An intriguing and promising path forwards towards measuring impact may be the IRIS+ set of core metrics. These metrics were developed by the Impact Management Project and advocated for by the Global Impact Investing Network (GIIN) and establish a set of 'core indicators' across 18 impact areas. These metrics characterize the impact category, the type and magnitude of impact intended, the time frame, and risks to the impact, underpinned by standardized definitions and measurement practices for comparability. Scaling this type of impact metrics broadly across equities could enable investors to understand the types of impacts companies have, seek to have, and associated progress and risks. Scaling these metrics across equities, however, presents challenges, notably that many equities are not appropriately characterized as "impact firms" and do not fit neatly into "impact categories", so new metrics would likely need to be considered. Voluntary adoption of these metrics may be challenged by greenwashing perceptions and challenges associated with verifiability.

Theme 3: Changing paradigms around the energy transition

Throughout the year, our class also engaged in discussions around the approach to sustainable investing in the energy sector and the current IPS exclusion on oil and gas. Over the last few years, geopolitical actions such as the Russian invasion of Ukraine have fueled concerns around energy security. In parallel, there has been an increasing focus on the role of oil and gas companies in an orderly energy transition. For example, while COP28 in Q4 2023 included an agreement to transition away from fossil fuels the conference also launched a suite of 'practical climate solutions' and associated funding to catalyze methane reductions within the oil and gas sector[1]. Similarly, oil and gas companies have been among the recipients of hydrogen hub incentive programs sponsored by the US Department of Energy to advance lower carbon energy.[2] These sentiments around both energy security and the role of oil and gas in the energy transition were echoed by Larry Fink, CEO of Blackrock, in his 2024 annual letter to shareholders as he called for what he termed 'energy pragmatism' - an approach that balances energy security and the energy transition. As stated in his letter describing conversations with diverse stakeholders involved in the energy transition, "Even the most climate conscious...saw that their long-term path to decarbonization will include hydrocarbons, albeit it less of them, for some time to come." Indeed, even in the most aggressive decarbonization outlooks put forth by the IEA and others, oil and gas is generally considered to play a substantial role in the energy mix for the next 20 years. Additionally, approximately 80% of the emissions associated with oil and gas products are from the use of those products by others, e.g., by almost every equity we hold in the SIF portfolio. Investing in oil and gas companies could balance energy transition and energy security concerns, incentivizing both near-term reductions and investments into alternative energies and broadening exposure to the energy sector.

There are additional sustainability investment reasons to reconsider the oil and gas exclusion. To start, there is substantial opportunity for near-term and cost-effective emission

[1] COP 28: What Was Achieved and What Happens Next? | UNFCCC

[2] Hydrogen Hub Projects Awarded $7 Billion by US Department of Energy | White & Case LLP (whitecase.com)

reductions within the oil and gas value chain. For example, reductions in methane emissions achieved through equipment upgrades or improved monitoring can improve both the quantity of saleable product and contribute to reduced emissions in the short-term. Shareholder engagement (instead of divestment) can drive continued focus on those targets and continued. While regulations are increasingly driving performance improvements in the US and certain other regulated markets, shareholder engagement can help serve to extend reductions beyond what regulations are doing and moreover extend the portfolio of potential reductions to the rest of the globe. Secondly, oil and gas companies are some of the largest investors in decarbonization, with large venture capital investments to advance new clean energy technologies as well as substantial ($10B+ over the next five years) commitments to emission reductions. Third, traditional oil and gas companies are looking for ways to leverage their core competencies to accelerate the energy transition and stand-up new product lines, for example technologies such as carbon capture, utilization, and sequestration (CCUS) and hydrogen, both promoted by the Inflation Reduction Act. These technologies hold particular promise for hard-to-abate sectors such as steel and concrete.

If the exclusion on oil and gas investments were to be raised, a framework would need to be developed to assess firms. One approach could be using lower carbon spend and operational carbon performance improvements (e.g., Scope 1 and 2 intensity) as differentiating climate factors when evaluating investments in oil and gas, or other options would include use of benchmarking data such as that developed by the Climate Action 100.

Theme 4: Technological Progress and its Impact on Sustainability

One perspective was diving deeper into safety in Artificial Intelligence as it has been a large player in the stock market for the past year. Meta and NVIDIA stand out as primary contributors to this growth due to their deep involvement in Generative AI. However, concerns about AI safety persist, with Meta's approach appearing more focused on scalability and growth rather than safety during earnings calls. NVIDIA, while not directly training generative models, prioritizes democratizing AI through partnerships, although questions arise about potential misuse in authoritarian regimes. Microsoft and Amazon, through their partnerships with Generative AI non-profits like OpenAI and Anthropic respectively, are also prominent players. Microsoft's focus on scaling AI lacks clarity on safety, especially considering OpenAI's aggressive approach to artificial general intelligence. Conversely, Amazon demonstrates a greater emphasis on safety in generative models, particularly evident through its collaboration with Anthropic. Companies like Amazon and Nvidia could potentially outperform competitors due to their focus on responsibility in the AI space. The second theme that the principals explored was the connection between Blockchain and sustainability. Blockchain has the potential to accelerate improvements in sustainable supply chains over the next decade through data analytics, data availability, and predictive modeling to optimize supply chains to increase returns, for example by mitigating bottleneck risks and driving efficiency improvements. Blockchain technologies can also enable enhanced sustainability in supply chains through enhanced transparency, notably by enabling stakeholders to track products through the value

chain which in turn can inform sustainable sourcing. While blockchain provides intriguing opportunities, investments in blockchain technologies must also be pursued cautiously to manage upfront implementation costs and evolving data privacy concerns and regulations, in addition to evaluating energy usage needs for blockchain technologies.

Appendix: Thought Leadership Pieces in Full

Section 1 – Reflections on investing for impact

1.1 What we talk about when we talk about Impact in public equities investing How can we measure and drive impact by investing in public markets?

Keshav Ramaswami

I have spent most of my career working on social impact – implementing changes on the ground, measuring impact, innovating and driving systems change initiatives. When I came to be part of the team that manages the Sustainable Investment Fund, I began with a rosy picture of bringing more capital to problems that really need attention. A year on, I am left with several reflections on what investing for impact really means in the context of public equities.

The way the social impact space thinks of impact is typically through a theory of change, where you want to have an intentional and forward looking view of what impact looks like. You articulate the problem you are trying to solve (and the causative factors). You articulate your proposed solution or intervention, and map the pathways through which this will change the world. You can then measure these changes using a mental model that tracks the changes in inputs, performance of processes, the outputs that follow, and the outcomes that are realized by people and systems. You typically report on 'key indicators' that you monitor. But to really know if you've had an impact, you would typically run an evaluation, and measure changes against a baseline measurement, and adjust away changes that might have already occurred in the natural forward march of the world. Tesla's master plan can be seen as an effort in this direction.

But a reason I was drawn to the for profit world was because of the gaps within the social impact space – where sometimes there isn't enough of a risk-taking appetite to innovate against state and market failure, and not enough of a focus on important aspects of continuity like a sustainable business model. These are made possible by the profit-motive. So, with the focus on the profit incentive: What is the theory of change for investing through public equities?

What kind of positive impact can a public company have?

One might conceive of two generalized pathways through which public equity investing leads to innovation for impact:

1. Offer risk-capital to scale innovation. The funding of early stage breakthroughs and business models is likely to happen through venture capital investing, where appropriate. But through IPOs, public markets can provide capital at an unmatched scale.
2. Offer pricing signals to indicate when a company is headed in the right direction. Markets encapsulate information at an alarming pace through the price. This serves as an effective signal to business owners and operators, who seek to maximize the value of the firm. By

signaling the right direction, markets are expected to provide a logic of allowing well run businesses to survive and poorly run ones to perish.

For a public company: Impact is disruption – changing systems and the way we live, at scale, that shapes the path forward. Companies that, to my mind, have had an impact have disrupted the way things were done before – Microsoft's democratization of personal computing, Tesla's development of standards for charging and popularization of electric vehicles, or Reliance Jio's offering of low cost data that expands access to the internet in India exponentially.

What options do investors have in evaluating and driving impact? What would an ideal future look like?

Investors mainly have an impact through shareholder activism. We have seen and continue to see a wave of interest in divestments – especially focussed on tobacco, arms and fossil fuels. Evidence for the effectiveness of divestment strategies is weak at best – you need to divest at an alarming pace to change the cost of capital for a firm, and the space is likely to be filled by less accountable private investors.

Shareholder activism then becomes an effective tool, but there are challenges. Often shareholder participation is low, voting systems weren't designed well – where 'no' votes were often missing from ballots. You have several investor collaboratives mobilizing shareholder proposals – As you Sow, and Ceres. And they face several lawsuits. While activism is again an important signal, you constantly run up against a line you cannot cross – where investors cannot be telling management how to run their business. For a shareholder proposal to be effective (reasonable, and adopted for impact) it typically focuses on enhanced reporting.

The final set of solutions is better regulation around transparency. If investors could evaluate the impact that businesses have, robust data informing their investment decisions could drive accountability. While regulation is strong and clear around issues of human rights and environmental pollution, the space around climate-related disclosures has been rapidly evolving.

Does ESG give us a way to measure impact?

ESG was supposed to be a way for us to measure the impact that businesses have on society. Using it in practice though – I see that it was a way to "do less harm" than really measuring positive impacts. In practice, amidst the pushback against ESG, it has become a way of encapsulating business risk in general. For instance, the ESG scores of technology companies are heavily weighted on data privacy and employee retention. In the absence of clear governmental regulation in the US, companies chose to disclose their climate goals and progress in their own way. ESG ratings firms (Ethos, MSCI, and others) developed their own overlapping but inconsistent frameworks, and institutional investors supplement these frameworks with their own metrics.

Moving toward a common vocabulary

Standardization of metrics has been a key theme to allow for comparability and data integrity. While standardization has some drawbacks – standards that are too rigorous might reduce autonomy in how a firm chooses to disclose its impact, and incentivize the measures over the immeasurable – the consensus is towards interoperable standards that make it easier for businesses, investors and regulators. Several bodies have filled the space to try and establish common standards – the Science Based Targets Initiative, and the Task Force for Climate-related Financial Disclosure (under the IFRS). The SEC, after a long wait, released their rules for climate related financial disclosures, ominously called "The Final Rule" only to pause its implementation in the face of legal opposition.

SECs new climate disclosure framework — "The Final Rule" that is not so final

In March 2024, the SEC released "The Enhancement and Standardization of Climate-Related Disclosures for Investors" to standardize this process. It asks larger companies to disclose:

- **Emissions:** Scope 1 and scope 2 emissions, no need to disclose scope 3 emissions
- **Climate related financial risks & risk management:** Qualitatively severe weather events and natural disruptions. Quantitatively, disclose costs associated with the two.
- **Corporate governance disclosure:** Disclose board and governance responsibilities around climate related goals
- **Climate Policy-Specific Disclosures.** Disclose climate-related targets and goals, scenario analyses, internal carbon pricing and transition plans, to the extent that these tools are used
- **Transition risks:** Disclose scenarios used for planning, materiality of transition & transition risks

However, these rules do not go far enough to really be impactful. All disclosures are conditioned on materiality. It is unclear who decides materiality, and using what criteria. Further, it excludes private companies as they are beyond the mandate of the SEC. Notable in its absence is the requirement for third party verification – so currently companies can make claims they like without a way of really checking them. Lastly, reporting of Scope 3 emissions is not mandated. These emissions are typically the largest in Co2e terms. While these can be hard to measure, and the discounting of double counted emissions is challenging, excluding Scope 3 emissions can lead to an off-shoring of emissions unless something similar to the EUs Carbon Border Adjustment Mechanism, a tax for off-shored emissions, is implemented

The catch is that these rules, even if they fall short, are highly contested and have faced a slew of legal challenges from across the political spectrum. The SEC has been accused of overstepping statutory authority. So the rule stands paused till legal resolutions are achieved.

How might we begin to think of measuring 'positive impact'? *Looking to IRIS+ and the impact measurement project*

To measure positive impact, we could glean insights from the impact investing world. A promising way of moving towards measuring impact is the IRIS+ set of core metrics put together

by the Impact Management Project and advocated for by the Global Impact Investing Network (GIIN). The IRIS+ puts together a set of ‘core indicators’ to measure impact across 18 impact areas. These metrics come from a high-level definition of impact – articulating who is impacted specifically, what metric we seek impact on, how much the metric changes (in additional terms), in what time frame, and the risks to impact. The chosen metrics have some degree of evidence to show that they are linked to positive changes, and are designed to be standardized — in their definitions and measurement practices, to allow for comparability.

In an ideal world, as investors seek to use their money for positive change in addition to financial return, impact-focussed companies would: articulate the impact areas relevant to their companies, choose appropriate metrics and set forward-looking targets, measure and report on these routinely to provide a view of comparable impact in each domain. There are challenges though. Most companies would not be considered ‘impact firms’ and these metrics may not be appropriate to the nature of day-to-day business, and would need the system to be re-designed from the perspective of public enterprises. If companies begin to adopt these metrics en masse, it’s likely to be a second wave of “greenwashing” where investors find it harder to make sense of meaningful change. Moreover, the metrics themselves do not offer a perfect solution in themselves. The measurement process is sacrosanct for verifiability – typically using independent third-party assessors who can measure changes across time in a context-appropriate manner. Including third party verification for complex and diverse businesses would not only be expensive, business leaders may see it as yet another distraction from the core logic of a for-profit enterprise – to increase shareholder value.

References

1. The Enhancement and Standardization of Climate-Related Disclosures for Investors, SEC, https://www.sec.gov/files/rules/final/2024/33-11275.pdf
2. “SEC Issues Long-Awaited Climate-Related Disclosure Rule”, Debevoise & Plimpton, https://www.debevoise.com/insights/publications/2024/03/sec-issues-long-awaited-climate-change-disclosure#:~:text=On%20March%206%2C%202024%2C%20the%20U.S.%20Securities%20and%20Exchange%20Commission,extensive%20climate%2Drelated%20information%20in
3. IRIS + System Standards, Global Impact Investing Network, https://iris.thegiin.org/standards/
4. “Businesses face more and more pressure from investors to act on climate change”, NPR, https://www.npr.org/2023/04/09/1168446621/businesses-face-more-and-more-pressure-from-investors-to-act-on-climate-change
5. "SEC pauses climate disclosure rule, cites litigation ‘complexities’”, ClimateWire, https://subscriber.politicopro.com/article/eenews/2024/04/05/sec-pauses-climate-disclosure-rule-cites-litigation-complexities-00150595

1.2 Rethinking Investment Strategies: Towards Thematic Investing and Direct Investments

Juned Kazi

In reviewing our investment strategy and recent pitches, it's become increasingly apparent that our portfolio's structure is somewhat scattered, heavily favoring traditional investment vehicles like Exchange-Traded Funds (ETFs) and mutual funds. This conservative stance has led to a portfolio construction that, while risk-averse, may be overly dependent on broader market movements, potentially at the expense of more targeted growth opportunities. Notably, our investment decisions have displayed a significant emphasis on Environmental, Social, and Governance (ESG) criteria. While ESG considerations are undeniably important, their predominance has, in some instances, overshadowed the potential for investments in groundbreaking innovations that promise to redefine market landscapes. Additionally, our approach seems to be more reactive to current market trends rather than anticipatory of future shifts. This orientation towards the immediate rather than the prospective is a missed opportunity to position ourselves at the forefront of transformative changes. A shift in our investment strategy towards thematic investing will provide us an opportunity to align our portfolio with trends shaping the future.

What is Thematic Investment ?

Thematic investing has become a compelling way for investors to align portfolios with the trends shaping the future. A spectrum of long-term and short-term themes are increasingly influencing which companies lead the way as economies grow and markets evolve. Approaches based on themes may help the team adapt the portfolio to include investments that align with their focused interests or expectations.

There are several categories of thematic investing, which differ in both investor objectives and the philosophies. Here are the 5 different categories along which Fidelity likes to group its investments;

- **Disruption**: The world changes fast and you will notice companies of today might not be the companies of tomorrow. Disruption funds the change in business economics, as the market evolves.
- **Megatrends**: megatrends may include identifying trends that could lead to major transformations over time, and searching for the companies that seem most likely to benefit.
- **Sustainable:** This should be able to group a lot of key trends around cleantech/energy, climate etc. Many different approaches can be bucketed in this area and will require careful examination on what we want to bet on for the future.
- **Differentiated Insights:** These thematic solutions can give investors exposure to targeted ideas and investment selections. For example focusing on stocks of companies based on certain financial metrics or focusing on companies which are founder led etc.

- **Outcome-Oriented:** Outcome-oriented thematic funds are designed to fulfill a specific objective within a portfolio, which may help an investor prepare for long-term market changes and trends. . An outcome-oriented thematic fund could provide additional exposure to market segments and companies that have historically performed well during times of high or rising inflation.

The Call for a Strategic Pivot

The essence of our strategy pivot centers on the integration of thematic investing and direct investments into our portfolio. Thematic investing involves identifying and investing in overarching themes or trends that are expected to drive future growth across industries. These themes often emerge from technological innovations, demographic shifts, environmental changes, and societal transformations. Unlike traditional investment approaches that react to market movements, thematic investing proactively seeks to anticipate and capitalize on future trends.

1. **Diversification Through Direct Investment**: Direct investments in companies leading or benefiting from these themes offer a more focused approach than investing in broad-sector ETFs, allowing for targeted exposure to potential high-growth areas. For instance, the rapid advancements in artificial intelligence (AI) and machine learning (ML) technologies present unique investment opportunities in sectors ranging from healthcare to finance and beyond.
2. **Balancing ESG with Innovation**: Our current ESG-focused strategy, while aligned with responsible investing principles, needs recalibration to ensure it supports rather than overshadows innovative investment opportunities. The integration of ESG considerations should enhance, not limit, our ability to invest in companies and technologies with the potential to drive significant positive change. For example, investing in renewable energy technologies not only aligns with ESG criteria but also positions our portfolio to benefit from the global transition to cleaner energy sources.
3. **From Present to Future-Oriented Investing**: A shift towards thematic investing necessitates a forward-looking perspective, moving beyond current market trends to focus on future possibilities. This involves a more dynamic and speculative analysis, identifying emerging trends that have the potential to redefine industries. Such a shift requires not only an analytical change but also a cultural shift within the investment team towards embracing innovation and speculative foresight.
4. **Enhanced Decision-Making Through Focused Teams**: Concentrating our teams on specific sub-themes or trends within the broader market can significantly enhance our decision-making capabilities. This focused approach allows team members to develop deeper expertise in their respective areas, leading to more informed and nuanced investment decisions. By becoming experts in particular fields, teams can identify potential investments that others might overlook and anticipate shifts within their domains more accurately. This specialization is especially crucial in areas like technology, healthcare, and renewable energy, where rapid innovations can quickly transform the market landscape.

5. **Investing for the Future & Thinking Long Term**: The adoption of thematic investing and direct investments is inherently a long-term strategy. It recognizes that true transformative trends take time to mature and yield returns. This approach requires patience and a vision that extends beyond the next quarter or fiscal year, aiming to capture the full growth potential of emerging trends. By committing to long-term investments in areas with significant future growth prospects, we position ourselves to benefit from the compounding effects of innovations and market evolutions that could define the next decade.

Implementing the Strategy Shift

To operationalize this strategic shift, a multi-faceted approach is required:

- **Research and Analysis Framework**: Develop a robust framework for identifying and evaluating potential investment themes. This involves leveraging both in-house research capabilities and external insights from industry experts and thought leaders. See if we can leverage platforms like Aperio to help generate data based on the themes provided.
- **Portfolio Allocation Guidelines**: Establish clear guidelines for allocating resources to thematic investments, ensuring a balanced approach that considers both potential returns and inherent risks associated with early-stage trends.
- **Continuous Review and Adaptation**: Implement a structured process for the continuous review and adaptation of our investment strategy, allowing for flexibility in response to emerging trends and market shifts.

Conclusion

By reorienting our investment strategy towards thematic investing and direct investments, we stand to not only achieve targeted growth and diversification but also position ourselves on capitalizing on the transformative trends shaping the future. This strategic pivot represents an evolution from a traditionally reactive investment approach to a proactive, forward-looking strategy that seeks to harness the full potential of emerging innovations and market dynamics.

References

1. https://www.blackrock.com/us/individual/insights/thematic-investing
2. https://institutional.fidelity.com/app/proxy/content?literatureURL=/9897007.PDF
3. https://www.visualcapitalist.com/sp/how-to-invest-in-change-a-guide-to-thematic-investing/
4. https://www.msci.com/our-solutions/indexes/thematic-investing

1.3 A call for Energy Pragmatism and the case for Investments in Oil and Gas: Does divesting from oil & gas have a meaningful impact?

Laura Kurt

Larry Fink, the CEO of Blackrock, publishes an annual letter to investors. In 2021, he wrote about the need to incorporate ESG into every facet of investment. In 2024, his letter instead called for a more balanced approach to investing. His latest letter is, at least partially, a response to the rise of Anti-ESG investing. After the rapid rise of ESG investing over the last decade, in the last year we've seen a surge of "Anti-ESG" sentiment and calls for pension funds and other portfolio managers to eschew ESG investing. Anti-ESG sentiments characterize ESG investing as 'woke' and criticize the incorporation of non-financial metrics into financial investments. Larry Fink's 2024 letter advocates for a middle path that he calls 'energy pragmatism,' or an approach that balances energy transition and energy security. In this paper, I will argue that the SIF portfolio should incorporate themes of energy pragmatism and lift the exclusion on oil and gas investments.

Even in the most aggressive decarbonization outlooks put forth by the IEA and others, oil and gas is generally considered to play a substantial role in the energy mix for the next 20 years. As noted in Larry Fink's letter, "Even the most climate conscious...saw that their long-term path to decarbonization will include hydrocarbons, albeit it less of them, for some time to come."

Emissions reductions in oil and gas operations can be achieved quickly and cost-effectively, thus a focus on these emissions and these companies can result in significant reductions in the Near-term. Secondly, oil and gas companies are some of the largest investors in decarbonization. Exxon has committed $20B in lower carbon spend by 2027[3] and Chevron[4] has committed $10B by 2028. To put things into perspective, while direct air capture and technology companies get a lot of air time for their work on climate, Climeworks' last funding round raised only $650M. Additionally, while the large tech companies are also investing significantly in climate, even one of the largest announced investment goals (from Alphabet[5] is only $10B on clean energy investments through 2040. Third, traditional oil and gas companies are looking for ways to leverage their core competencies to accelerate the energy transition and stand up new

---

[3] Exxon Climate Report, 2024: https://corporate.exxonmobil.com/-/media/global/files/advancing-climate-solutions/2024/acs-report-executi
ve-summary.pdf

[4] Chevron Climate Report, 2023: https://www.chevron.com/-/media/chevron/sustainability/documents/climate-change-resilience-report.pdf

[5] Alphabet planned spend: https://sustainability.google/operating-sustainably/net-zero-carbon/#:~:text=Did%20you%20know%3F,-wb_incandescent&text=From%202010%20to%202022%2C%20we,capacity%20of%20approximately%204.2%20GW.

product lines. CCUS plays an important role in any net zero aspiration and hydrogen is seen as a strong enabler for hard-to-abate sectors like steel and concrete. Both technologies need investment and maturation for costs to come down into the realm of economic feasibility, and who better to do this than companies with the accompanying skillsets, cash, investment interest, and significant business development needs? For instance, many oil and gas companies have announced investments into carbon capture and sequestration as well as hydrogen, and recently announced policy enablement should serve as a tailwind for those projects to accelerate investments.

There is also a significant opportunity for shareholder activism. Many of the largest publicly traded oil and gas companies have greenhouse gas reduction targets and new lower-carbon business goals. Shareholder interest can drive continued focus on those targets and continued performance improvements. For example, broad engagement and investment in these companies can serve to raise decarbonization and transition issues as a priority to other boards. There are substantial differences in the carbon performance across oil and gas operators, with the top performers often being an order of magnitude on an emissions/production basis than the worst performers. For the worst performers, near-term action is generally cost-effective and can generate a positive return, and engagement with these companies and boards could drive real emissions reductions in the near term. While regulations are increasingly driving performance improvements in the US and certain other regulated markets, shareholder pressure can help serve to extend reductions beyond what regulations are doing and moreover extend the portfolio of potential reductions to the rest of the globe.

To consider the contrary position, arguments against investing in oil and gas for ESG purposes often focus on the greenhouse gas emissions associated with the products they produce. Indeed, emissions associated with oil and gas are one of the largest if not the largest contributor to global warming and climate change. That being said, as discussed above, almost all forecasts of energy demand for the next 20 years include oil and gas, in part because energy systems are complex and global change takes time. Whether we invest in these companies or not, we will continue to need and use their products for the years to come. It is this author's opinion that if the goal is progress, investment and activism can be accelerants whereas forgoing investment diminishes shareholder pressures that could drive change.
In summary, this author recommends lifting the oil and gas exclusion on the SIF portfolio. The portfolio already invests in suppliers and customers of oil and gas and companies, an extension of the portfolio to also include and address the producers feels logical and justified for the reasons described above. In summary, investing today in oil and gas would take a balanced approach to the energy transition that recognizes the role hydrocarbons will continue to play over the years to come while advancing investments in lower-carbon energy and incentivizing near-term cost-effective reductions. By investing in oil and gas, SIF can play a role in both near-term reductions and investments into alternative energies and broadening exposure to the energy sector. If such an approach were to be adopted and the exclusion of oil and gas companies removed, this author recommends using lower carbon spend and operational carbon

performance improvements (e.g., Scope 1 and 2 intensity) as differentiating climate factors when evaluating investments in oil and gas.

References

1. Larry Fink 2024 Annual Letter:
2. https://www.blackrock.com/us/individual/about-us/larry-fink-annual-chairmans-letter?gad_source
3. =1&gclid=CjwKCAjw5ImwBhBtEiwAFHDZx-22qsYou2VszibidE-kQbMZO2MzaIFdiIEHZW6huX3
4. 19jieVA_-UhoCpVkQAvD_BwE&gclsrc=aw.ds

Section 2 – Evolving Landscape of Climate Disclosures

2.1 **Materiality and Risk in Corporate Climate Reporting**

Courtney Schrier and Meredith Albion

A New Definition of Materiality

“Materiality” is a concept that has existed in the context of financial disclosure for decades. Traditionally, materiality in financial disclosures has focused on information that could significantly impact the financial decisions of investors. This means if an omission or misstatement of financial information wouldn't change an investor's decision, it wouldn't be considered material. The concept of materiality is changing to encompass environmental and social impacts alongside financial ones. This means information about a company's sustainability practices may be considered material if it could influence investor decisions, even if it doesn't directly impact the financial statements. Now there is a double lens of financial and impact materiality. This incorporates, first, financial materiality of sustainability topics using an "outside in" concept and asking “how do sustainability topics affect the performance and prospects of a company?” (represented by SASB/ISSB). In addition, this concept also considers the impact materiality of sustainability topics using an "inside out" concept and asking “how do the company’s activities impact the world around it?” (represented by GRI). In summary, double materiality considers not only the financial impact of their climate risks and related actions but also their broader stakeholder impact. Something that our portfolio strives to take into consideration through our themes and criteria as well.

Legislation mandating ESG reporting has been making headwinds including that in the EU, CA, and the proposed SEC legislation. All of this legislation also redefines materiality to take climate considerations into account, and more, in the case of EU legislation. The definition of materiality differs in various legislation:

- **EU (CSRD; CSDDD TBD):** Explicitly requires companies to consider "double materiality." This means that companies subject to the CSRD must disclose information on the impacts of their business on the environment and society irrespective of the positive or negative effect of such impacts on companies’ financials.
- **CA:** Materiality is defined in relation to the company's specific circumstances and financial performance. Definition is still slightly unclear and will be clarified by CARB.
- **SEC:** Materiality is based on potential impact on a company's business or financials.

There is debate on whether in practice double materiality will significantly impact disclosures, as stakeholder impacts, such as significant environmental or negative community externalities, can often result in financial risks. However, we have seen how the markets do not work perfectly and there is incomplete information that has led to corporate neglect and simultaneous profit. The path to double materiality should help correct this mismatch.

There is the caveat that it is difficult to redefine materiality to include these definitions in a clear cut manner. Much is left to be clarified and will be in the years to come. While the EU approach outlines rigorous documentation required (value chain risk analysis, mapping, and double

materiality process) there is still a lot left unanswered. The European Central Bank (ECB) noted the lack of indicative thresholds to be applied when considering if a sustainability topic rises to the level of being material under either the financial or impact materiality approaches. The European commission has asked EFRAG (the body overseeing new climate reporting) to prioritize the development of such guidance. While this new definition of materiality is nascent, it will still continue to give investors like ourselves information to inform our sustainable investment decisions.

ESG Risk Disclosure

Using new definitions of materiality that take climate and other ESG factors into account, new ESG reporting legislation calls for companies to disclose risks related to climate and society. CA, EU, and the SEC call for various levels of ESG/climate risk disclosure:

	CSRD (EU)	**CSDDD (EU)**	**CA (SB 261)**	**SEC Climate Proposal**
Materiality Focus	Double Materiality	Primarily environmental and human rights impact	Climate related financial impact	Climate Related Financial Impact
Risk Disclosure Requirements	Main sustainability risks, management strategies, metrics and targets	Due diligence processes, identified adverse impacts	Climate related risks, governance, strategy, risk management, metrics & targets	Climate related risks, governance, strategy, risk management, metrics & targets
Preferred Frameworks	Double materiality focus and leans towards TCFD	OECD Guidelines	-Leans towards TCFD (now has become IFRS S1 and S2)	-Encourages TCFD (now has become IFRS S1 and S2)

Understanding the new risk reporting frameworks that these legislation will build on will be important tools for investors who look to minimize investments with ESG related risks. Legislation signals converging around previous TCFD, now IFRS standards for comparability. The Task Force on Climate-related Financial Disclosures (TCFD) was established in 2017, the TCFD is a framework that provides recommendations for companies to disclose climate-related financial risks and opportunities. It's not a mandatory standard, but it's widely adopted by companies globally due to its focus on materiality and investor needs. The TCFD framework focuses on four core areas

1. **Governance:** How the board oversees climate risks.
2. **Strategy:** How climate change impacts business strategy.
3. **Risk Management:** Processes for identifying, assessing, and managing climate risks.
4. **Metrics and Targets:** Metrics used to measure and disclose climate risks and targets for managing them.

TCFD is no longer actively developing new guidance. It officially disbanded in October 2023 after fulfilling its initial mission of promoting climate-related risk disclosure. However, the TCFD recommendations remain highly relevant and widely used. Many companies continue to leverage the TCFD framework for their climate risk disclosures. The International Sustainability Standards Board (ISSB), established in 2021, is now the primary body setting global sustainability reporting standards and recently released IFRS S1 and S2 standards which build upon the TCFD framework:

- **IFRS S1**: Focuses on general requirements for disclosing all material sustainability information. This includes environmental, social, and governance (ESG) factors, with climate risks being a significant component.
- **IFRS S2**: Specifically addresses climate-related disclosures. It builds upon the TCFD framework, providing more detailed guidance than IFRS S1. Similar to TCFD, it requires companies to disclose information on: **1)** Governance around climate risks, **2)** Strategy for managing climate risks and opportunities, **3)** Risk management processes for climate, and **4)** Metrics and targets used to assess and manage climate risks.

As IFRS' new standards build upon TCFD, beginning to understand the structure of a TCFD Report will be crucial for investors as they work to incorporate this analysis into their risk assessment of companies.

Structure of TCFD Reports

TCFD reports are broken into four sections that parallel its four pillars:

- **Governance:** Describes the board's oversight role in climate-related risks and opportunities.
- **Strategy:** Explains how climate change impacts the company's business strategy, considering both long-term and short-term scenarios.
- **Risk Management:**
    - Identifies and describes the different categories of climate-related risks.
    - Outlines the process used to assess the likelihood and potential impact of risks.
- **Metrics and Targets:**
    - Discloses the metrics used to measure climate-related risks and opportunities.
    - Presents any targets the company has set for managing these risks and capitalizing on opportunities.

When it comes to risks, TCFD reports split risks into two categories:

- **Transition Risks:** Risks arising from the shift to a low-carbon economy. These include policy changes (e.g., carbon pricing), technological advancements (e.g., disruption from clean energy technologies), and market changes (e.g., shifting consumer preferences towards sustainable products).
- **Physical Risks:** Risks from the direct and indirect impacts of climate change. These include extreme weather events (e.g., floods, droughts, heatwaves), sea level rise, and resource scarcity (e.g., water). These are further categorized into:
    - **1) Acute Physical Risks:** event-driven and can cause sudden disruptions or damage
    - **2) Chronic Physical Risks:** long-term shifts in climate patterns that can gradually erode a company's profitability or growth potential

While the TCFD doesn't prescribe a specific methodology for risk assessment, it encourages companies to:

- **Identify relevant climate-related risks** considering both transition and physical risks.
- **Assess the likelihood** of each risk occurring within a defined timeframe (short, medium, long-term).
- **Evaluate the potential impact** of each risk on the company's financial performance, strategy, and operations.
- **Consider different climate scenarios** to understand the potential range of impacts under varying levels of climate change.

Further, the TCFD emphasizes the importance of integrating climate-related risks into existing risk management processes. This may involve:

- **Developing strategies** to mitigate or adapt to identified risks.
- **Setting internal controls** to manage climate risks effectively.
- **Monitoring and updating** risk assessments regularly as circumstances evolve.
- **Disclosing** the company's approach to managing climate-related risks in the TCFD report.

Investors can leverage TCFD reports to see what climate related risks may impact companies in the short, medium, and long-term, as well as, identify if the company has a sufficient risk management strategy and is actively implementing risk mitigation initiatives.

Incorporating TCFD recommendations into an active portfolio management investment approach

- Ensure all fund principals understand the TCFD framework, and host an educational session focusing on the four thematic areas: governance, strategy, risk management, and metrics/targets.
- Increase the fund's focus on governance, as it is imperative to understand how companies' management and board of directors are addressing climate-related risks and opportunities. Currently, governance is focused on the least of all sustainability-related factors. Press releases and notes to financial statements should be thoroughly evaluated to understand management's tone and future plans for sustainability.
- Conduct a scenario analysis on all current portfolio holdings, assessing the impact of various climate scenarios (i.e. a 1.5 degree C average increase in temperature by 2050) on our portfolio holdings. This can allow SIF to identify holdings that are more resilient to climate-related risks. More specifically, climate scenarios should be evaluated as follows for a few select industries in which SIF has active equity holdings:
    - **Multifamily REITs**: Natural disasters could have a devastating impact on properties and construction in coastal areas and beyond; the fund should evaluate profits in best- and worst-case scenarios ranging from mild annual weather to extreme weather events. It can also present opportunities for multi-family REITs to increase focus on storm-resistant building materials and provide more resilient residential communities in the wake of climate change
    - **Semiconductors**: Climate-related risks could affect semiconductor supply chains, including manufacturing facilities, suppliers and transportation networks. This could

lead to production delays and a shortage of critical components. Conversely, climate-related challenges could present opportunities for semiconductor companies to innovate and develop solutions for renewable energy, environmental monitoring and more sustainable transportation
    - **Food and Agriculture**: Climate-related risks could affect supply chains and delay production. It is important to understand the initiatives the company has in place such as diversifying its supply chain and working with suppliers to implement regenerative agriculture practices that will make their farms more resilient
- Implement continuous risk management, assigning 2-3 current holdings to each fund principal, and evaluate climate-related risks and opportunities of each active holding in the portfolio through the lens of TCFD disclosures. Implement an assessment of how these factors might impact financial performance, market positioning, and longer-term sustainability of operations

References

1. Recommendations | Task Force on Climate-Related Financial Disclosures (fsb-tcfd.org)
2. ifrs-s2-comparison-tcfd-july2023.pdf
3. What is Single Materiality and Double Materiality? - Manifest Climate
4. Coming to Grips with Corporate Climate Risk | BCG
5. TCFD_Framework Report (thehersheycompany.com)
6. 2021-tcfd-report.pdf (nestle.com)
7. TreeHouse_Foods_TCFD_2023.pdf (treehousefoods.com)
8. https://earth.org/semiconductors/
9. The Corporate Sustainability Due Diligence Directive (CSDD) (greenly.earth)
10. Companies need to integrate climate reporting across functions to comply with California's new law - Thomson Reuters Institute
11. Provisional Agreement on the EU's Corporate Sustainability Due Diligence Directive (CSDDD): Key Elements of the Deal | Inside Energy & Environment (insideenergyandenvironment.com)
12. Comparing the SEC Climate Rules to California, EU and ISSB Disclosure Frameworks // Cooley // Global Law Firm
13. ESG regulation gives materiality a bigger stake | EY - US
14. Heads Up — Comprehensive Analysis of the SEC's Landmark Climate Disclosure Rule (March 15, 2024) | DART – Deloitte Accounting Research Tool

Section 3 – Sectoral Perspectives

3.1 **Safety and Generative AI**

Austin Schoff

Generative AI has been the biggest driver of the US markets since OpenAI launched GPT-3 and ChatGPT in Fall 2022. The S&P 500 was up ~20% in 2023; however, its returns were driven by the magnificent seven (AAPL, AMZN, GOOGL, META, MSFT, NVDA, TSLA).

Meta and NVIDIA were the biggest drivers of this return due to their stronger ties to Generative AI than their peers. But how are they tracking AI safety? Is this important to the companies? Furthermore, how should the sustainability of AI be evaluated? In this paper, we will evaluate four of the magnificent seven's ties to Generative AI and how they possibly view safety.

Let's first start with Meta, as they have an open-source large language model (LLM) called Llama. In their transcript from their most recent earnings call, the word safety is mentioned once. However, safety is only used in the context of having an open-source Generative AI model. As such, this feels more like a cop-out to mistakenly leaking their model to the public as opposed to a commitment to safely using their generative models. On the other hand, scalability

and growth were mentioned no fewer than 27 unique times. During the question-and-answer session, the majority of analysts focused on the dividend and not on the potential for Llama to output and spread false data as Facebook did during the 2016 election. It is clear that the sell-side does not value the safety proposition of Generative AI failures at Meta.[6]

NVIDIA[7] is in a slightly different position than the other companies mentioned here because they are not actively training their own generative model; rather, they are focusing on building infrastructure that allows for cleaner and faster run-times for models. In their investor presentation slide deck, one of the first items mentioned is their desire to partner with larger pharmaceutical companies like Amgen, auto arms like Xiaomi EV, and EM communications companies like Singtel show NVIDIA's commitment to expanding AI to everyone. It is anyone's guess whether these partnerships will come to fruition (I would be willing to bet we will never see a Xiaomi EV in the US or Europe), but the clear, stated focus for NVIDIA is to make sure that AI can be used democratically. I think this can be argued both ways; it is a huge benefit for the world to have access to systems that can run high-powered models, but it is also incredibly dangerous for companies with strong ties to authoritarian regimes to access the tools that can dominate and subjugate their citizens. My personal view is that these governments would do this without NVIDIA – as such, if a government like China is using an NVIDIA GPU to build a model that prevents its citizens from free expression, NVIDIA should have the ability to shut it down and share the information forward.

Finally, let's look at two companies with strong partnerships with Generative AI non-profits: Microsoft (OpenAI) and Amazon (Anthropic). Microsoft CEO Sadya Natella mentioned that Microsoft has "moved from talking about AI to applying AI at scale. By infusing AI across every layer of our tech stack, we're winning new customers and helping drive new benefits and productivity gains across every sector."[8] Not mentioned in this scaling is how Microsoft plans to do so safely. Furthermore, Microsoft's partnership with OpenAI deserves extra scrutiny. OpenAI's plan is to build artificial general intelligence at any cost – this means moving fast and breaking things. Fortunately, Microsoft does not have too many products that if broken would lead to disaster (Microsoft Office and Github are not safety critical systems). However, if Microsoft were to push towards a safety critical system such as a news source or self-driving car, I would be very worried about their approach. Amazon mentioned in their earnings call that they are mostly seeing Generative AI benefits in their advertising team and AWS operation with side benefits in healthcare partnerships.[9] One of their newer products is a system that will do inspections of their vans to preemptively capture defects in the vans before a human could see the damage. Amazon's chief AI partner, Anthropic, is stated to be focusing on safety in

---

[6] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://s21.q4cdn.com/399680738/files/doc_financials/2023/q4/META-Q4-2023-Earnings-Call-Transcript.pdf

[7] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://s201.q4cdn.com/141608511/files/doc_financials/2024/q4/NVDA-F4Q24-Quarterly-Presentation-FINAL.pdf

[8] https://www.microsoft.com/en-us/investor/earnings/fy-2024-q2/press-release-webcast

[9] https://ir.aboutamazon.com/news-release/news-release-details/2024/Amazon.com-Announces-Fourth-Quarter-Results/default.aspx

generative models. As such, it seems clear that Amazon is more concerned with the impact of their systems compared to Microsoft.

Based on these four companies, I think we can rank NVIDIA and Amazon ahead of Microsoft and Meta in terms of responsible AI usage. I would expect the former two companies to outperform the latter two over the next five years. As we have seen with Boeing, when a crucial system is not fully checked for safety, it will fail both the shareholders and stakeholders. It remains to be seen how the Generative AI race plays out; I feel confident that Amazon and NVIDIA will be two of the most responsible players.

3.2 **Role of IT & Blockchain in Sustainable Supply Chains**

Bivek Adhikari

Role of Information Technology to improve sustainable supply chains in the next 10 years? How can blockchain help in developing certified and sustainable supply chains?

We are now witnessing the advent of the Fourth Industrial Revolution. Well, what exactly is the Fourth Industrial Revolution? Profound technological changes are happening in the world today across Physical (Autonomous Vehicles), digital (IoT, AI), and biological domains. There's considerable excitement and worry about the disruption that will happen because of these changes. Companies that adapt will survive and those don't might become obsolete. Let us define what IT, IoT, IIoT, and Blockchain Technologies are and how they can be used to improve Sustainability in Supply Chains.

Per Google - IT encompasses the infrastructure, hardware, software, and networks that enable the processing, storage, and transmission of data.
IoT extends this infrastructure by adding physical devices embedded with sensors, actuators, and connectivity capabilities. These devices are often referred to as "smart" devices and can include anything from smartphones and wearables to industrial machinery and environmental sensors.

IIoT is Industrial IoT. It involves connecting Industrial Equipment, machinery, sensors, and devices to the internet and leveraging data analytics and automation to improve operational efficiency, productivity, and safety in industrial settings.

Blockchain is a distributed digital ledger that enables secure and transparent transactions between parties without intermediaries. The technology is built on a network of nodes that validate and store data securely and tamper-proof, making it ideal for managing and sharing sensitive information.

Blockchain technology has recently gained significant attention and hype as a disruptive technology. Its potential benefits have stimulated organizations to consider adopting this technology. Several promising benefits have been posited including cost-savings, enhanced traceability-transparency, and sustainability improvement (Kshetri, 2018).

Blockchain technology's characteristics such as reliability, traceability, data immutability and smart contracts are giving rise to trustless environments with less need for intermediaries (Iansiti and Lakhani, 2017). There are many blockchain use applications, one of the foremost is supply chain sustainability (Saberi et al., 2019b).
Digitization is transforming the supply chain; specifically, the food supply chain and consumer are more focused on environmental and socially sustainable products (Kittipanya- ngam and Tan, 2019). As a result, traceability, sustainability, and safety have become the core issues (Queiroz and Fosso Wamba, 2019; Wang Y.et al., 2019b). Blockchain technology is regarded as a disruptive and innovative technology and is the primary tool in the industry 4.0 (Ramadurai and Bhatia, 2019; Thylin and Duarte, 2019).

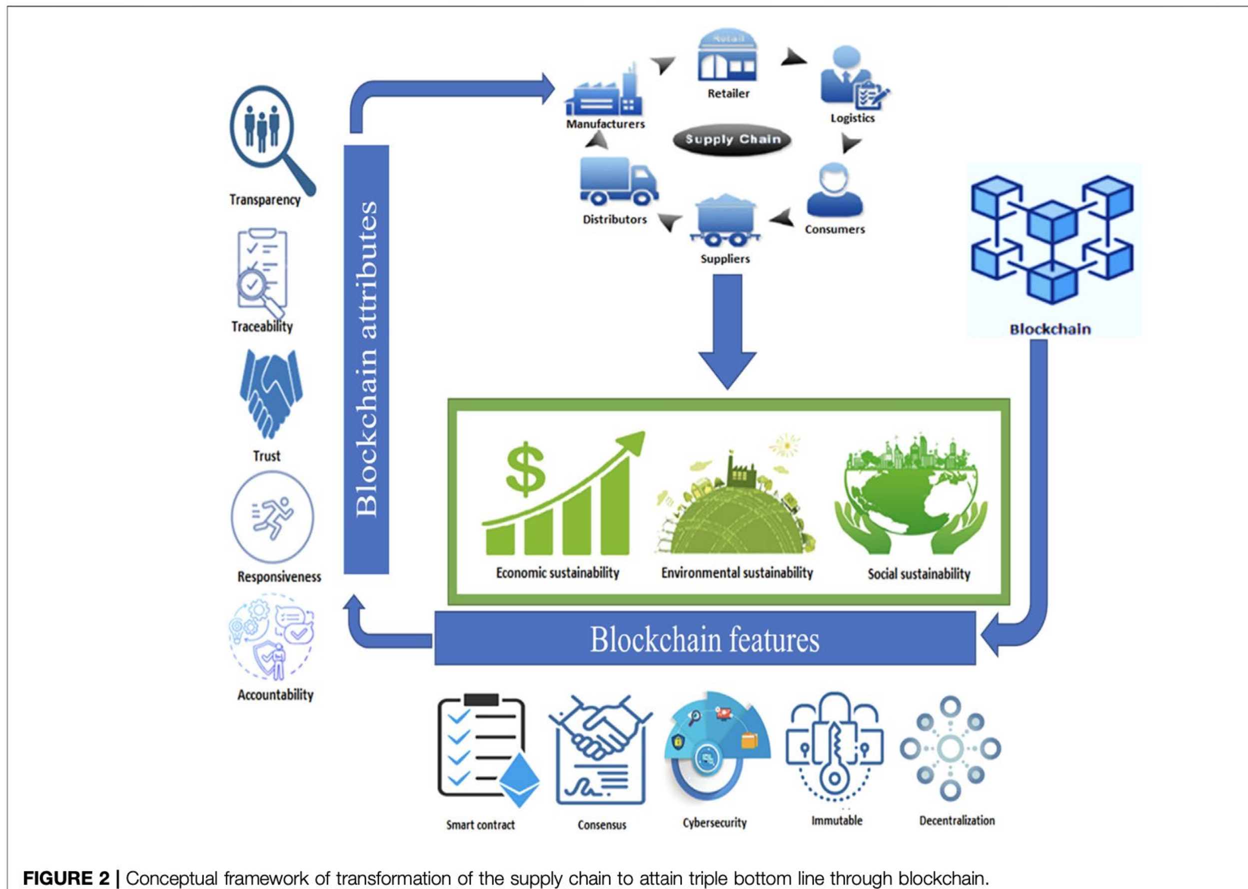


FIGURE 2 | Conceptual framework of transformation of the supply chain to attain triple bottom line through blockchain.

Information technology (IT) will play a crucial role in improving sustainable supply chains over the next decade in several ways:

1. Data Analytics and Predictive Modeling: IT systems can leverage big data analytics and predictive modeling to optimize supply chain operations. By analyzing data from various sources such as sensors, IoT devices, and transaction records, companies can identify inefficiencies, reduce waste, and make more sustainable decisions.
2. Transparency and Traceability: IT solutions, including blockchain technology, can enhance transparency and traceability across the supply chain. This allows stakeholders to track products from raw material sourcing to the end consumer, ensuring adherence to sustainability standards and enabling informed decision-making.
3. Collaboration and Communication: IT platforms facilitate collaboration and communication among supply chain partners, enabling real-time information sharing and coordination. Enhanced communication can lead to better planning, reduced lead times, and improved resource utilization, ultimately contributing to sustainability goals.
4. Supply Chain Visibility: IT tools such as RFID, GPS, and IoT devices enable real-time visibility into the movement and status of goods throughout the supply chain. Increased visibility helps identify bottlenecks, mitigate risks, and optimize transportation routes, leading to reduced emissions and environmental impact.
5. Automation and Robotics: IT advancements in automation and robotics can streamline supply chain processes, leading to increased efficiency and reduced resource consumption.

Automation technologies can optimize warehouse operations, inventory management, and order fulfillment while minimizing waste and energy usage.
Blockchain technology can help develop certified and sustainable supply chains by providing:
1. Immutable Recordkeeping: Blockchain creates an immutable ledger of transactions, ensuring data integrity and transparency. This feature can be leveraged to record every step of the supply chain, including sourcing, manufacturing, transportation, and distribution, thereby verifying the authenticity and sustainability of products.
2. Smart Contracts: Smart contracts, self-executing contracts with predefined rules, can automate compliance with sustainability standards. For example, smart contracts can enforce agreements between suppliers and manufacturers regarding fair labor practices, environmental regulations, and responsible sourcing of materials.
3. Certification and Authentication: Blockchain can be used to store digital certificates and documentation related to sustainability certifications. By linking these certificates to product identifiers on the blockchain, consumers and stakeholders can verify the authenticity and legitimacy of sustainable claims.
4. Supply Chain Traceability: Blockchain enables end-to-end traceability by recording each transaction in a transparent and tamper-proof manner. This allows stakeholders to trace the journey of products from origin to destination, ensuring compliance with sustainability standards and ethical practices.
Overall, Information Technology, including blockchain, will play a pivotal role in shaping the future of sustainable supply chains by improving transparency, traceability, efficiency, and collaboration across the entire supply chain ecosystem.

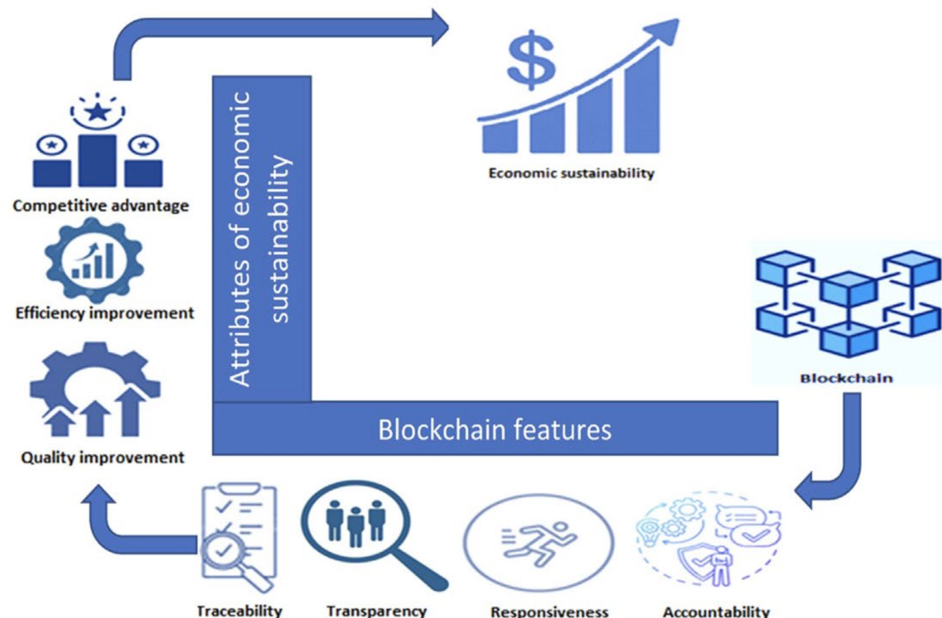


FIGURE 3 | Conceptual framework of economic sustainability of the supply chain through blockchain.

Certainly! There have been numerous research efforts focusing on the role of Information Technology, including blockchain, in improving sustainable supply chains. Here are a few notable examples:

1. Blockchain for Supply Chain Transparency and Traceability:
    a. Research by Tapscott and Tapscott (2017) explores how blockchain technology can enhance transparency and traceability in supply chains, particularly in industries such as food and pharmaceuticals.
2. Blockchain-Based Supply Chain Management Systems:
    a. A study by Li, Rong, and Leung (2017) investigates the potential of blockchain-based supply chain management systems to improve trust, transparency, and efficiency in global supply chains.

3. Smart Contracts for Sustainable Supply Chains:
    a. Research by Beck et al. (2018) explores the application of smart contracts in sustainable supply chains, focusing on how self-executing contracts can automate compliance with environmental and social standards.

4. Blockchain Applications in Sustainable Fashion Supply Chains:
    a. A study by Zheng et al. (2019) examines the use of blockchain technology to enhance sustainability in the fashion industry's supply chains, addressing issues such as transparency, ethical sourcing, and counterfeit prevention.

5. IoT and Blockchain Integration for Sustainable Supply Chains:
    a. Research by Xu et al. (2020) investigates the integration of Internet of Things (IoT) devices and blockchain technology to improve sustainability in supply chains, emphasizing the role of real-time data monitoring and verification.

6. Supply Chain Finance and Blockchain:
    a. Studies such as those by Pagoropoulos et al. (2019) explore the potential of blockchain technology to enhance supply chain finance, facilitating sustainable financing solutions and promoting responsible business practices.
7. Blockchain and Circular Economy:
    a. Research efforts, including those by Ivanov (2019), examine how blockchain technology can support the transition to a circular economy by enabling transparent and efficient resource management, recycling, and product lifecycle tracking.

These are just a few examples of the extensive research being conducted on the intersection of Information Technology, blockchain, and sustainable supply chains. Many academic journals, conferences, and research institutions continue to publish studies on this topic, reflecting the growing interest and importance of leveraging technology for sustainable development in supply chain management.

New technology has both advantages and disadvantages. A major sustainability concern of blockchain technology is in its energy consumption. High computational power required for important “proof-of-work” consensus systems consumes many hundreds of megawatts of energy (Fairley, 2017). High energy consumption also means higher carbon emissions. Decentralized ledgers also need higher computational power and resources for maintaining the security of data and entries that are duplicated, which ultimately lead to greater energy consumption.[8] These are only sustainability downsides, but as we shall see in our study there are many other barriers that exist for the adoption of this technology from a SSCM perspective. In addition, switching to a new disruptive technology such as blockchain involves disruptive

changes for a company within the context of technical and non-technical practices including internal and external ones (Kurpjuweit et al., 2019; Rugeviciute and Mehrpouya, 2019), that can be difficult to justify.

In 1996, a scandal surfaced that got popular just because of child labor in NIKE's manufacturing factories in Asia (Connor, 2001). Another example where harsh work conditions caused Apple manufacturer factory known as "Foxconn suicide scandal" happened recently in 2010 (Moore, 2012). In the health industry, anti-cancer or other medicines are provided at a very high cost and this high cost and delay in delivery give chance to anti-national people to promote black marketing (Mackey and Nayyar, 2017). Customers ought to know about the capacity to recognize the historical backdrop of an item, how to utilize it, and where to return it and check all types of information available on Block Chain. Block Chain helps to put transparency, security, traceability and control cost (Banerjee, 2018) from the manufacturer to the end-users via retailer/ supplier. Customers and end-users are unaware of the procedures, flow of goods at the production floor and hazard, misery involved in manufacturing, transportation, handling, etc. The flow of information helps customers to gain and regain the trust (Anjum et al., 2017). Block Chain must guarantee the information to be truthful, valid and authenticated. In the case of food production, sustainability standards and certifications provide support to organic food and better food life cycle (Elder et al., 2013). These types of accidents lead to the birth of new technology in manufacturing and supply systems. Usage of Block Chain has the advantages of security, irreversibility, distributed, transparency (Chiaroni et al., 2019), and accuracy (Iansiti and Lakhani, 2017). All these types of requirements will lead to the integration of Block Chain with Supply Chain Management.

Section 4 – Fund Management

4.1 Changes to the Pitch Process

Ak Ved, Arsal Khanani, Jack Shen

For our thought leadership piece, we wanted to focus on improving the pitch process as we felt that it was the most valuable and critical aspect of this class and with certain changes, we could realize significant returns. We identified three key areas where adjustments can enhance the efficacy and integrity of our decision-making processes. Through these proposed changes, we aim to provide a structured framework for pitches, promote a balanced consideration of investment opportunities, and foster transparent feedback mechanisms. By embracing these adjustments, we endeavor to elevate the quality of discussions, empower principals with comprehensive insights, and ultimately, optimize our investment outcomes.

Change 1: We've devised a template (accessible via the link below) that consolidates crucial information for all pitches, with a focus on managed equities and passive equities, as they are the most commonly presented. While adherence to the template's design is optional, its content should be incorporated into all pitches.

SIF Pitch Deck Template

We anticipate two significant benefits from this initiative. Firstly, it will alleviate the initial challenges faced by new principals, particularly those with limited finance experience, by providing a structured starting point for their pitches. Secondly, by ensuring consistency across pitches, we aim to address discrepancies observed in financial metrics, ESG considerations, and comparative analyses. We believe this template will empower principals to make more informed investment decisions.

Change 2: Our second proposal aims to diversify the perspectives presented during pitches. Typically, presentations emphasize the positive aspects of an investment, understandably aligning with our objective of identifying lucrative opportunities. However, this predisposition towards optimism may inadvertently lead to confirmation bias, as presenters may overlook potential drawbacks. To counter this, we suggest a collaborative approach, wherein the presenter partners with a classmate tasked with highlighting reasons why the equity may not be a favorable investment. By presenting both sides, we ensure principals have access to a comprehensive spectrum of information, facilitating more balanced investment decisions.

Change 3: Each student should have a clear understanding of the pitch before researching and presenting. We recommend that one of the classes be dedicated to deep diving into the pitch process, expectations and examples. In addition to that, it would be useful to have a guest speaker from a relevant background (professor or someone from an existing fund) cover some of the best practices of making an investment pitch specifically from an ESG perspective.

Change 4: Our final proposal pertains to enhancing the voting process. Currently, the lack of contextual feedback accompanying votes hinders the presenter's ability to glean insights and refine subsequent pitches. We propose revamping the voting criteria to include an open text field, mandating voters to articulate their rationale for voting "yes," "no," or "I could live with it." To maintain anonymity, the results can be summarized using ChatGPT. This feedback

mechanism not only benefits presenters by offering constructive criticism but also serves as a valuable resource for understanding the class's investment priorities, which can evolve over time.

These proposed changes aim to foster a more informed and equitable decision-making process within our investment community.

Appendix: Full Investment Policy Statement

Investment Policy Statement

1. **Introduction:** The Haas Sustainable Investment Fund (SIF, or "the Fund"), launched as HSRIF in 2008, is the first and largest student-led sustainable investment fund at a leading business school. The Fund is structured as a separate account managed through the University of California Berkeley Foundation (UCBF), a 501(c)(3) non-profit foundation whose primary responsibility is the management of the long-term endowment funds in support of the university. As part of a philanthropic institution, the Fund manages its assets for maximum public benefit and in compliance with fiduciary duties of care and loyalty. This Investment Policy Statement (IPS) aims to create a framework within which the Student Principals will invest and manage the Fund for the benefit of current and future students at the University of California Berkeley, Haas School of Business.

2. **Purpose:** The Fund's purpose is fourfold:
    a. Provide an applied learning opportunity for Student Principals
    b. Provide an annual distribution to the Sustainable and Impact Finance Initiative at the Haas School of Business, University of California, Berkeley
    c. Serve as a research platform for SRI, ESG, and sustainable investing
    d. Outperform the relevant benchmarks on a risk-adjusted basis

3. **Values Statement:** The Fund believes that investing to protect the environment and elevate human well-being can be done without sacrificing risk-adjusted financial returns and is critical to creating a sustainable and equitable future for all. More specifically, the Fund believes that to ignore environmental, social, and governance issues is to ignore systemic risks that will impact its investments' long-term stability and cash flows. The Fund will seek to address and reduce these systemic risks through its investment portfolio.

    When matched with strong market fundamentals, operational excellence, and financial strength, companies focusing on social and environmental factors will be best positioned to benefit from long-term sustainability trends and weather the risks brought on by a changing world. Given the rapid growth of sustainable investing over recent decades, many companies with high ESG ratings may need to be available at attractive valuations. As a result, the Fund will look to identify investment opportunities that present as yet unrealized potential for strong ESG performance at attractive prices, including companies transitioning (or well-positioned to transition) to improved practices. The Fund will also look for opportunities to engage with management and/or use proxy voting to help encourage productive changes in company practices.

    The Fund is also conscious of its location in California and, more specifically, the University of California. Remembering that the University of California was founded with a mission of public service to the state, the Principals of the Fund plan to carry this tradition forward by keeping in mind the ecological and socioeconomic challenges most relevant to California as we seek to create positive change through our investments.

    Currently, the Fund is focused on aligning our values with the University of California's Sustainable and Impact Finance (SAIF) to ensure consistency between Principal cohorts. The defining goals of SAIF are:
    - To build a more equitable, inclusive and sustainable society.
    - To train leaders who can work across traditional boundaries between nonprofit organizations, for-profit enterprises and the public sector to achieve social impact.
    - To promote social entrepreneurs to create new solutions to social and environmental challenges.

    The following key challenges, where the Fund hopes to use its investment capital to Benefit Stakeholders and Contribute to Solutions:

    - **Climate Change Mitigation and Adaptation:** In alignment with the Paris Climate Agreement, the Fund will seek to contribute to the goal of limiting global warming by urgently reducing and sequestering any

carbon and other greenhouse gasses emitted into the atmosphere to avoid the massive disruption to the fabric of our society that will result from unchecked global warming.
- **Clean Water and Sanitation:** Because climate change is driving increased levels of drought globally, as well as here in our home state of California, the Fund will seek to advance sustainable management of water and sanitation for all, in order to reduce disease, mitigate the impact of drought, and ensure that everyone has access to clean and safe drinking water.
- **Human Rights Protection and Responsible Consumption & Production:** Understanding that businesses play a key role in our social structure, the Fund will seek to promote ethical business practices in order to avoid the serious human and financial costs of human rights abuses by companies.
- **Gender and Racial Equity:** Recognizing that systemic inequities have contributed to the marginalization of certain demographic groups, the Fund will seek to develop a better, more equitable society that recognizes the unique and valuable contributions of all individuals, regardless of their background and identity.

In addition, the Fund will seek to at the very least Avoid Harm in all other areas. In some cases, this may involve excluding certain industries or sectors. Please see Appendix A for a more detailed list of what is currently excluded.

4. **Fiduciary Duty:** The fiduciary duty of Student Principals, which is both legal and moral, encompasses three central obligations:
   a. Duty of care to make decisions in good faith with due diligence and reasonable prudence
   b. Duty to act in the best interest of the fund and stakeholders, avoiding any and all actions that could be interpreted as a conflict of interest
   c. Duty of responsibility to uphold the mission of UC Berkeley to serve the public benefit

5. **Objective:** The purpose of the Fund is to deliver strong financial returns and positive social impact. The fund aims to preserve the long-term, real purchasing power of assets while providing a relatively predictable and growing stream of annual distributions to SAIF.

6. **Time Horizon:** Investment decisions will be made with a five-year time horizon. Even though the Fund is a long-term pool of capital and may take advantage of this horizon to withstand year-to-year volatility.

   Counterbalancing this factor, however, is the inherent annual turnover of Principals given the length of the MBA and other graduate and professional programs at the University.

7. **Asset Allocation Targets & Allowable Ranges:**

2023-24 Allocation:

Asset Class	Target	Range
Equity 1. *Third Party-Managed Passive Equity (e.g., Aperio)* 2. *Discretionary Fund Investments (incl. active and passive ETFs and Mutual Funds)* 3. *Active Equities* **The equities portfolio will be managed with target exposure of mostly Domestic with a California tilt and 10% International[10] in aggregate*	65% *30%* *20%* *15%*	50-80% *25-35%* *15-25%* *10-20%*
Fixed Income	20%	15-25%
Real Assets and Infrastructure (incl. REITs, Utilities, etc.)	10%	5-15%
Cash (incl. short-duration T-Bills)	5%	0-10%
Other (VC, PE, other alternatives)	0%	0-5%

8. **Portfolio Construction:** Based on delivering strong financial returns while maintaining long-term stability for incoming Principals, the Fund will aim to hold a portfolio asset allocation of approximately 65% equity, 20% fixed income, 5% cash, and 10% in real assets. Each Principal class will determine exact target allocations, although consistency is expected to be maintained within the above range.

- **Equity - Passive**: Through the passive management approach, the Fund seeks broad equity market exposure with minimal tracking error to the benchmark index (see Section 9) while aligning with the Values Statement agreed upon by the Student Principals (see Section 3). This allocation is managed by an external customized account that meets the sustainability criteria determined by the Principals, avoids unwanted stock selections, and effectively manages risk.
- **Equity - Active**: The active equity sleeve maintains concentrated positions in individual companies selected by Principals through financial and sustainability analysis. The active sleeve aims to achieve alpha by identifying financially undervalued companies with strong sustainability prospects. These concentrated positions seek out performance above the benchmark index (see Section 9) and expose the Fund to idiosyncratic risk. The scope may be expanded beyond small- and mid-cap companies to include large-cap companies on a case-by-case basis.
- **Fixed Income**: The purpose of the fixed income allocation is to manage fund liquidity, improve diversification, and manage risk while maximizing direct, measurable ESG impact.
- **Cash**: A small percentage of funds should remain in cash to ensure liquidity.
- **Other Assets**: The Fund may invest the portfolio in other assets, such as real assets like sustainable timber or ESG absolute return funds, for additional diversification and furthering Principal learning about other asset classes in sustainable investing. Other asset opportunities- such as private equity- will be considered across market capitalizations for the potential to provide strong additionality and ESG impact.

Regarding The Fund's investment process, Principals agreed that exclusionary measures would be a minimum criterion and The Fund would use more positive tilts for screening. The Principals will keep an active watch list and make regular investment decisions to rebalance the portfolio to account for market volatility.

---

[10] The traditional definition for international is based on the geographic location of the company. We believe it is prudent to expand the definition of international, especially for our active equities, to include domestic companies primarily serving an international population.

9. **Performance Objective & Benchmarks:**
Our goal is to provide a total portfolio benchmark that aligns with our parent fund sponsor, The UC Berkeley Endowment. As a benchmark, we will use a blended benchmark for multi-asset portfolios, the 7twelve index, which provides annual and monthly composite returns for the multi-asset portfolio. Returns for the 7twelve index are broadly in line with return expectations of the UC Berkeley Endowment. With this transparent, investable total portfolio benchmark measured over long periods, we can see if all of our efforts in asset allocation, ESG considerations, and investment selection were able to beat a simpler approach.

Asset Class	Benchmark	Definition of Benchmark
Cash & Cash Equivalents	Citigroup Three Month US Treasury Bill	The Citigroup 3-Month T-Bill is an unmanaged index that is generally representative of 3-month Treasury bills and consists of an average of the last 3-month U.S. Treasury Bill issues.
Investment Grade Fixed Income	Barclays Capital US Aggregate Bond Index & Bloomberg MSCI Global Green Bond Index**	- The Barclays Capital US Aggregate Index represents securities that are SEC_registered, taxable, and dollar denominated. The Index covers the US investment grade fixed rate bond market, with index components for government and corporate securities, and asset-backed securities. - The index selection aligns with the fund's current fixed income allocation and the fund's goal to provide fixed income exposure via Investment grade global green bonds that are directly tied to promote climate or other environmental sustainability purposes.
Equity	MSCI ACWI & MSCI ACWI ESG Universal Index**	-The MSCI ACWI Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. - The MSCI ACWI ESG Universal index is designed to reflect the performance of an investment strategy that, by tilting away from free-float market cap weights, seeks to gain exposure to those companies demonstrating both a robust ESG profile as well as a positive trend in improving that profile, using minimal exclusions from the MSCI ACWI Index.
US Large Cap Equity	Russell 1000 Total Return Index & MSCI USA Large Cap ESG Leaders Index**	-The Russell 1000 Index measures the performance of the 1,000 largest companies in the Russell 3000® Index, which represents approximately 92% of the total market capitalization of theRussell 3000 Index. - The MSCI USA Large Cap ESG Leaders Index is a capitalization weighted index that provides exposure to companies with high Environmental, Social and Governance (ESG) performance relative to their sector peers. MSCI USA Large Cap ESG Leaders Index consists of large cap companies in the US market. T
US Small/Mid Cap Equity	Russell 2500 & MSCI World Small CAP ESG Leaders Select Index**	-The Russell 2500 is a market-cap-weighted index that includes the smallest 2,500 companies covered in the broad-based Russell 3000 sphere of United States-based listed equities. All 2,500 of the companies included in the Index cover the small- and mid-cap market capitalizations. -This index provides exposure to companies with high ESG performance relative to their sector peers. This index aligns with the fund's goal of seeking a broad, diversified sustainability benchmark with relatively low tracking error.
Emerging Markets Equities	MSCI Emerging Markets Index & MSCI Emerging Markets ESG Leaders Index**	-The MSCI EAFE Index is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. -The MSCI Emerging Markets (EM) ESG Leaders Index, is a capitalization weighted index that provides exposure to companies with high Environmental, Social and Governance (ESG) performance relative to their sector peers. MSCI EM ESG Leaders Index consists of

		large and mid cap companies across 27 Emerging Markets (EM) countries*.

10. **Risk Management:** The Fund will assess portfolio risk through its asset allocation strategy and through fundamental financial and ESG risk analysis for individual assets. In order to manage specific risk, the Fund will be diversified across a wide range of equities, including geography and market capitalization. The passive allocation is designed to minimize tracking error and provide broad market diversification to balance the concentrated individual equity positions. Principals will perform fundamental analysis to assess idiosyncratic risk in the active equity sleeve. These concentrated positions will be focused on companies in which the Principals have high conviction of financial outperformance and ESG impact. The Fund must maintain sufficient liquidity to fund annual spending of no less than 4% of the Fund's assets to maintain tax exempt status. To manage liquidity risk, the Fund will maintain a minimum of 20% of the portfolio invested in fixed income and cash securities.

11. **Responsibilities:**

    Student Principals: The role of Student Principals is to lead the Fund and participate in a comprehensive learning opportunity while preserving the long-term health of the Fund. Specific responsibilities of the Student Principals include:
    - Develop, adhere to, and revise the IPS as needed;
    - Evaluate a range of asset classes (e.g., equity, fixed income, and real asset, etc.) and execute trades that are in line with the values of the Fund;
    - Set performance expectations relative to a benchmark(s) in terms of risk and return;
    - Monitor holdings on an ongoing basis to ensure financial and ESG performance align with this policy and, when necessary, make the decision to increase, decrease, or fully exit a position;
    - Rebalance the portfolio to account for market fluctuations and/or cash needs in line with the defined asset allocation targets semi-annually (once in December, and once in May). ;
    - Track the portfolio's financial and impact performance (including monitoring fees for reasonability) and share progress regularly with stakeholders;
    - Select, monitor, and dismiss (if necessary) any investment management firms engaged to manage the Fund's assets; and
    - Maintain investment-related files, records, and accounting procedures.

    Faculty: The Professors have the responsibility to monitor and guide the Student Principals in the learning experience and management of the Fund. Specific responsibilities include:
    - Design the course syllabus based on educational objectives and input from Student Principals;
    - Guide students through and set expectations for class deliverables throughout the year;
    - Facilitate classroom discussions inclusive of all students;
    - Provide students with learning material and arrange guest speakers to broaden student's knowledge on ESG-related investment topics;
    - Provide counsel to Student Principals on investment decisions; and
    - Ensure continuity and knowledge transfer between Student Principals from year to year.

    Advisors: The Fund's Advisors have the responsibility to guide and oversee the Student Principals in the execution of the Fund. Specific responsibilities include:
    - Provide counsel to the Fund in terms of investment criteria and decision-making;
    - Review regular performance reports and provide guidance as necessary;
    - Hold the Fund accountable in adhering to investment guidelines, as well as delivering impact and financial returns; and
    - Participate in the annual report presentation and any interim presentations (e.g., semi-annual).

    Investment Managers: Investment Managers are expected to pursue their own investment strategies within the guidelines created for the manager in accordance with the Fund's asset allocation strategy and manager selection

criteria. Coordination of the guidelines for the individual managers assures the combined efforts of the managers will be consistent with the overall investment objectives of the Endowment. The Investment Managers' responsibilities are as follows:

- Investing assets under their management in accordance with agreed upon guidelines and restrictions;
- Exercising discretionary authority over the assets entrusted to them, subject to these guidelines and restrictions;
- Providing written documentation of portfolio activity, portfolio valuations, performance data, portfolio characteristics, and fees on a regular basis in addition to other information as requested by the Student Principals;
- Voting proxies for the assets under management (companies held within the portfolio) in the best interest of the Fund, and to the extent possible, consistent with the Fund's sustainable investing objectives;
- Notify the Student Principals of any litigation or violation of securities regulations in which the manager is involved; and
- Notify the Student Principals of any significant changes in portfolio managers, personnel, or ownership.

12. **Investment Policy Setting and Review:**

Setting: Every Student Principal is responsible for overseeing all aspects of the investment program, including development and approval of the Investment Policy Statement and any changes made to it after its initial adoption. As appropriate, SIF faculty and/or the Advisory Board will assist in developing, implementing, and/or monitoring implementation of the Investment Policy Statement. When setting the Investment Policy, Student Principals should consider the following, in this order:

- **Goals**: What are the financial and impact goals of the portfolio?
- **Tools**: What tools can be used to achieve these goals? What are the pros and cons of each tool? Which are most appropriate for the stated goals? *(examples of tools include negative screens, active engagement, integration of key ESG risks into investment strategies, etc.)*
- **Implementation**: What specific measures need to be taken to implement these tools across the SIF portfolio in order to achieve the stated financial and impact goals? *(for example, a specific lens, screen, or tilt applied to investment decisions, an updating of investment parameters for the indexed portion of the portfolio, the adoption of a specific set of standards or framework for measuring impact)*
- **Execution**: What needs to be done to transition the portfolio to meet the selected financial and impact goals?

Reviewing: Opportunity should be given to propose changes or consider changes proposed by every Student Principal. The proposed changes shall be centrally recorded by a designated Principal. There are three ways that the IPS can be updated:

- Within the first four weeks of the Fall semester, Student Principals will be given the opportunity to revamp the previous year's IPS. Student Principals will work to draft, agree upon, and formalize the IPS.
- Within the first two weeks of the Spring semester, Student Principals will be given the opportunity to revise the IPS. Any proposed changes to the IPS will be submitted in writing and discussed in class, and will ultimately be put to a vote. Any changes shall be approved and incorporated within four weeks of the Spring semester.
- Mid-semester changes to the IPS may be proposed by any SIF Principal on an emergency basis if necessary to address shortcomings that materially impede Principals from adequately managing the Fund. These mid-semester changes should be proposed in writing to all Principals and Faculty, and should be voted on by all Principals within two weeks of the proposal.
- When deciding whether to approve proposed changes, 100% voter turnout (either in person, electronically, or through a delegated proxy voter who is a SIF Principal or faculty) shall be required and each SIF Principal may vote "Yes", "No", or "I can live with it" - the change shall be accepted provided that ⅓ of SIF Principals or at least 4 SIF Principals take an active stance, and then the "I can live with it" will be included as part of the majority.

13. **Asset Allocation:** To best achieve the Fund's purpose and investment objectives, at the beginning of each academic year the SIF Principals will be responsible for reviewing and potentially revising the asset allocation stated within the IPS through the following process:

- In concurrence with reviewing the IPS during the start of each academic year, SIF Principals are tasked with reviewing the previous year's asset allocation
- Following their review, SIF Principals either individually or in groups will have the opportunity to submit and present revised asset allocation plans
- Immediately following the conclusion of all presentations, SIF Principals shall vote on each proposed asset allocation plan. A proposed asset allocation plan shall be accepted provided that ⅓ of SIF Principals or at least 4 SIF Principals take an active stance, and then the "I can live with it" will be included as part of the majority.
- **Operations of the Investment Committee:** The Investment Committee is a standing committee for the Fund. All of the SIF Student Principals comprise the Investment Committee which will run according to an Investment Committee Charter. A Committee Chair, who shall be a member, shall preside at all meetings and this responsibility will rotate between Student Principals. Meetings may be in person or telephonic and the Chairman shall set and follow an agenda and present any findings or recommendations to the rest of the committee. A proposed investment action requires ⅓ of SIF Principals or at least 4 SIF Principals take an active stance, and then the "I can live with it" will be included as part of the majority. Minutes shall be kept of each Committee meeting and shall be filed with the Fund's records.

14. **Sell Philosophy:** As portfolio holdings are under regular evaluation, the SIF Principals consider the sell decision a value-added aspect of the investment process. Sell decisions can occur for financial reasons such as when: (i) a price target has been met, (ii) fundamentals have changed or the established growth drivers have failed to develop as expected, and/or (iii) stronger alternatives in growth and valuation exist elsewhere. Sell decisions and trimming of positions can also occur for impact reasons such as when: (i) a company has failed to meet its impact thesis, and/or (iii) the company's impact scorecard has meaningfully deteriorated and opportunities for engagement and shareholder advocacy are limited. It is important to note that the (iii) impact scorecard of the fund should NOT be reliant on a single ESG rating agency; at least two credible and widely accepted ESG ratings from two different ESG rating agencies should be used to develop the final scorecard benchmark. If the two agencies' ratings are widely (at least two Standard Deviations away) different from each other, a combination of a third source and a classroom voting from SIF principals should be considered to make the final sale/hold decision.

15. **Reporting:** SIF Principals shall prepare the following reports for the purpose of monitoring portfolio performance and progress towards stated financial and impact goals.

    Weekly Portfolio Updates: On a rotating basis, each week one SIF Principal will provide updates about the Portfolio. It is not a formal report, but rather a short discussion, lasting about 5 minutes on average, of any newsworthy events such as earnings announcements, campaigns by activist investors, and/or new government policies that may impact Portfolio Companies (e.g., Inflation Reduction Act).

    Monthly Portfolio Performance Updates and Transaction Reports: The Head of Portfolio Updates should prepare a report summarizing the portfolio's performance over the previous month, and should share it with all SIF Principals and SIF Faculty Members. The report should be delivered within one week of months-end, and should include the following:
    - Individual investment returns
    - Asset class returns vs. benchmarks
    - Portfolio return vs. benchmark
    - Summary of all inflows and outflows, including purchases/sales, and investments/withdrawals.

    Mid-Year Update: The SIF Principals shall prepare a mid-year update for the SIF Advisory Board which shall be delivered in December of each year, ideally in person or via a virtual meeting. This update is intended to be both retrospective and prospective, and should summarize the following:
    - Key decisions made in managing the fund during the Fall semester (August - November)
    - Annual investment, asset class, and portfolio returns vs. relevant benchmarks during the Fall semester
    - Summary of all inflows and outflows, including purchases/sales, and investments/withdrawals during the Fall semester.
    - Key considerations or elements to be explored by SIF Principals during the spring semester (January - April)

Annual Report: The Fund has published an annual report each year since inception and will continue to disclose performance annually in order to disseminate knowledge about sustainable investing and share results with Fund stakeholders. This report should be prepared by all SIF Principals, delivered to SIF Faculty, Advisors, and the following year's SIF Principals in May of each year, and should include the following:

- A description of investment philosophy and portfolio strategy
- Annual investment, asset class, and portfolio returns vs. relevant benchmarks
- Returns over 3, 5, 10, and since inception periods
- Summary of all inflows and outflows, including purchases/sales, and investments/withdrawals during the academic year
- Portfolio impact report

Impact Scorecard: The Fund seeks to monitor its performance on achieving its stated Values through the use of an Impact Scorecard. The Impact Scorecard will have the format proposed below that aligns the Values of the fund with each individual investment. SIF Principals should update this Impact Scorecard using available data (using Ethos ESG, SIF's primary ESG data vendor) during the Spring semester of each year.

	Gender	Human Rights/Responsible Consumption	Climate	Water	Sustainable Resource Use
Company 1	Rating from A-F	Rating from A-F	Rating from A-F	Rating from A-F	Rating from A-F

If an asset investment has a score of D or F in any of our impact criteria, this should be sold or should not be invested in. If the principals feel strongly on the asset investment then a case needs to be presented and voted on with a 75% majority rule (from 100% SIF team participation). The argument needs to present a pathway where this asset will achieve an impact score of C or higher and a deadline for this score to be achieved, else the asset investment will be sold.

Portfolio Management Process: In order to effect a smooth transition from each year to the next, SIF Principals should prepare an annual summary of their portfolio management process. This document should be delivered to the following year's SIF Principals in May of each year and should include a summary of:

- Key decisions made (including description of decision, rationale, outcome, and timeline)
- Lessons learned
- Recommendations for next year's SIF Principals

16. **Payout Management:** The Fund shall make an annual distribution to the Sustainable and Impact Finance Initiative (SAIF). For the purpose of making distributions, the Fund shall use a total-based spending policy, which means that it will fund distributions from net investment income, net realized capital gains, and proceeds from the sale of holdings. Annual distributions will be calculated at a net 4% of a twenty-quarter moving average market value of the fund, to smooth distributions and mitigate volatility. The distribution of Fund assets will be permitted to the extent that such distributions do not exceed a level that would erode the Fund's real assets over time.

17. **Summer Risk Management:** Prior to leaving for the summer, the current SIF Principals should put stop-loss orders in place for all individual active equity names to protect against severe dislocations during times when there are no Principals monitoring the portfolio.

Appendix A: Excluded Industries and Sectors

I. **Weapons:** The Fund will not hold any companies that manufacture, sell and/or distribute anti-personnel mines, cluster munitions, white phosphorus, chemical, biological and/or nuclear weapons. The Fund will not invest in any companies that manufacture, sell, and/or distribute assault and non-assault firearms or small arms, for civilian, military, and law enforcement customers. Companies that generate 5% or more of their revenues from retail sales of assault and non-assault firearms or small arms are also excluded. The Fund excludes companies that generate 5% or more of their revenues from selling weapon systems and/or integral, tailor-made components for weapons, and weapon-related products and/or services, to the military or defense industry. The exclusion does not apply to companies that provide non-weapons related products and/or services to the military or defense industry.

II. **Prison Industrial Complex:** The Fund recognizes mass incarceration due to longer sentencing and harsher policies has increased poverty and inequality. The Fund will not hold any private prison operators. The Fund will not hold companies whose core business is providing services to incarceration and detention facilities, companies that contribute to the militarization of the U.S.-Mexico border or companies whose core business relates to immigrant policing, monitoring, and surveillance.

III. **Screens Stemming from Third-party Managed Passive Investments (e.g., Aperio):** The Fund recognizes that the decision of whether to screen out fossil fuel exposure is one of the most widely debated topics in the sustainable finance world, and a debate that is likely to continue for years to come. Through our third-party managed passive investments, we screen out nearly the entire energy sector and the entire tobacco sector. This definition, however, is a gray area as we want to leave open the possibility of meaningful advocacy and engagement with a fossil fuel company should we choose to invest in such a company through other parts of our asset allocation (e.g., active equities).