



Quarterly Investment Performance Analysis

Wyoming State Treasurer's Office

Period Ended: December 31, 2022





Memorandum

To	Wyoming State Loan and Investment Board
From	RVK, Inc.
Subject	Investment Performance Analysis – Summary of Contents
Date	December 31, 2022

To assist in your review of the Investment Performance Analysis for the quarter ended December 31, 2022, we have provided below an outline and summary of the information contained within each section of this report.

MEMORANDUM – Investment Performance Analysis Commentary

- This two-page memo provides a written summary of significant observations regarding performance of the State's Funds and an overview of performance during the quarter for each of the State's asset classes.

TAB 1 – Market Environment

- This section is intended to review capital markets in general (i.e. not specific to Wyoming), and includes a written summary of events during the quarter, including economic influences and review of equity and bond markets as a whole. This section also includes various charts and exhibits displaying key characteristics of major market indices representing the broad range of available asset classes, including alternative investments such as absolute return and real estate. Also included is an asset class summary that describes the structure of each of the State's composites. Lastly, this section includes a review of the benchmarks referenced within the quarterly report.

TAB 2 – Total Fund

- This section provides an overview of all of the State's investments, both permanent and non-permanent. Exhibits include an outline of the aggregate asset allocation – by manager, by investment fund, by asset class, and compared to peers. This section also includes Total Fund performance compared to other plan sponsors and highlights the risk and return profile of the State.

TAB 3 – Investment Funds

- This section details the asset allocation versus target of each of the State's investment funds. In addition, a summary page highlighting the performance of each fund compared to the respective total fund index is included.

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TAB 4 – Total Equity

- This section summarizes the State's allocation to traditional equity managers – both domestic and international – and details the performance of each manager versus both their corresponding benchmark as well as their direct peer universe. Attribution pages are also incorporated, which outline the allocation by sector (or region) for each sub-composite and the corresponding performance.

TAB 5 – Alternative Assets

- This section includes allocation and performance information for the State's alternative investments, which include real estate, absolute return, and private equity strategies.

TAB 6 – Total Fixed Income

- Similar to the equity section, this section summarizes the allocation to and performance of each of the State's fixed income managers, including the internally managed portfolio. Characteristics pages are also included for each sub-composite.

TAB 7 – Cash and Cash Equivalents

- This two-page summary outlines the performance of the State's cash portfolios compared to current T-Bill rates and a custom blended index for JP Morgan.

Tab 8 – Investment Manager Profile Pages

- This section contains a number of portfolio characteristic pages for the State's investment managers, including historical strategy performance prior to the State's investment. These pages include such characteristics as risk, upside/downside capture, market capitalization, allocation by sector and more.

TAB 9 – Investment Policy Objective Review

- The section provides a compliance check for the Total Fund, and for each individual manager portfolio, versus the guidelines and expectations outlined in the State's Master Investment Policy and Sub-Policies.

APPENDIX

- The appendix includes a glossary, providing definitions and other information on data included throughout the report, including financial terms and ratios, indices, and peers groups. The addendum page in the appendix includes important comments specific to Wyoming regarding market value, performance, and allocation information provided throughout the report.

WYOMING STATE TREASURER’S OFFICE

FOURTH QUARTER 2022

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Memorandum

To	Wyoming State Loan and Investment Board
From	RVK, Inc.
Subject	Investment Performance Analysis Commentary
Date	December 31, 2022

Outlined below please find a summary of significant observations regarding performance of the State's Funds for the quarter ended December 31, 2022. We hope this summary will facilitate your review of our Investment Performance Analysis Report.

The Total Fund returned 3.9% net of fees during the fourth quarter as public equity and risk assets produced positive returns. Long-term performance for the Total Fund remains strong, with the State earning returns of 4.7% and 4.3% per annum over the trailing seven- and ten-year periods.

Absolute results were positive for each of the State's investment pools, with each pool keeping pace or slightly trailing their respective benchmark during the quarter. The State's permanent funds generated higher returns on an absolute basis compared to the State's non-permanent funds.

The Bloomberg US Aggregate Bond Index returned 1.87% in the quarter, capping off a decline of -13.0% in 2022, the most negative calendar year on record. Non-Investment grade corporate credit relatively outperformed investment grade over the year. The State's core fixed income managers underperformed the broad market index by 0.31%, collectively returning 1.56%. Emerging Market Debt and Low Duration both outperformed their benchmarks while all composites posted positive returns, excepting the opportunistic portfolio.

Returns were positive across equity market cap and style groups in Q4. The reversal to growth in Q3 was short-lived, as value stocks led by a wide margin. Energy had its best year on record with the S&P Energy Index gaining 65.7%. The State's Equity composites outperformed their respective benchmarks with the Small Cap US Equity composite leading it's benchmark by 5.61%.

Emerging markets again lagged developed in the fourth quarter. The MSCI Emerging Markets Index finished with a 9.7% return. The State's international equity composite returned 14.4% during the quarter, outperforming the MSCI ACW Ex US Index by 0.13%. Arrowstreet led it's benchmark by 0.87% while Harding Loevner returned 14% during the quarter but modestly trailed it's benchmark by 0.33%.

MLPs generated positive absolute returns for the period. Harvest Active and Harvest Passive returned 7.4% and 9.1%, respectively. Cohen & Steers Preferred Stock returned 2.5% in the quarter but underperformed the benchmark by 0.64%.



Core real estate turned negative during the quarter. The State's core real estate composite earned -4.86% but outperformed the NCREIF ODCE Index by 0.31%. Clarion and UBS returned -5.27% and -5.37%, each slightly trailing the benchmark, while MS Prime returned -3.69%, outperforming the benchmark by 1.48%.

Diversified hedge funds returned 0.95% during the quarter, underperforming the HFRI FOF Composite Index by 0.78%. Grosvenor Diversified Hedge Funds and Internal Diversified Hedge Funds returned 1.73% and 0.43%, respectively. The Infrastructure Composite returned 7.28%, strongly leading the benchmark by 5.49%.

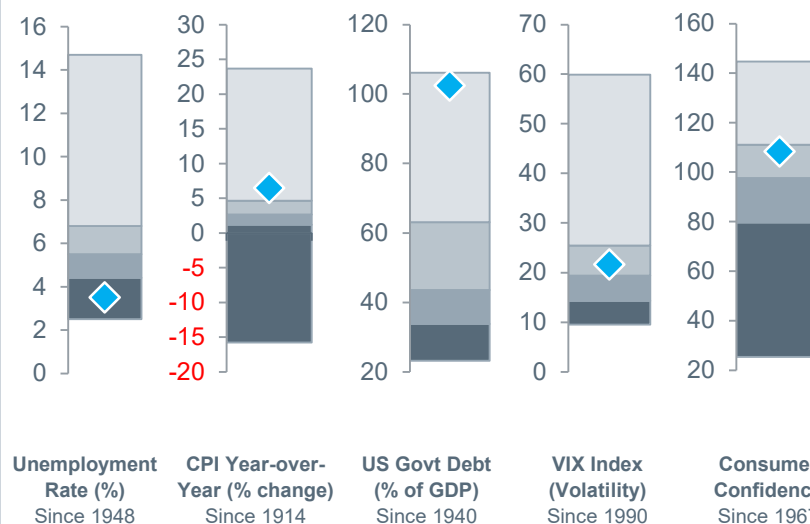
Capital Markets Review



Fourth Quarter Economic Environment

In Q4, equity and fixed income markets delivered improved results while continuing to experience elevated volatility. However, positive quarterly returns came on the tail of a significantly negative year for many investors. Regarding economic conditions, the impact of tightening monetary policy and persistent inflation, combined with supply shocks and an energy crisis in Europe, are leading to increasing odds of a global recession in 2023. On a relatively positive note, recent data indicates that the inflationary environment is showing signs of abating. Notably, the US Consumer Price Index declined for a sixth straight month in December with a reading of 6.5%, the lowest level since October 2021. In December, the FOMC did slow the pace of policy rate hikes with a 50 basis point increase, following a series of four straight 75 basis point increases. Internationally, the war in Ukraine caused an energy price shock and trade tensions continue to test economic and political relationships across multiple regions. Within emerging markets, investor attention is focused on China with some pointing to signs of a softening stance toward pandemic restrictions as reason to be optimistic regarding the country's outlook. However, these views are countered with concerns over indications of social unrest and the consolidation of power around President Xi Jinping. With all this considered, global GDP growth forecasts continue to moderate with the OECD forecasting growth of 3.1% in 2022 with an expected decline to 2.2% global GDP growth in 2023.

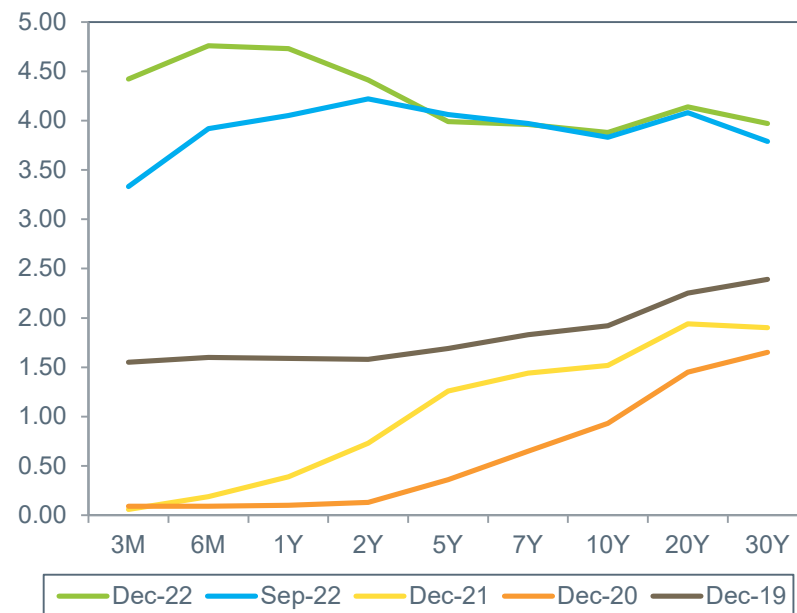
Key Economic Indicators



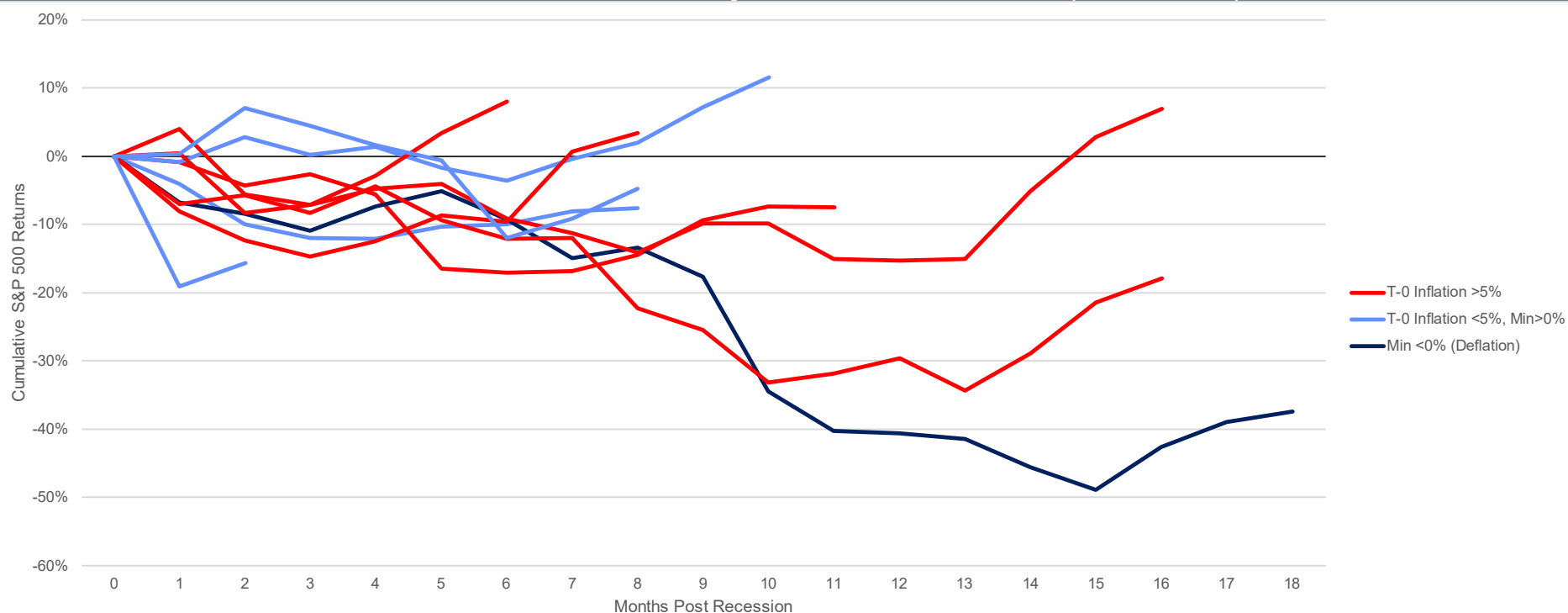
Economic Indicators	Dec-22	Sep-22	Dec-21	Dec-19	20 Yr
Federal Funds Rate (%)	4.33 ▲	3.08	0.07	1.55	1.30
Breakeven Infl. - 5 Yr (%)	2.38 ▲	2.16	2.91	1.70	1.92
Breakeven Infl. - 10 Yr (%)	2.30 ▲	2.15	2.59	1.79	2.08
CPI YoY (Headline) (%)	6.5 ▼	8.2	7.0	2.3	2.5
Unemployment Rate (%)	3.5 —	3.5	3.9	3.6	6.0
Real GDP YoY (%)	1.0 ▼	1.8	5.7	2.6	2.0
PMI - Manufacturing	48.4 ▼	50.9	58.8	47.9	53.7
USD Total Wtd Idx	121.51 ▼	127.64	115.37	114.67	103.33
WTI Crude Oil per Barrel (\$)	80.3 ▲	79.5	75.2	61.1	67.9
Gold Spot per Oz (\$)	1,824 ▲	1,661	1,829	1,517	1,160

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	7.56	-18.11	-18.11	9.42	12.56
Russell 2000	6.23	-20.44	-20.44	4.13	9.01
MSCI EAFE (Net)	17.34	-14.45	-14.45	1.54	4.67
MSCI EAFE SC (Net)	15.79	-21.39	-21.39	-0.05	6.21
MSCI Emg Mkts (Net)	9.70	-20.09	-20.09	-1.40	1.44
Bloomberg US Agg Bond	1.87	-13.01	-13.01	0.02	1.06
ICE BofAML 3 Mo US T-Bill	0.84	1.46	1.46	1.26	0.76
NCREIF ODCE (Gross)	-4.96	7.47	7.47	8.68	10.10
FTSE NAREIT Eq REIT (TR)	5.24	-24.37	-24.37	3.68	6.53
HFRI FOF Comp	1.79	-5.25	-5.25	3.02	3.51
Bloomberg Cmdty (TR)	2.22	16.09	16.09	6.44	-1.29

Treasury Yield Curve (%)



S&P 500 Performance - Recessionary Periods and Inflation Levels (1957 - Present)



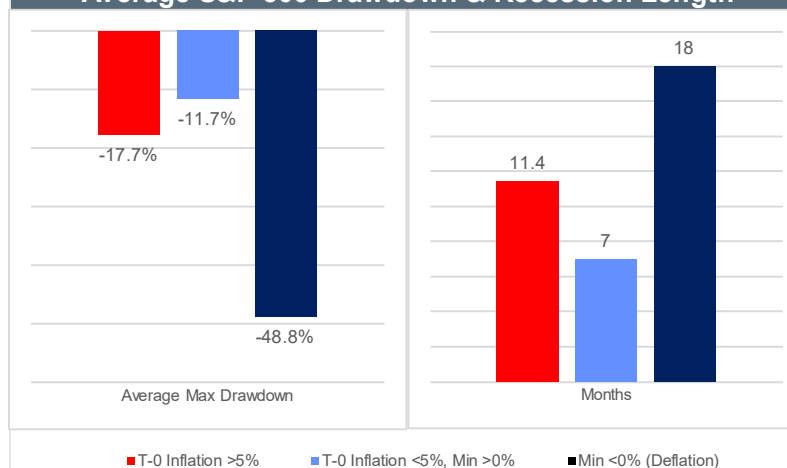
Recession Statistics

Start Date	Length Months	YoY CPI% @ T-0	Max YoY CPI%	Min YoY CPI%	Max Drawdown From T-0	Cumulative Return
9/30/1957	8	2.9	3.4	2.8	-12.0%	-7.6%
5/31/1960	10	1.6	1.6	0.9	-3.6%	11.6%
1/31/1970	11	5.9	5.9	5.0	-17.0%	-7.5%
12/31/1973	16	8.4	11.2	8.4	-34.2%	-17.9%
2/29/1980	6	13.0	13.5	12.1	-7.1%	8.0%
8/31/1981	16	9.9	9.9	4.1	-15.3%	7.0%
8/31/1990	8	5.5	6.0	4.6	-14.7%	3.4%
4/30/2001	8	3.0	3.0	1.7	-11.9%	-4.7%
1/31/2008	18	3.9	5.5	-2.0	-48.8%	-37.4%
3/31/2020	2	1.2	1.2	0.3	-19.1%	-15.7%

Averages

T-0 Inflation > 5%	11.4	8.5	9.3	6.8	-17.7%	-1.4%
T-0 Inflation < 5%, Min > 0%	7.0	2.2	2.3	1.4	-11.7%	-4.1%
Min < 0% (Deflation)	18.0	3.9	5.5	-2.0	-48.8%	-37.4%

Average S&P 500 Drawdown & Recession Length



Performance for each period begins where T-0 is equal to the start of an official recession and runs until the official end of the recession (as reported by the National Bureau of Economic Reporting).

Inflation is measured as the YoY % change in CPI. T-0 = the official recession start date.

Max and Min refer to the maximum and minimum observed YoY CPI% change during the recessionary period.

Source: RVK calculations, based on data from S&P Dow Jones Indices and FRED Database.

Fourth Quarter Review

Broad Market

US equity markets experienced a decrease in volatility in Q4 with short term spikes around CPI release dates and Fed meetings. Returns were positive across market cap and style groups in Q4. The reversal to growth seen in Q3 was short-lived, as value stocks led growth by a wide margin in Q4. Energy had its best year on record with the S&P 500 Energy Index gaining 65.72%.

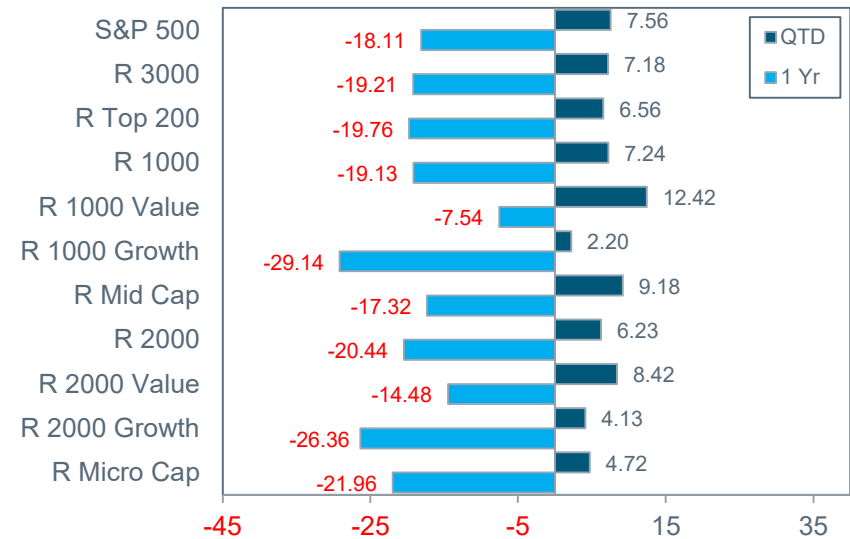
Market Cap

This year marks the worst performance of US equities across market cap groups since the GFC, and only the third time in the last 15 years that the Russell 3000 Index has generated negative returns.

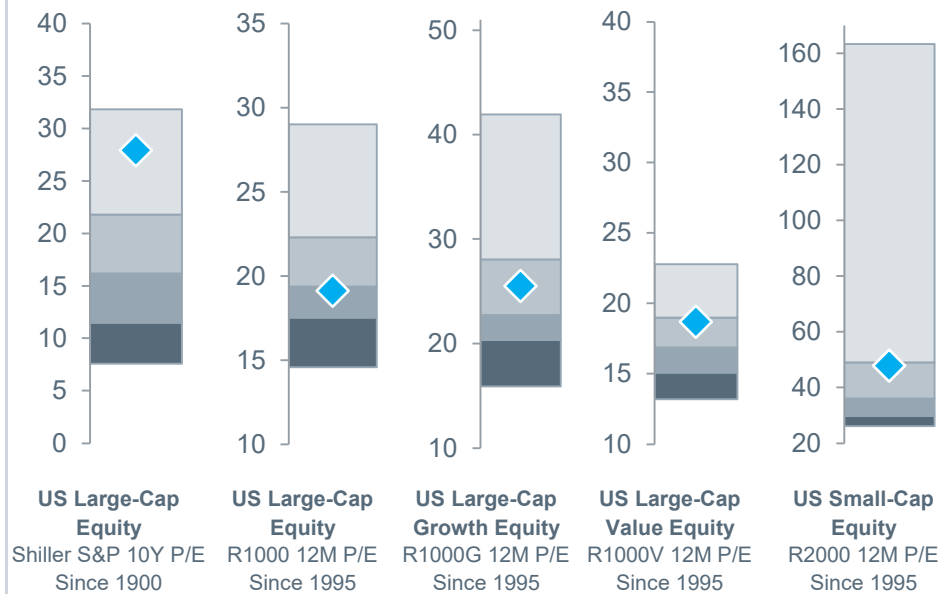
Style and Sector

Value-oriented managers had a higher success rate than core or growth managers in the small- and mid-cap spaces, while large-cap core and growth managers fared better than value managers. Growth managers across the market cap spectrum struggled to provide downside protection in 2022, while value and core managers were broadly successful.

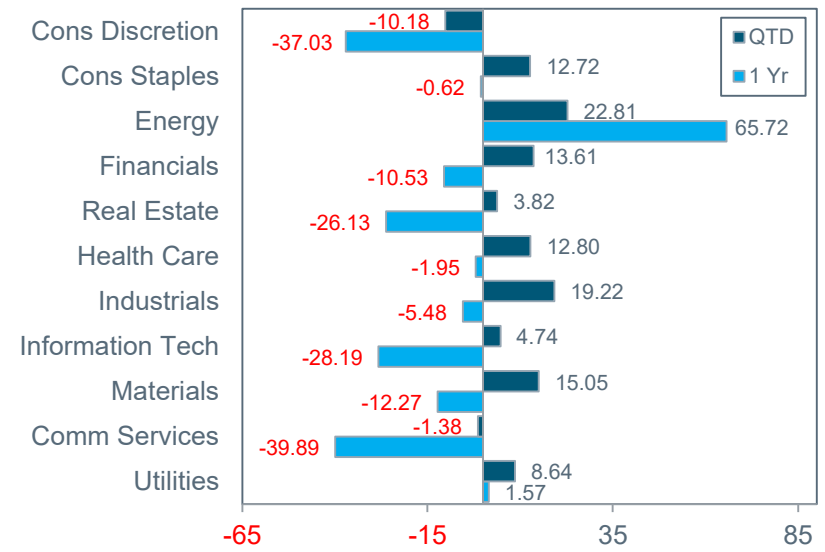
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Fourth Quarter Review

Developed Markets

International developed markets meaningfully outperformed their domestic counterparts in Q4 with the MSCI EAFE Index realizing a 17.3% return for the period. Value stocks rebounded back into favor, outperforming growth in a reversal from the prior quarter, while large-cap continued its outperformance over small-cap stocks. Overall, market trends pointed to investors anticipating moderating inflation and easing of rate hikes despite the ongoing uncertainty led by the conflict in Ukraine and near-term recession fears.

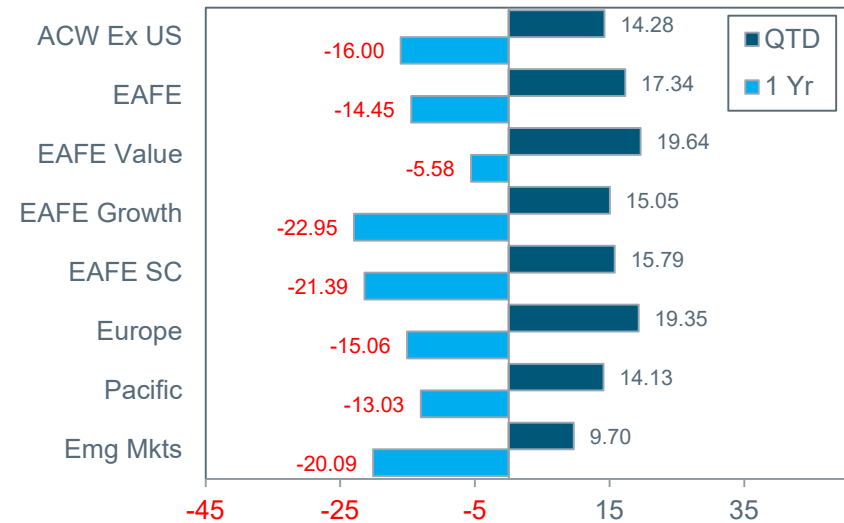
Emerging Markets

Emerging markets lagged behind developed during the quarter with the MSCI Emerging Markets Index finishing with a 9.7% return. Value stocks narrowly outperformed growth and large-cap beat small-cap.

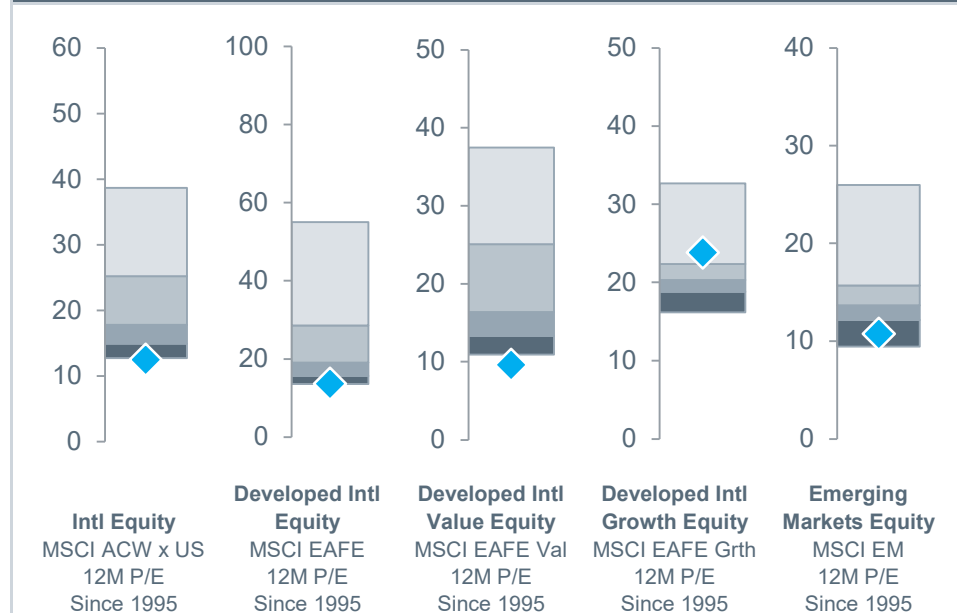
Market Cap & Style

The majority of active managers in emerging markets outperformed the index in Q4; however, active managers in international developed mostly underperformed.

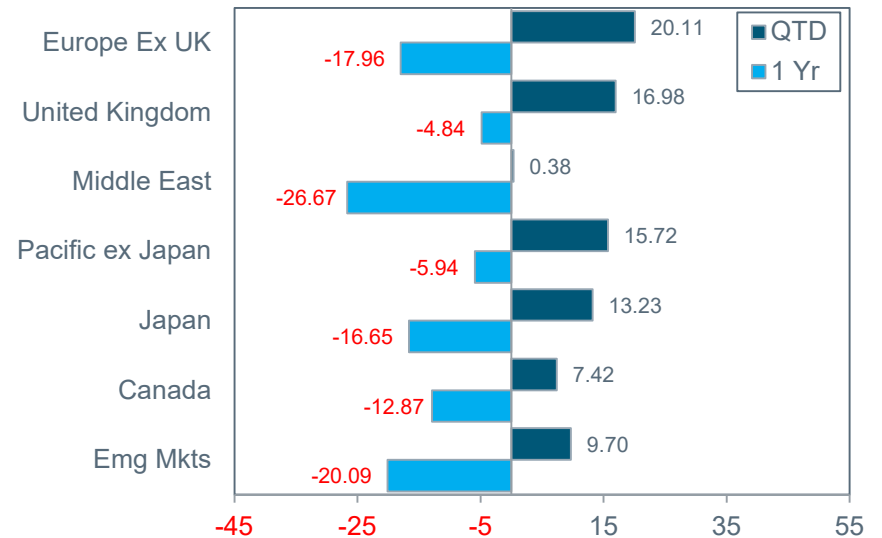
MSCI Style and Capitalization Market Performance (%)



Valuations



MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

All returns are shown net of foreign taxes on dividends.

Fourth Quarter Review

Broad Market

The Bloomberg US Aggregate Index finished Q4 with a return of 1.9%, capping off a decline of -13.0% in 2022, the most negative calendar year on record for the index. The year was defined by rising interest rates, as treasury yields rose 236 basis points from 1.5% to 3.9% as measured by the 10-year US Treasury yield. The Federal Reserve aggressively hiked the Federal Funds rate in response to persistent inflation over the course of the year.

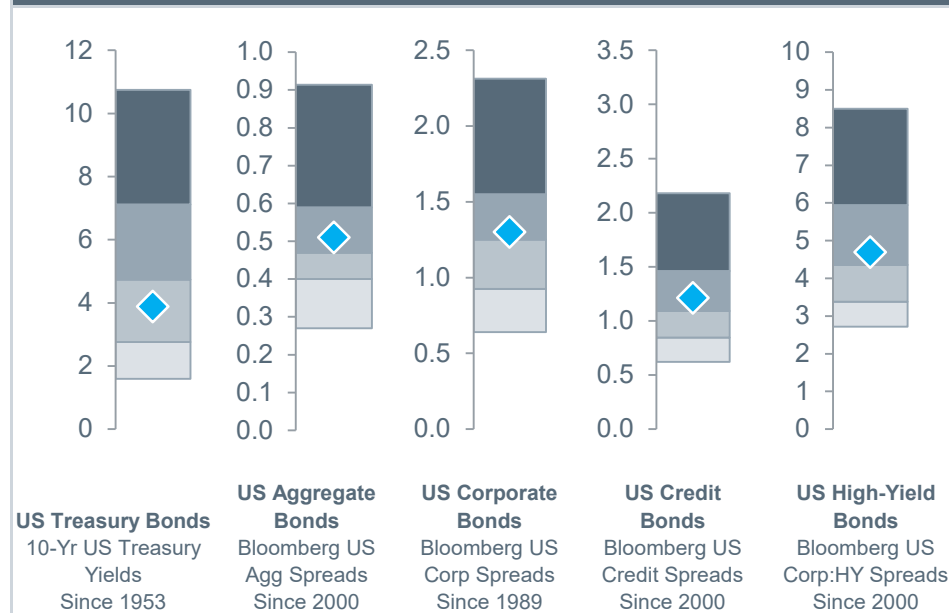
Credit Market

US investment grade corporate bonds rebounded in Q4 as low supply and softer Federal Reserve rhetoric bolstered credit markets. Non-investment grade corporate credit relatively outperformed investment grade over the year.

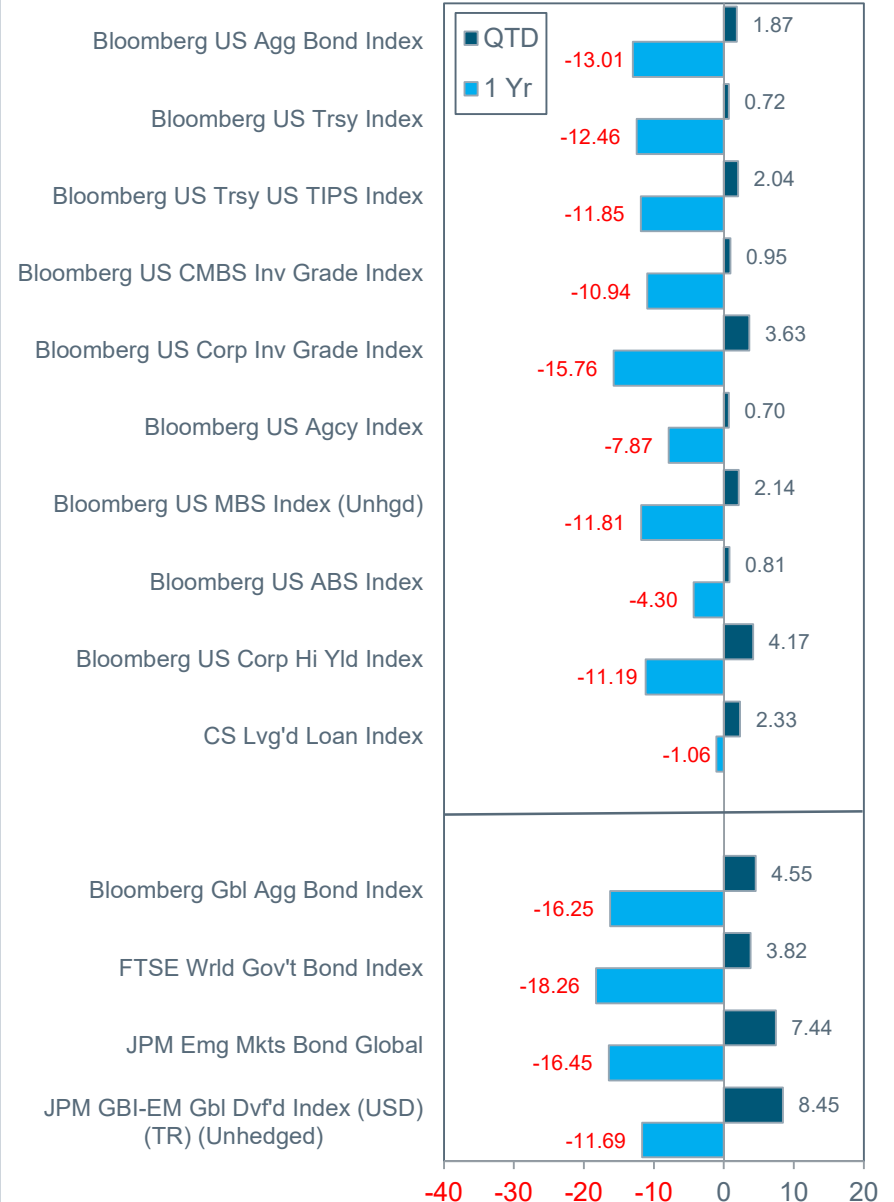
Emerging Market Debt

Conditions in global fixed income markets were defined by concerns over low growth, persistent inflation, rising interest rates, a strong US Dollar, and geopolitical conflict. The Bloomberg Global Aggregate Index returned 1.0% in Q4 and -11.2% in 2022, while the JPM EMBI Global Diversified returned 8.1% and -17.8% over these respective periods.

Valuations



Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fourth Quarter Review - Absolute Return

General Market - Hedge Funds

Despite a highly challenging market backdrop, hedge funds broadly delivered much-needed capital preservation to institutional investors. The year also ended on a strong note given most managers were reducing leverage and overall market exposure going into Q4. The HFRI Fund-Asset-Weighted Composite Index delivered an annual return of 1.0% while its Asset-Weighted counterpart ended the year at -4.0%.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies that RVK follows closely posted significant gains with moderate dispersion to close an otherwise challenging year. Given a strong quarter for non-US equity, as well as value-oriented equity within the US, nearly all active managers with significant diversification outperformed a US-centric blend of 60% equity and 40% fixed income. The top performing long-biased GTAA strategies were those who have included meaningful market neutral idiosyncratic relative valuation exposures. While those who moderately underperformed peers benefitted from a value bias despite maintaining US equity and fixed income exposures.

Fourth Quarter Review - Real Assets

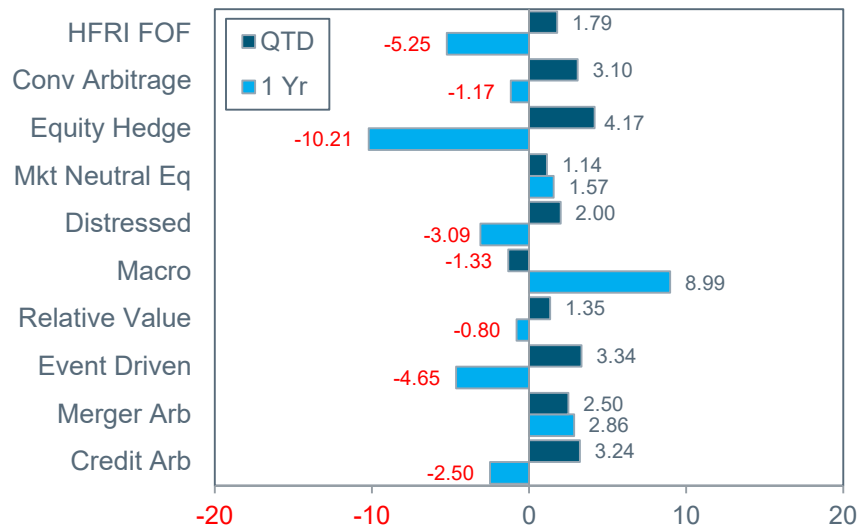
General Market - Diversified Inflation Strategies (DIS)

DIS managers tracked closely by RVK have outperformed a US-centric blend of 60% equity and 40% fixed income both year to date, and over the quarter. After responding positively to record inflationary pressures in Q1 of 2022, DIS posted losses in the second and third quarters that followed. Strong Q4 performance has materialized across the peer group, with those who rely on income-oriented investment processes and those who hold larger TIPS allocation lagging the group to a moderate degree.

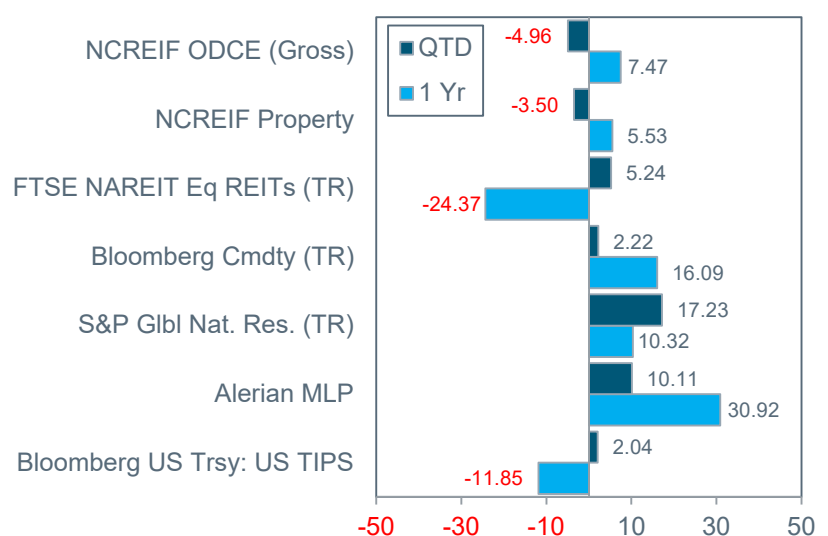
General Market - Real Estate

Core private real estate generated a negative return of -5.0% in Q4 (on a preliminary and gross of fee basis), as reported by the NFI-ODCE Index, with the total return comprising of 0.8% income and -5.8% price appreciation. Investors of publicly traded real estate significantly outperformed their private market counterparts by a meaningful margin. Publicly traded real estate delivered a fourth quarter total return of 4.5%, as measured by FTSE/NAREIT All REITs Index.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)



										Sharpe Ratio			Annualized Statistics (02/2006 - 12/2022)			
										Asset Class	Historical 10 Years Sharpe Ratio	Forecasted Sharpe Ratio		Return	Standard Deviation	Sharpe Ratio
<div>Best</div> <div>↑</div> <div>↓</div> <div>Worst</div>	2014	2015	2016	2017	2018	2019	2020	2021	CYTD (As of 12/22)							
	14.07	15.02	21.95	27.19	10.40	31.49	21.68	39.92	26.26	S&P 500 Index - US Large Cap	0.83	0.19	S&P 500 Index - US Large Cap	9.01	15.51	0.56
	13.69	6.01	21.31	21.83	8.35	25.53	19.96	39.33	7.47	Russell 2000 Index - US Small Cap	0.51	0.16	Russell 2000 Index - US Small Cap	7.25	20.25	0.39
	12.50	5.47	13.24	18.44	1.87	21.51	18.40	28.71	1.46	International Equity Custom Index - International	0.28	0.28	International Equity Custom Index - International	3.20	17.24	0.20
	11.40	1.38	11.96	15.21	0.44	17.64	10.88	22.17	-0.68	Cambridge US PE Index - Private Equity	1.32	0.24	Cambridge US PE Index - Private Equity	13.34	10.99	1.09
	7.66	0.55	10.16	14.65	0.01	13.82	10.65	14.82	-2.34	NCREIF ODCE Index - Real Estate	1.53	Core 0.30 / Non-Core 0.26	NCREIF ODCE Index - Real Estate	7.35	7.98	0.79
	5.97	0.18	9.94	9.11	-4.02	13.47	7.97	7.82	-5.31	HFRI FOF Comp Index	0.56	0.33	HFRI FOF Comp Index	2.70	5.45	0.30
	4.89	-0.27	8.77	7.77	-4.25	8.72	7.51	6.17	-12.04	Preferred Stock Custom Index	0.47	0.25	Preferred Stock Custom Index	4.40	15.77	0.28
	3.37	-0.69	4.50	7.62	-4.38	8.64	3.12	5.71	-13.01	MLP Custom Index	0.22	0.21	MLP Custom Index	7.18	24.70	0.36
	1.60	-4.41	2.65	4.12	-6.21	8.39	1.50	4.66	-13.90	Bloomberg US Agg Bond Index - Fixed Income	0.09	0.18	Bloomberg US Agg Bond Index - Fixed Income	3.01	3.83	0.49
	0.18	-5.66	1.94	3.54	-11.01	7.55	1.19	0.05	-16.00	Bank Loans Custom Index	0.53	0.40	Bank Loans Custom Index	4.30	7.42	0.44
	-3.87	-14.92	0.51	0.84	-11.67	5.34	0.67	-1.85	-18.11	EMD Custom Index	-0.18	0.36	EMD Custom Index	3.30	12.14	0.23
-5.72	-35.07	0.38	-5.58	-14.20	2.47	-25.60	-3.26	-20.44	JP Morgan Cash Custom Index - Cash Equiv	0.61	0.00	JP Morgan Cash Custom Index - Cash Equiv	1.42	0.53	1.12	

The International Equity Custom Index consists of the MSCI EAFE Index (USD) (Gross) through July 2010 and the MSCI ACW Ex US Index (USD) (Net) thereafter.

The Preferred Stock Custom Index consists of S&P U.S. Preferred Stock Index through 06/30/2021, and 60% ICE BofAML US IG Inst Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index thereafter.

The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter.

The Bank Loans Custom Index consists of S&P LSTA Lvlgd Loan Index through 06/30/2021, and the S&P LSTA US Lvlgd Loan 100 Index thereafter.

The EMD Custom Index consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvf'd Index, 1/3 JPM CEMBI Brd Dvf'd Index, and 1/3 JPM EMBI Gbl Dvf'd Index thereafter.

The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return.

The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.

ASSET CLASS SUMMARY

US Equity: The **US Equity** structure employs a core-satellite approach, which gains passive, low-cost beta exposure at its core. The core component of the portfolio utilizes passive management intended to replicate a broad market index. The Small Cap investment managers include active management intended to provide alpha. Similarly, the asset class recently added internally managed portfolios within large cap and small cap, which draw upon staff expertise in managing equity portfolios.

International Equity: The **International Equity** structure follows an ACWI Ex US approach, which offers coverage of the broad international equity market, including developed and emerging markets. The International Equity portfolio is comprised of both passive and active management styles. The mix of passive and active management helps to minimize costs, while striving to maximize the probability of alpha generation at a similar absolute risk level.

Private Equity: The **Private Equity** asset class has primarily been accessed through fund of funds and customized fund of one structure. Investments also include exposure to direct co-investments and secondaries. Recent commitments within this asset class have added global diversification to the portfolio.

Private Credit: The **Private Credit** portfolio provides access to unique economic drivers and is generally less correlated to traditional markets. The composite is comprised of funds that limit exposure to default risk through unlevered portfolios and are limited in size to mitigate manager or vintage year concentration.

Real Estate: The **Real Estate** portfolio currently consists of Core and Non-Core Real Estate investments. The overall asset class structure has remained relatively conservative with regard to asset types and the use of financial leverage. Core Real Estate has historically been focused on diversified US markets, lower leverage, and higher occupancy rates, while Non-Core Real Estate investments allow for greater investment flexibility.

Diversified Hedge Funds: The **Diversified Hedge Funds** structure historically consisted of multi-Hedge Fund of Fund investments. In 2015, the portfolio began a transition to a core-satellite approach, utilizing a single Fund of Fund manager and satellite direct Hedge Funds. Initial funding was completed in July 2018 for a custom fund of one, consisting of a discretionary multi-strategy FoF portfolio and a non-discretionary portfolio of direct hedge funds managed by the Treasurer's Office. An increase in the use of direct Hedge Funds is anticipated to lower external management expenses and allow for greater control over the program.

Infrastructure: The **Infrastructure** portfolio consists of open-end core infrastructure funds investing in private infrastructure assets globally. The funds will invest in existing infrastructure assets across primarily OECD countries, which includes North America, Western Europe, and the developed countries of Asia Pacific.

Opportunistic: The **Opportunistic Investment** sleeve is currently comprised of a specialized investment fund and internally managed investment fund. Opportunistic investments are episodic in nature and are intended to capitalize on market dislocations or rare investment opportunities.

Preferred Stock: The **Preferred Stock** portfolio consists of a single, specialized preferred stock investment manager. The portfolio invests in a diversified portfolio of preferred securities including exchange-traded and over-the-counter preferreds and contingent convertibles (CoCos). The investment team seeks to take advantage of the various term structures of preferreds in order to optimize the yield and interest rate sensitivity of the portfolio.

MLPs: The **MLPs** portfolio consists of two portfolios with a specialized investment manager. The passive strategy is designed to replicate the market index, whereas the active strategy investment objective is to deliver both high yield and stable growth through the disciplined application of its fundamental bottom-up analysis as well as its trading strategies and investments in MLP and energy infrastructure assets.

Fixed Income: The **Fixed Income** portfolio employs a core-satellite approach. Serving as “the anchor” to the portfolio, Core Fixed Income aims to preserve capital, by providing relatively “safe” investments and stable income. Core Fixed Income has disaggregated segments comprised of investment grade corporate, MBS, and government. The Internally Managed Portfolio also provides liquidity and safety of capital. The satellite portfolios serve as dedicated specialists. Bank Loans provide diversification from traditional fixed income investments and the potential for enhanced return. Investments in Emerging Market Debt diversify US Dollar exposure and provide opportunities to capitalize on global growth trends. Opportunistic Fixed Income is employed to capitalize on market dislocations, such as European Debt.

INDEX GLOSSARY

MSCI ACW: The **MSCI All Country World 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 index consists of the 23 developed countries that make up the MSCI World Index as well as the following emerging market countries: *Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates.*

Russell 3000: The **Russell 3000 Index** is a market-capitalization weighted index of 3,000 widely held equity securities designed to measure performance of the entire US stock market.

State Street All Cap Custom Index: The **State Street All Cap Custom Index** consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter.

S&P 500: The **S&P 500 Index (Cap Wtd)** is a commonly recognized, market-capitalization weighted index of 500 widely held equity securities designed to measure broad US equity performance.

All Cap US Equity Custom Index: The **All Cap US Equity Custom Index** consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter.

Russell 2000: The **Russell 2000 Index** measures the performance of the small-cap segment of the US equity market. It includes approximately 2,000 of the smallest securities by market cap from the Russell 3000 Index.

International Equity Custom Index: The **International Equity Custom Index** consists of the MSCI EAFE Index through July 2010 and the MSCI ACW Ex US Index thereafter.

MSCI EAFE: The **MSCI EAFE (Europe, Australasia, Far East) Index** is designed to measure equity market performance of 21 developed countries, excluding the US & Canada: *Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.*

MSCI ACW Ex US: The **MSCI ACW (All Country World) Ex US Index** consists of large cap and mid cap representation within the same countries that comprise the MSCI ACW Index, excluding the United States.

MSCI ACW Ex US IM: The **MSCI ACW (All Country World) Ex US Investable Market Index** consists of large cap, mid cap, and small cap representation within the same countries that comprise the MSCI ACW Index, excluding the United States.

S&P US Preferred Stock: The **S&P US Preferred Stock Index** covers the US market of capital stock that pays dividends at a specified rate and has a preference over common stock in the payment of dividends and the liquidation of assets.

Preferred Stock Custom Index: The **Preferred Stock Custom Index** consists of S&P U.S. Preferred Stock Index through 06/30/2021, and 60% ICE BofAML US IG Inst Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index thereafter.

S&P MLP: The **S&P MLP Index** is a float-adjusted, cap-weighted index of energy MLPs and publicly traded limited liability companies, which have a similar legal structure to MLPs and share the same tax benefits. Constituents must have a minimum float-adjusted market cap of USD 300 million.

MLP Custom Index: The **MLP Custom Index** consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter.

Alerian MLP Index: The **Alerian MLP Index** is an index of energy infrastructure Master Limited Partnerships (MLPs). It is a capped, float-adjusted, capitalization-weighted index, whose constituents represent approximately 85% of the total float-adjusted market capitalization.

Alerian Midstream Energy Index: The **Alerian Midstream Energy Index** is an index of energy infrastructure Master Limited Partnerships (MLPs), whose constituents earn the majority of their cash flow from midstream activities involving energy commodities.

NCREIF ODCE: The **NCREIF ODCE (Open End Diversified Core) Index** is an index of investment returns reporting on both a historical and current basis the results of 38 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NCREIF ODCE Index is capitalization-weighted and performance is time-weighted.

NCREIF Property: The **NCREIF Property Index** prepared by the National Council of Real Estate Investment Fiduciaries is a quarterly time series composite return measure for over 6,000 individual commercial real estate properties acquired in the private market for investment purposes. Total performance represents returns from appreciation and income, and includes multi-family, office, retail, and industrial properties.

HFRI FOF Comp Index: The **HFRI FOF (Fund of Funds) Comp Index** average is created by Hedge Fund Research, Inc. and contains over 800 funds of hedge funds that are each invested in multiple investment strategies.

Bloomberg US Agg Bond: The **Bloomberg US Aggregate Bond Index** covers the US dollar-denominated, investment-grade, fixed-rate, taxable bond market of SEC-registered securities: US Treasury and agency bonds, domestic corporate debt, and mortgage-backed securities.

Bloomberg US Agg Int Index: The **Bloomberg US Aggregate Intermediate Index** covers the subsection of the Bloomberg US Aggregate Bond Index with remaining maturities between one and ten years.

PIMCO Custom Index: The **PIMCO Custom Index** consists of the Bloomberg US Agg Bond Index through February 2018, the Bloomberg US Agg Int Index through June 2019, the Bloomberg US Agg Bond Index through 03/26/2020, account performance from 03/27/2020 through 04/03/2020, the BB US Agg Index through 11/29/21, account performance from 11/29/21 through 12/07/21, and the Bloomberg US Agg Bond Index through 06/30/2022, account performance on 07/01/2022, and the Bloomberg US Agg Bond Index thereafter.

Payden & Rygel Custom Index: The **Payden & Rygel Custom Index** consists of the Bloomberg US Corp Inv Grade Index through 03/25/2020, account performance from 03/26/2020 through 03/31/2020, and Bloomberg US Corp Inv Grade Index thereafter.

Internal Intermediate Govt Fixed Income Portfolio Index: The **Internal Intermediate Govt Fixed Income Portfolio Index** currently consists of the Bloomberg US Treasury Index. November 2019 performance consists of the Internal Intermediate Govt Fixed Income Portfolio. Prior to November 2019, the index consists of Bloomberg US Gov't Int Term Bond Index. Prior to December 2009, the index consisted of the Bloomberg US Gov't Crdt Bond Index.

S&P/LSTA Leveraged Loan: The **S&P/LSTA Leveraged Loan Index** reflects the market-weighted performance of institutional leveraged loans in the US loan market.

Bank Loans Custom Index: The **Bank Loans Custom Index** consists of S&P LSTA Lvkd Loan Index through 06/30/2021, and the S&P LSTA US Lvkd Loan 100 Index thereafter.

CS Western European Hi Yld: The **Credit Suisse Western European High Yield Index** is designed to mirror the investable universe of the Western European high yield debt market. The index includes issues denominated in \$US and Western European currencies.

EMD Custom Index: The **EMD Custom Index** consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvf'd Index, 1/3 JPM CEMBI Brd Dvf'd Index, and 1/3 JPM EMBI Gbl Dvf'd Index thereafter.

JP Morgan EMB (JEMB) Hard Currency/Local Currency 50/50: The **JP Morgan EMB (JEMB) Hard Currency/Local Currency 50/50** consists of 50% JPM GBI-EM Gbl Dvf'd Index, 25% JPM CEMBI Brd Dvf'd Index, and 25% JPM EMBI Gbl Dvf'd Index.

Goldman Sachs Index: The **Goldman Sachs Index** consists of JPM CEMBI Brd Dvf'd Index through 11/22/2020, account performance from 11/23/2020 through 11/30/2020, and the JPM CEMBI Brd Dvf'd Index thereafter.

JP Morgan GBI-EM Gbl Dvf'd: The **JP Morgan GBI-EM Global Diversified Total Return Index (Unhedged)** is a global emerging markets index that consists of regularly traded, liquid fixed-rate, domestic currency government bonds.

JP Morgan CEMBI Broad Diversified Index: The **JP Morgan CEMBI Broad Diversified Index** is an index that is comprised of the corporate segment of emerging markets debt.

JP Morgan Emerging Markets Bond Global Diversified Index: The **JP Morgan Global Diversified Index** is an index comprised of the hard currency segment of emerging markets debt.

Bloomberg US Govt/Credit: Long Trm Bond: The **Bloomberg US Gov't/Credit Long Term Bond Index** covers the non-securitized component of the US Aggregate Index, with maturities of 10 years or more. It includes investment grade, US dollar-denominated, fixed-rate Treasuries, government-related and corporate securities.

Bloomberg US Govt: Long Trm Bond: The **Bloomberg US Gov't Long Term Bond Index** covers public US government obligations with remaining maturities of ten years or more.

Bloomberg US Credit: Long Trm Bond: The **Bloomberg US Credit Long Term Bond Index** covers public US investment grade corporate bonds with remaining maturities of ten years or more.

Bloomberg US Govt: Int Trm Bond: The **Bloomberg US Gov't Intermediate Term Bond Index** covers public US government obligations with remaining maturities between one and ten years.

Bloomberg US Corp Int Trm Bond: The **Bloomberg US Corporate Intermediate Term Bond Index** covers US investment grade corporate bonds with remaining maturities between one and ten years.

Bloomberg US Gov't/Credit 1-3 Yr Bond Index: The **Bloomberg US Gov't/Credit 1-3 Year Bond Index** covers all medium and larger issues of U.S. government, investment-grade corporate, and investment-grade international dollar-denominated bonds that have maturities of between one and three years and are publicly issued.

Bloomberg US Gov't 1-3 Yr Bond Index: The **Bloomberg US Gov't 1-3 Year Bond Index** covers public US government obligations with remaining maturities between one and three years.

Bloomberg US Credit 1-3 Yr Bond Index: The **Bloomberg US Credit 1-3 Year Bond Index** covers

public investment-grade corporate, and investment-grade international dollar-denominated bonds that have maturities of between one and three years.

Bloomberg US MBS Index: The **Bloomberg US MBS Index** covers the public U.S. mortgage backed securities market.

Bloomberg US Corp Inv Grade Index: The **Bloomberg US Corp Inv Grade Index** covers the public U.S. investment grade corporate bond market.

Low Duration Fixed Income Custom Index: The **Low Duration Fixed Income Custom Index** consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.

Transition Fixed Income Custom Index: The **Transition Fixed Income Custom Index** consists of 50% JPM CLOIE IG Idx, 40% BB 1 – 3 Yr Crdt, and 10% ICE BofA 0-2 Yr Dur BB-B Index.

PIMCO Low Duration Custom Index: The **PIMCO Low Duration Custom Index** consists of 50% JPM CLOIE IG Idx, 40% BB 1 – 3 Yr Crdt, and 10% ICE BofA 0-2 Yr Dur BB-B Index through 11/30/2021, account performance on 12/1/2021-12/13/2021, and 50% JPM CLOIE IG Idx, 40% BB 1 – 3 Yr Crdt, and 10% ICE BofA 0-2 Yr Dur BB-B Index thereafter.

Opportunistic Investments Index: The **Opportunistic Investments Index** is the weighted average of the permanent funds' target allocation indices, excluding the opportunistic allocation.

JP Morgan Cash Custom Index: The **JP Morgan Cash Custom Index** is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.

JP Morgan Blended Index: The **JP Morgan Blended Index** consists of an equal-weighted allocation to the ICE BofAML 1-3 Year US Treasury Index, ICE BofAML 1-3 Year Agencies Index, and ICE BofAML 0-3 Year Weighted Average Life Mortgage Index.

Total Fund



Wyoming State Treasurer's Office
Asset Allocation, Performance & Schedule of Investable Assets

As of December 31, 2022

	Market Value (\$)	%	Performance (%) FYTD
Total Fund	24,483,477,157	100.00	1.38
All Cap US Equity Composite	1,734,183,329	7.08	2.53
State Street All Cap	1,628,262,954	6.65	2.31
Internal Domestic Equity Quantamental	31,226	0.00	6.69
Internal Domestic Equity Quantitative	82,632,857	0.34	4.09
SPDR S&P 500 ETF Trust	23,256,292	0.09	N/A
UW Portfolio Mgmt Program	1,713,044	0.01	1.12
Small Cap US Equity Composite	411,911,501	1.68	8.07
Van Berkorn	209,083,273	0.85	9.92
BlackRock Small Cap	65,735,460	0.27	5.89
Internal Small Cap Equity Quantamental	51,160,829	0.21	8.67
Internal Small Cap Equity Quantitative	85,931,939	0.35	4.18
Int'l Equity	3,019,570,158	12.33	3.99
Northern Trust	1,411,276,551	5.76	2.91
Arrowstreet	924,943,837	3.78	4.21
Harding Loevner	625,069,673	2.55	5.63
Vanguard FTSE All World Ex US ETF	58,280,097	0.24	N/A
Preferred Stock	309,576,639	1.26	0.79
Cohen & Steers Preferred Stock	309,576,639	1.26	0.79
MLPs Composite	1,013,519,134	4.14	13.79
Harvest Fund Advisors	545,525,935	2.23	14.45
Harvest Fund Advisors Passive	467,993,199	1.91	13.22
Private Equity Composite	1,104,272,828	4.51	6.15
Access Venture Partners II	483,711	0.00	N/A
Cheyenne Equity Capital Fund, L.P.	108,211,019	0.44	N/A
Hamilton Lane Nowood Fund, L.P.	126,496,902	0.52	N/A
Neuberger Berman Sauger Fund, L.P.	152,598,100	0.62	N/A
BlackRock LTPC, L.P.	488,423,491	1.99	N/A
Valor Equity Partners V LP	62,033,436	0.25	N/A
GTCR Fund XIII	49,333,025	0.20	N/A
Veritas Capital Vantage Fund	12,615,704	0.05	N/A
Veritas Capital Fund VIII	11,981,455	0.05	N/A
StepStone Fund V	22,318,266	0.09	N/A
Nautic Partners X	16,339,179	0.07	N/A
Dragoneer Opp Fund VI	3,169,513	0.01	N/A
Accel KKR Growth Partners IV	5,641,528	0.02	N/A
Morgan Stanley Ashbridge	44,627,500	0.18	N/A
Private Credit Composite	109,148,455	0.45	N/A
BlackRock GCO Fund II LP	43,745,153	0.18	N/A
Atalaya Evergreen Fund	65,403,302	0.27	N/A
Core Real Estate	1,617,068,445	6.60	-4.63
Clarion Lion	994,227,964	4.06	-4.84
UBS Trumbull	184,409,784	0.75	-5.53
MS Prime	438,430,697	1.79	-3.75

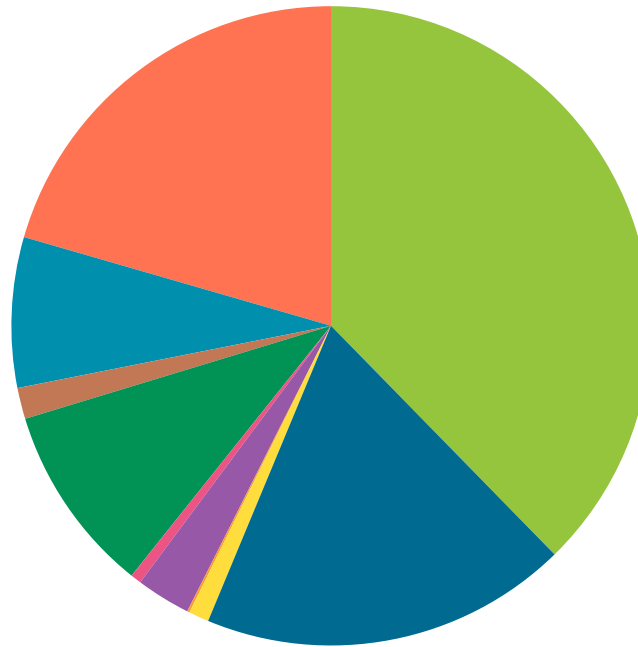
	Market Value (\$)	%	Performance (%) FYTD
Non-Core Real Estate Composite	639,646,570	2.61	-0.79
SC Capital Partners	109,131,093	0.45	N/A
Realterm Logistics Income Fund LP	324,337,094	1.32	N/A
M&G	1,596,701	0.01	N/A
Northwood	196,288,589	0.80	N/A
WestRiver	8,293,093	0.03	N/A
Infrastructure Composite	147,709,997	0.60	0.83
Macquarie Infrastructure	122,931,094	0.50	2.49
MGIF Co-Investment 3	24,778,903	0.10	N/A
Diversified Hedge Funds Composite	1,117,934,265	4.57	1.02
PAAMCO - Jackalope Fund	2,843,101	0.01	N/A
Grosvenor Diversified Hedge Funds	447,064,702	1.83	2.19
Internal Diversified Hedge Funds	668,026,462	2.73	0.27
Core Fixed Income	3,305,723,835	13.50	-3.16
Internal Intermediate Gov't Fixed Income	1,111,870,890	4.54	-3.60
Payden & Rygel IGC	563,129,435	2.30	-2.10
JP Morgan MBS	749,890,657	3.06	-3.05
IShares Core US Agg Bond ETF	9,744	0.00	N/A
PIMCO	880,823,108	3.60	-2.95
Laddered Treasury Composite	3,813,501,993	15.58	-0.03
Internal Ladder Portfolio	3,813,501,993	15.58	-0.03
Bank Loans Composite	1,531,874,235	6.26	3.95
Credit Suisse	387,973,098	1.58	3.76
Octagon	6,638,623	0.03	4.69
Octagon SMA	664,349,252	2.71	N/A
KKR	472,913,262	1.93	3.58
Emerging Market Debt Composite	956,999,395	3.91	4.88
Global Evolution	115,231,089	0.47	4.54
Global Evolution Hard	137,541,217	0.56	5.55
Goldman Sachs	196,473,219	0.80	4.33
Eaton Vance	190,589,066	0.78	7.51
Finisterre	230,971,001	0.94	3.09
Wellington	86,193,802	0.35	3.88
Long Duration Fixed Income Composite	645,089,820	2.63	-7.06
Internal Long Duration Fixed Income	288,204,507	1.18	-10.30
Metlife	356,885,313	1.46	-4.13
Low Duration Fixed Income	654,212,034	2.67	-0.35
Internal Low Duration Fixed Income	654,212,034	2.67	-0.35
Transition Low Duration Composite	683,258,087	2.79	2.19
PIMCO Transition Low Duration	683,258,087	2.79	2.19
Grosvenor Silvery Lupine Fund	12,969,822	0.05	-12.06
Opportunistic Investments Composite	101,509,771	0.41	3.22
Grosvenor Opportunistic Class D	101,471,349	0.41	3.23
Wyoming Internal Opportunistic	38,422	0.00	N/A
Cash Equivalents	1,331,901,717	5.44	1.37
Public Purpose Investments	220,182,084	0.90	N/A

Schedule of Investable Assets - Total Fund Composite Ex Public Purpose Investments

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	Unit Value
FYTD	23,546,842,812	411,323,726	305,128,534	24,263,295,073	101.28

Allocations may not sum up to 100% exactly due to rounding. Performance shown is net of fees and excludes Public Purpose Investments (PPIs) and operational cash. Market value shown for Public Purpose Investments (PPIs) is as of 12/31/2022. Investment manager fees are accounted for on a quarterly basis. Wyoming State Treasurer's Office fiscal year ends on June 30th. Fiscal year begins 7/1/2022.

December 31, 2022 : \$24,483,477,157

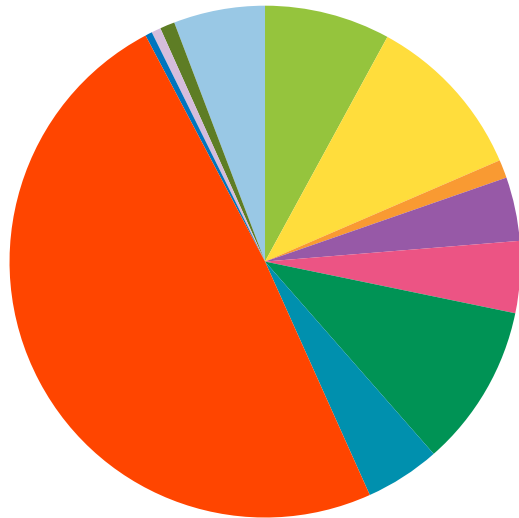


	Market Value (\$)	Allocation (%)
Permanent Mineral Trust	9,224,910,590	37.68
Common School PLF	4,554,175,053	18.60
Permanent Land Fund	251,223,884	1.03
University Permanent Land Fund	28,740,938	0.12
Hathaway Scholarship	675,281,950	2.76
Higher Education	132,506,830	0.54
Workers Compensation Fund	2,346,360,840	9.58
Pool A	386,030,588	1.58
LSRA	1,861,191,761	7.60
State Agency Pool	5,023,054,723	20.52

Allocations shown may not sum up to 100% exactly due to rounding.

Asset Allocation by Asset Class - Prior Quarter

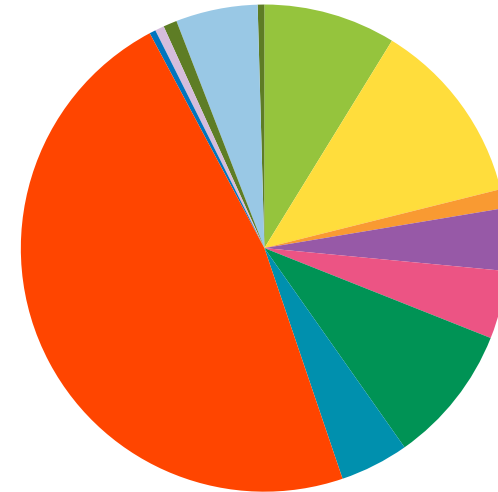
September 30, 2022 : \$23,323,849,257



	Market Value (\$)	Allocation (%)
US Equity	1,853,024,466	7.94
International Equity	2,468,023,442	10.58
Preferred Stock	267,923,762	1.15
MLPs	939,368,708	4.03
Private Equity	1,056,911,106	4.53
Real Estate	2,401,312,331	10.30
Diversified Hedge Funds	1,107,471,290	4.75
Fixed Income	11,421,074,592	48.97
Opportunistic Investments	102,510,925	0.44
Infrastructure	137,687,278	0.59
Public Purpose Investments	218,074,071	0.93
Cash	1,350,467,285	5.79

Asset Allocation by Asset Class - Current Quarter

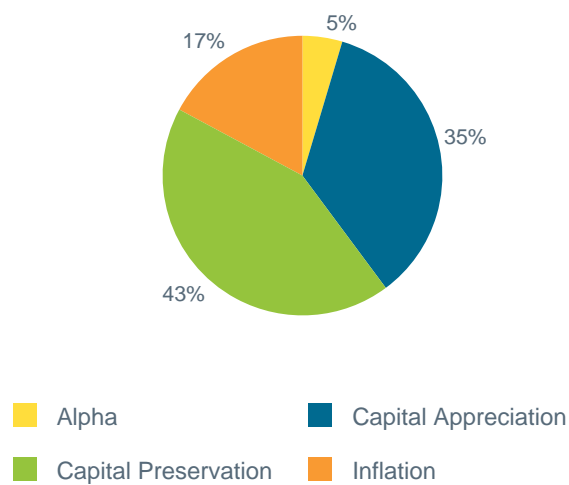
December 31, 2022 : \$24,483,477,157



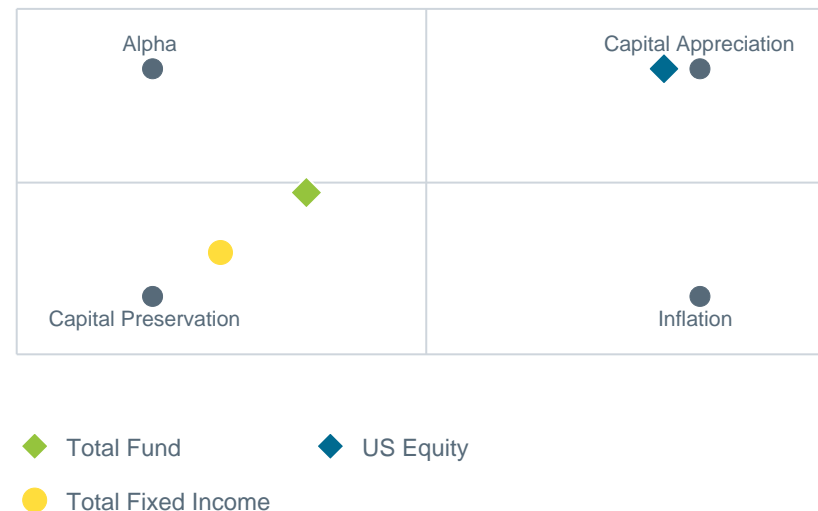
	Market Value (\$)	Allocation (%)
US Equity	2,147,807,874	8.77
International Equity	3,019,570,158	12.33
Preferred Stock	309,576,639	1.26
MLPs	1,013,519,134	4.14
Private Equity	1,104,272,828	4.51
Real Estate	2,256,715,015	9.22
Diversified Hedge Funds	1,117,934,265	4.57
Fixed Income	11,603,629,220	47.39
Opportunistic Investments	101,509,771	0.41
Infrastructure	147,709,997	0.60
Public Purpose Investments	220,182,084	0.90
Cash	1,331,901,717	5.44
Private Credit	109,148,455	0.45

Allocations shown may not sum up to 100% exactly due to rounding.

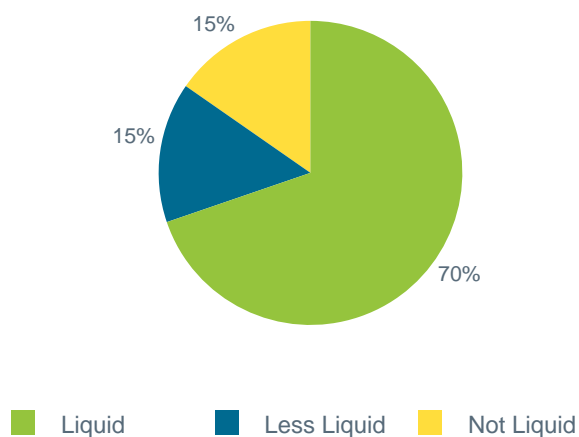
Asset Allocation by Theme



Thematic Analysis - January 1, 1998 to December 31, 2022



Asset Allocation by Liquidity



RVK Liquidity Rating

72

Correlation Matrix - 10 Years

	A	B	C	D
A	1.00			
B	0.53	1.00		
C	-0.15	-0.01	1.00	
D	0.47	0.78	0.11	1.00

A = HFRI EH: Equity Market Neutral Index (Alpha)
 B = MSCI ACW Index (USD) (Gross) (Capital Appreciation)
 C = Bloomberg US Gov't Bond Index (Capital Preservation)
 D = Real Return Custom Index (Inflation)

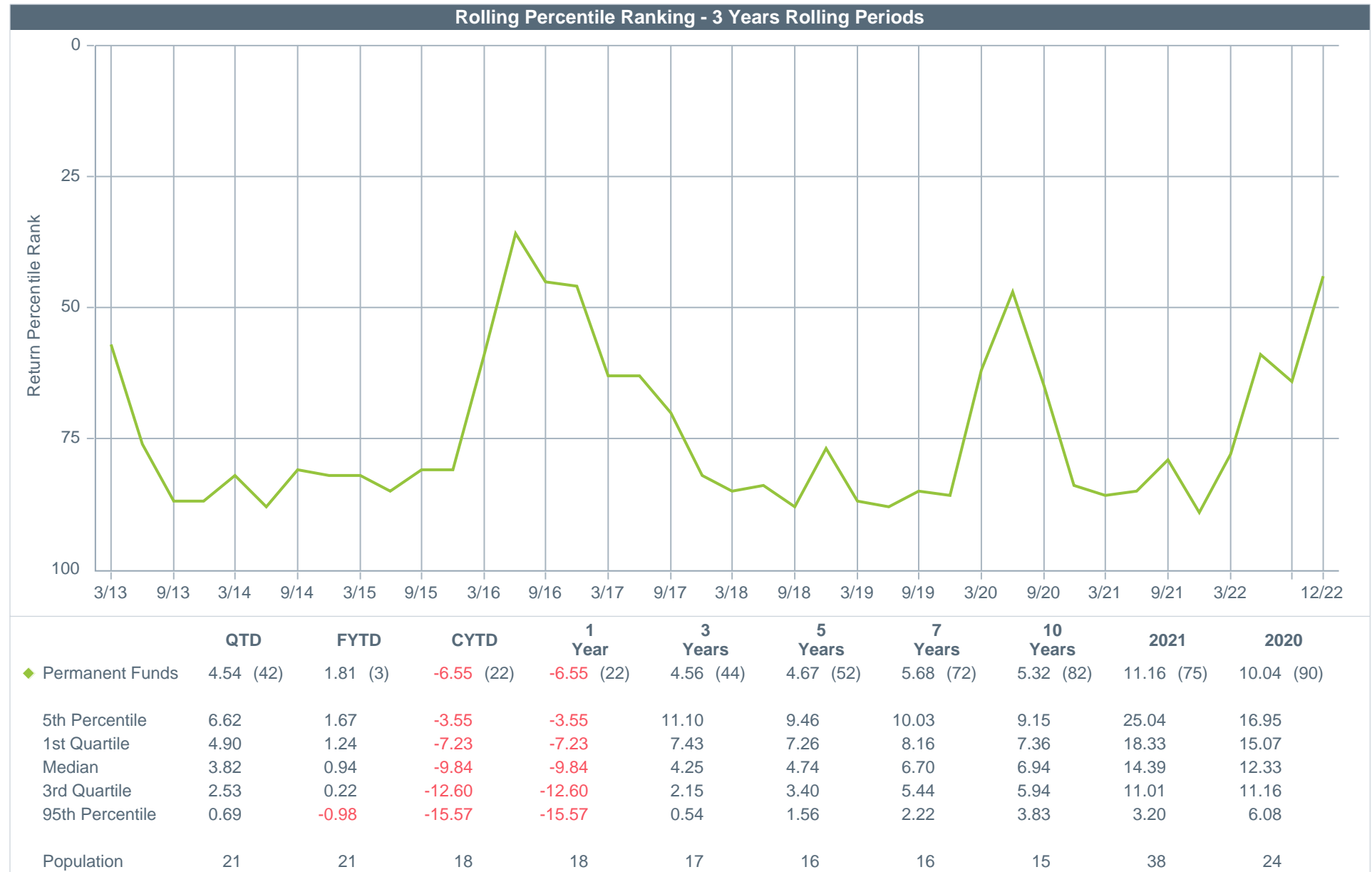
Asset Allocation by Theme is based on dedicated manager allocations; as such, thematic allocations are approximations. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating. Please see the Glossary for additional information regarding these metrics. Allocations may not sum to 100% exactly due to rounding.

Wyoming State Treasurer's Office
All Endowment & Foundation > \$1B-Total Fund
Plan Sponsor Peer Group Analysis

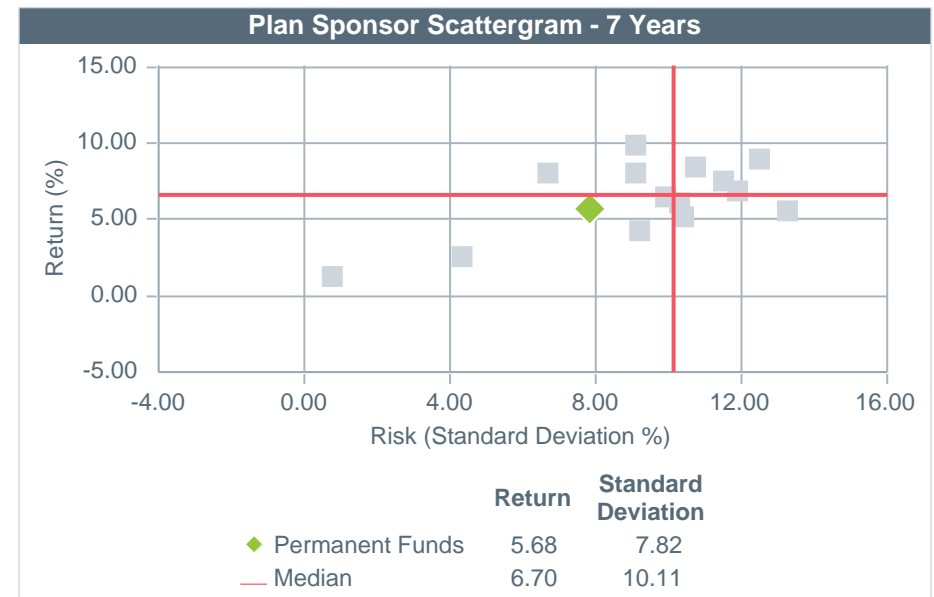
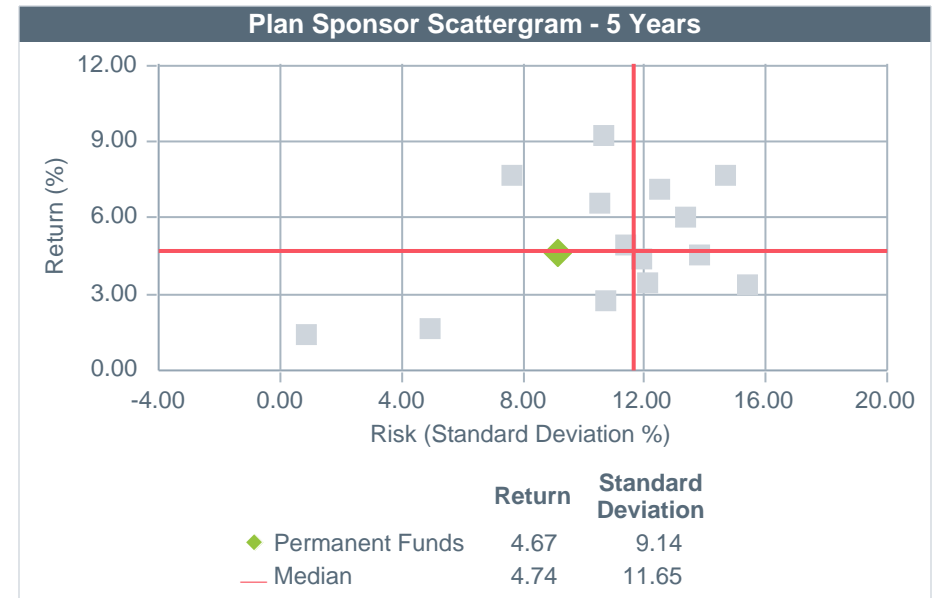
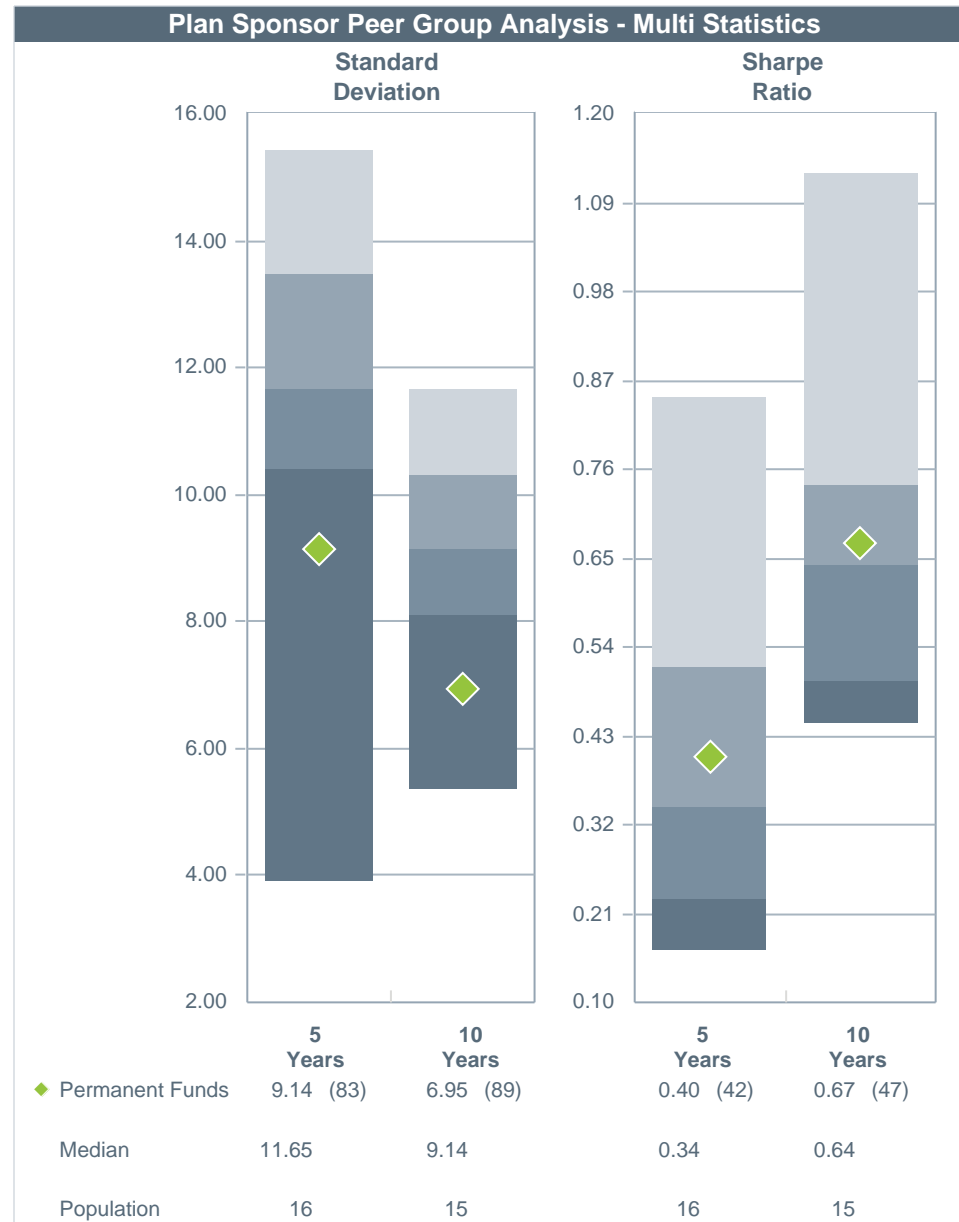
As of December 31, 2022



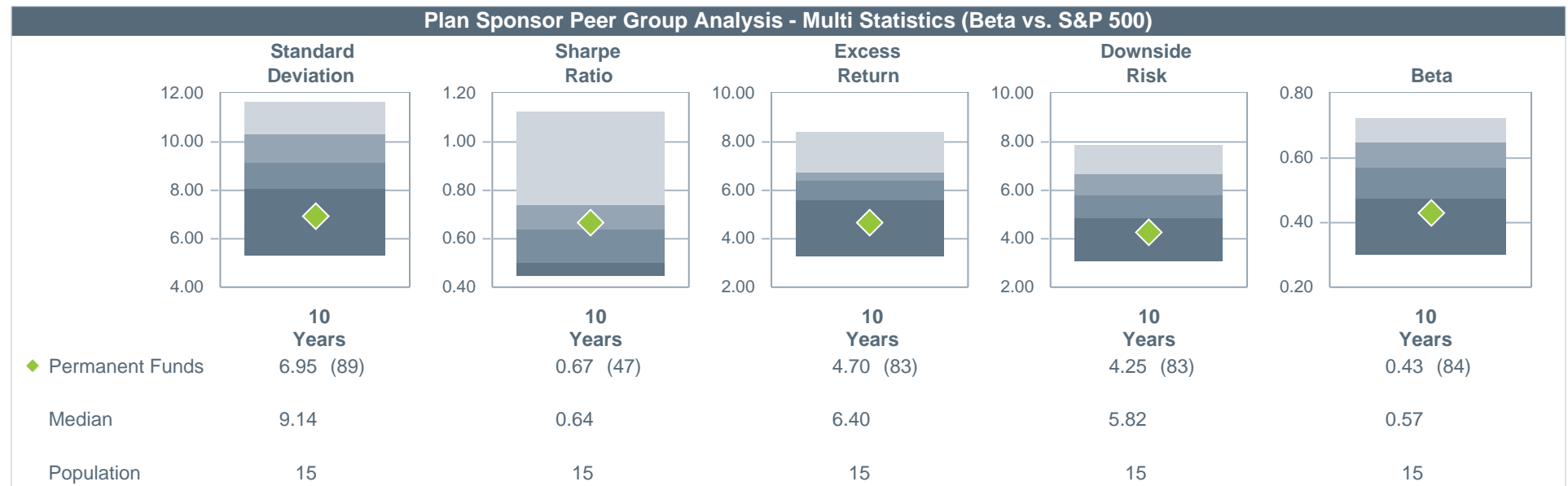
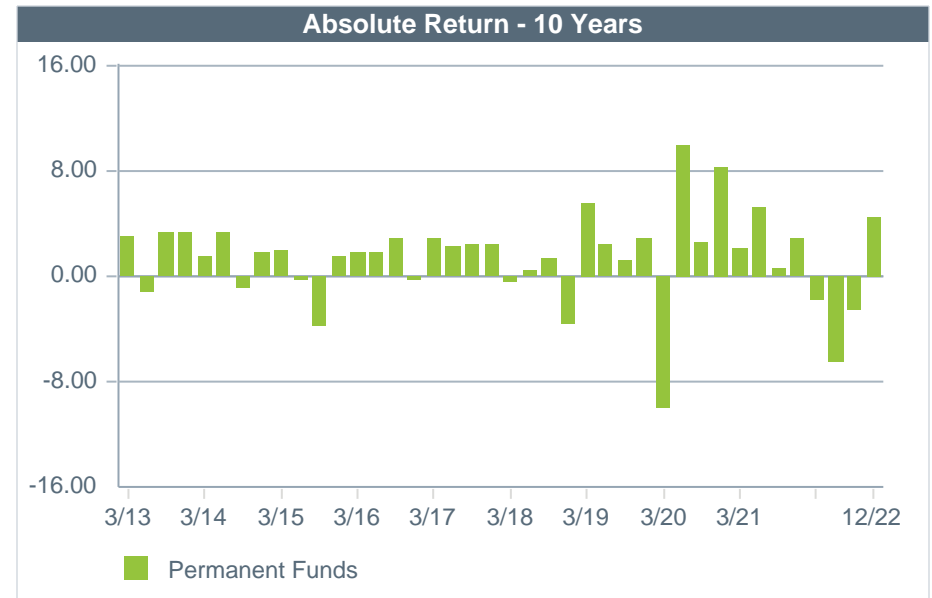
Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.
Wyoming State Treasurer's Office fiscal year ends on June 30th.



Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.
Wyoming State Treasurer's Office fiscal year ends on June 30th.



Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.



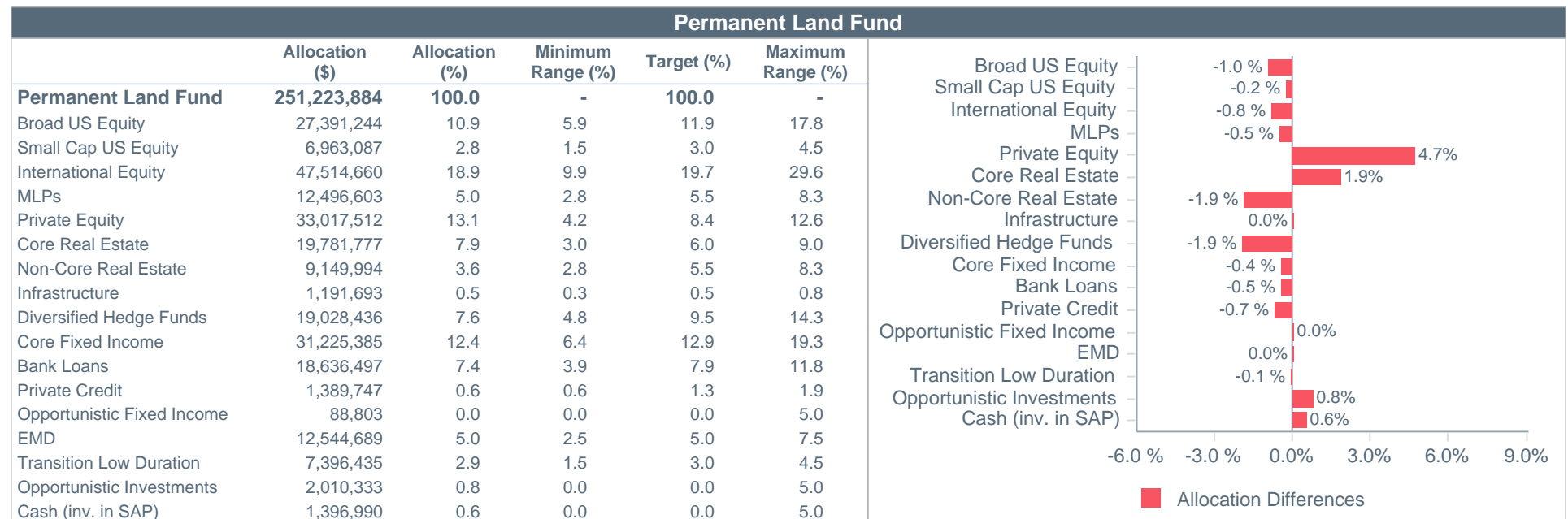
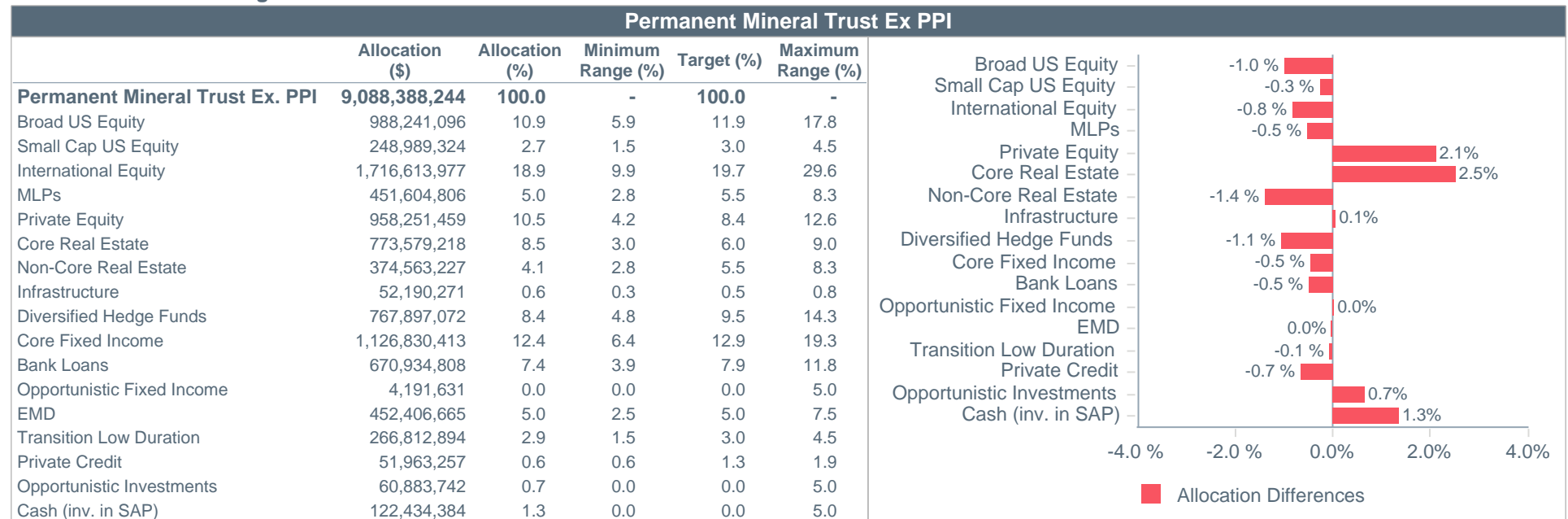
Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.

Investment Profile					Target Allocation																	
<p>Fund Type: Permanent Fund</p> <p>Main Objective: Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity.</p> <p>Primary Investment Goals: Capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals.</p> <p>Long-Term Target Equity Allocation: 73%</p> <p>Spending Policy</p> <ul style="list-style-type: none">• Permanent Mineral Trust Fund: 5% of the five-year trailing average market value, calculated on the first day of the fiscal year. In fiscal year 2023, the spending rate will be 4.75%. In fiscal year 2024 and thereafter, the spending rate will be 4.5%.• Hathaway Scholarship: The amount necessary to fully fund scholarships awarded under W.S. 21-16-1301 <i>et seq.</i>					Minimum Range (%)	Target (%)		Maximum Range (%)														
					Permanent Mineral Trust				-	100.00		-										
					Broad US Equity				5.93	11.86		17.79										
					Small Cap US Equity				1.50	3.00		4.50										
					International Equity				9.86	19.71		29.57										
					MLPs				2.75	5.50		8.25										
					Private Equity				4.21	8.43		12.64										
					Core Real Estate				3.00	6.00		9.00										
					Non-Core Real Estate				2.75	5.50		8.25										
					Infrastructure				0.25	0.50		0.75										
					Diversified Hedge Funds				4.75	9.50		14.25										
					Core Fixed Income				6.44	12.88		19.31										
					Bank Loans				3.94	7.88		11.81										
					Opportunistic Fixed Income				0.00	0.00		5.00										
					EMD				2.50	5.00		7.50										
					Transition Low Duration				1.50	3.00		4.50										
					Private Credit				0.63	1.25		1.88										
					Thematic Allocation					Risk Metrics												
					<table><thead><tr><th>Thematic Allocation</th><th>Percentage</th></tr></thead><tbody><tr><td>Alpha</td><td>8%</td></tr><tr><td>Capital Appreciation</td><td>53%</td></tr><tr><td>Capital Preservation</td><td>18%</td></tr><tr><td>Inflation</td><td>21%</td></tr></tbody></table>					Thematic Allocation	Percentage	Alpha	8%	Capital Appreciation	53%	Capital Preservation	18%	Inflation	21%	5 Years		
Thematic Allocation	Percentage																					
Alpha	8%																					
Capital Appreciation	53%																					
Capital Preservation	18%																					
Inflation	21%																					
	PMTF	PLF	UPLF	Hath	PMTF	PLF	UPLF	Hath														
Sharpe Ratio	0.4	0.5	0.4	0.5	0.7	0.7	0.7	0.7														
Standard Deviation	10.0	9.7	10.9	9.8	7.6	7.3	8.2	7.3														
Beta	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5														
Comparative Performance																						
	Allocation	Performance (%)																				
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years													
Permanent Mineral Trust	9,224,910,590	5.0	2.4	-6.0	-6.0	5.5	5.2	6.2	5.8													
PMTF - Total Fund Index		5.1	1.9	-7.1	-7.1	4.8	4.8	5.8	5.6													
Difference		-0.1	0.5	1.1	1.1	0.7	0.4	0.4	0.2													
Permanent Land Fund	251,223,884	5.2	2.8	-5.4	-5.4	5.7	5.3	6.2	5.7													
PLF - Total Fund Index		5.1	1.9	-7.1	-7.1	4.8	4.8	5.7	5.5													
Difference		0.1	0.9	1.7	1.7	0.9	0.5	0.5	0.2													
University Permanent Land Fund	28,740,938	5.0	2.7	-5.5	-5.5	5.9	5.5	6.6	6.0													
UPLF - Total Fund Index		5.1	1.9	-7.1	-7.1	4.8	4.9	6.1	5.8													
Difference		-0.1	0.8	1.6	1.6	1.1	0.6	0.5	0.2													
Hathaway Scholarship	675,281,950	5.0	3.4	-4.0	-4.0	6.3	5.6	6.2	5.5													
Hathaway - Total Fund Index		5.1	1.9	-7.1	-7.1	4.8	4.7	5.5	5.2													
Difference		-0.1	1.5	3.1	3.1	1.5	0.9	0.7	0.3													

Performance shown is net of fees and annualized for periods greater than one year. Wyoming State Treasurer's Office fiscal year ends on June 30th. Beta is calculated relative to the MSCI ACW Index (Net). Calculations are based on quarterly periodicity. Allocations shown may not sum up to 100% exactly due to rounding. Thematic Allocation shown represents the Permanent Mineral Trust. Asset class targets shown represent 09/01/2022 interim targets.

Wyoming State Treasurer's Office
Permanent Funds - Total Return Focus
Asset Allocation vs. Target

As of December 31, 2022



Allocations shown may not sum up to 100% exactly due to rounding. Market value shown for PMTF excludes Public Purpose Investments (PPIs). Asset class targets shown represent 09/01/2022 interim targets.

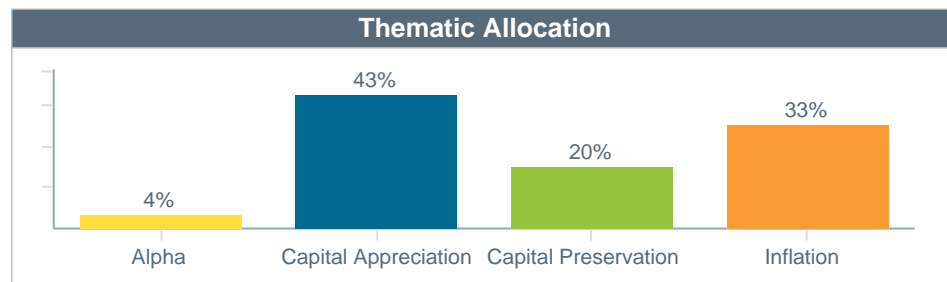
Wyoming State Treasurer's Office
Permanent Funds - Total Return Focus
Asset Allocation vs. Target

As of December 31, 2022



Allocations shown may not sum up to 100% exactly due to rounding. Asset class targets shown represent 09/01/2022 interim targets.

Investment Profile
Fund Type: Permanent Fund Main Objective: Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity. Primary Investment Goals: Income generation, capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals. Long-Term Target Equity Allocation: 62%
Spending Policy <ul style="list-style-type: none"> • Common School Permanent Land Fund: 5% of the five-year trailing average market value, calculated on the first day of the fiscal year. In fiscal year 2025, the spending rate will be 4.75%. In fiscal year 2026 and thereafter, the spending rate will be 4.5%. • Higher Education: 4.75% of the five-year trailing average market value, calculated on the first day of the fiscal year.



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Common School Perm Land Fund	4,554,175,053	4.1	1.9	-4.8	-4.8	4.0	4.1	5.4	5.3
CSPLF - Total Fund Index		4.6	1.9	-5.7	-5.7	3.1	3.6	4.9	5.0
Difference		-0.5	0.0	0.9	0.9	0.9	0.5	0.5	0.3
Higher Education	132,506,830	4.2	2.4	-4.6	-4.6	3.8	3.9	5.0	4.7
Higher Education - Total Fund Index		4.6	1.9	-5.7	-5.7	3.1	3.5	4.7	4.6
Difference		-0.4	0.5	1.1	1.1	0.7	0.4	0.3	0.1

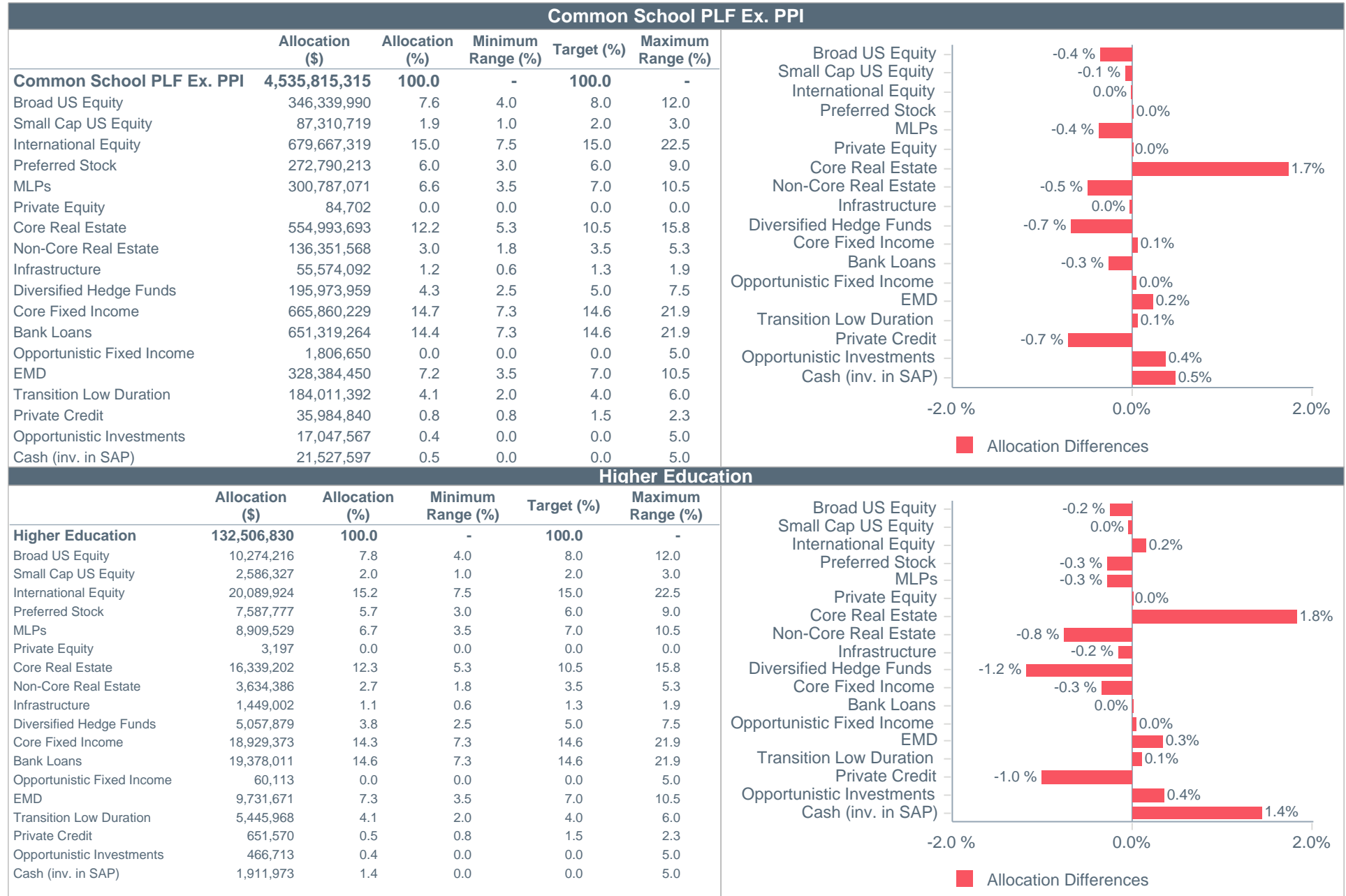
Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Common School PLF	-	100.00	-
Broad US Equity	4.00	8.00	12.00
Small Cap US Equity	1.00	2.00	3.00
International Equity	7.50	15.00	22.50
Preferred Stock	3.00	6.00	9.00
MLPs	3.50	7.00	10.50
Core Real Estate	5.25	10.50	15.75
Non-Core Real Estate	1.75	3.50	5.25
Infrastructure	0.63	1.25	1.88
Diversified Hedge Funds	2.50	5.00	7.50
Core Fixed Income	7.31	14.63	21.94
Bank Loans	7.31	14.63	21.94
Opportunistic Fixed Income	0.00	0.00	5.00
EMD	3.50	7.00	10.50
Transition Low Duration	2.00	4.00	6.00
Private Credit	0.75	1.50	2.25

	5 Years		10 Years	
	CSPLF	HiEd	CSPLF	HiEd
Sharpe Ratio	0.4	0.3	0.7	0.6
Standard Deviation	8.6	8.7	6.6	6.6
Beta	0.4	0.4	0.4	0.4

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Wyoming State Treasurer's Office
Permanent Funds - Income Focus
Asset Allocation vs. Target

As of December 31, 2022

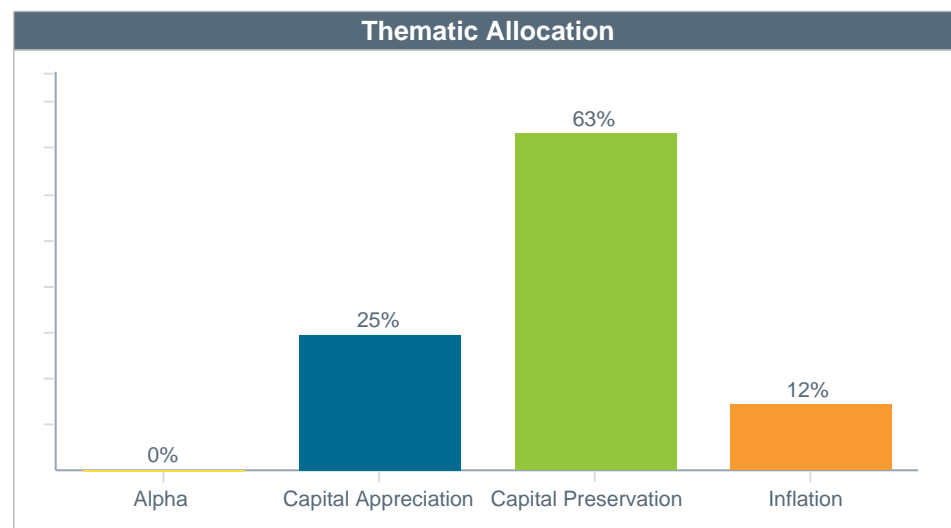


Allocations shown may not sum up to 100% exactly due to rounding. Market value shown for CSPLF excludes Public Purpose Investments (PPIs). Asset class targets shown represent 09/01/2022 interim targets.

Wyoming State Treasurer's Office
Permanent Funds - Workers' Compensation Fund

As of December 31, 2022

Investment Profile
Fund Type: Permanent Fund Main Objective: Provide a return that assures the Workers' Compensation Fund will be self-funding or nearly self-funding in order to substantially reduce or eliminate the need for employer contributions. Primary Investment Goals: Long-term return, safety of capital, yield and capital appreciation. Long-Term Target Equity Allocation: 34% Actuarial Discount Rate: 2.5%* Funded Status: >100%* Duration of Liabilities: 11.4 years*
*As of the most recent report.



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Workers' Compensation Fund	2,346,360,840	3.4	-1.3	-12.6	-12.6	1.5	3.3	4.2	3.8
WC - Total Fund Index		3.6	-1.6	-13.1	-13.1	0.5	2.8	3.7	3.6
Difference		-0.2	0.3	0.5	0.5	1.0	0.5	0.5	0.2

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Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Workers Compensation Fund	-	100.00	-
Broad US Equity	3.00	6.00	9.00
Small Cap US Equity	0.00	0.00	0.00
International Equity	4.50	9.00	13.50
MLPs	2.50	5.00	7.50
Core Real Estate	2.50	5.00	7.50
Non-Core Real Estate	2.00	4.00	6.00
Infrastructure	0.63	1.25	1.88
Liability Driven Fixed Income	28.00	56.00	84.00
Opportunistic Fixed Income	0.00	0.00	5.00
EMD	2.50	5.00	7.50
Transition Low Duration	3.75	7.50	11.25
Private Credit	0.63	1.25	1.88

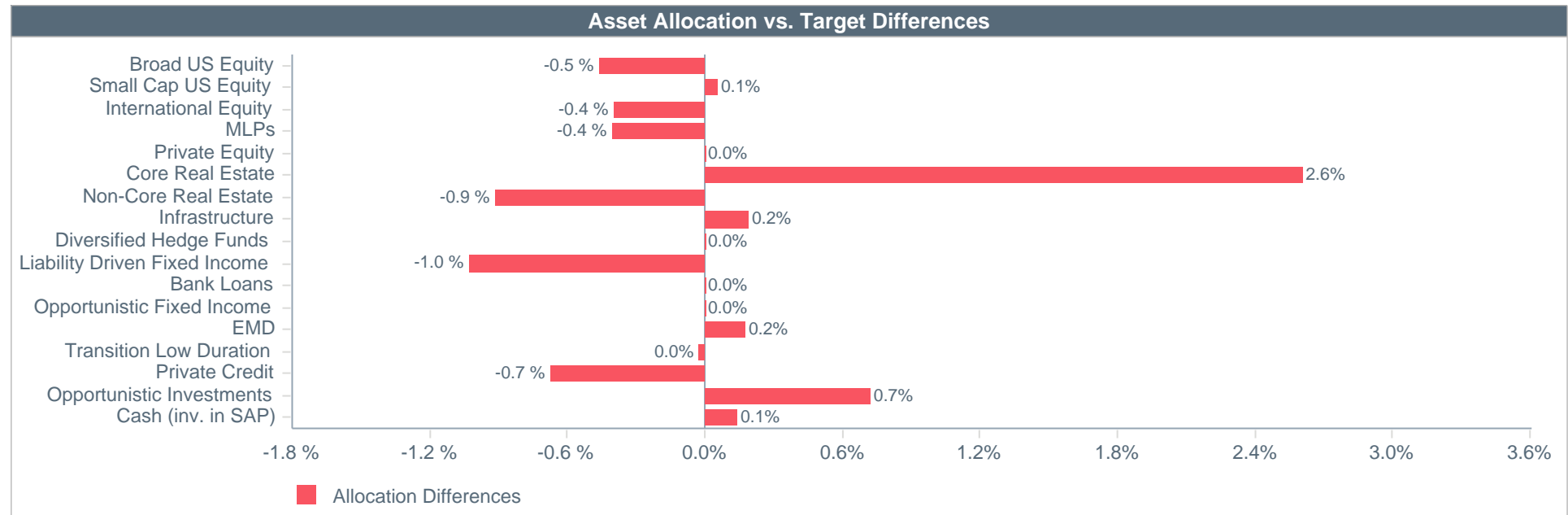
Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	N/A	6.2
Avg. Quality	N/A	Aa1/Aa2
Yield To Maturity (%)	N/A	4.7
Coupon Rate (%)	N/A	2.7

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	0.3	0.5
Standard Deviation	7.8	5.9
Beta	0.3	0.3

Wyoming State Treasurer's Office
Permanent Funds - Workers' Compensation Fund
Asset Allocation vs. Target

As of December 31, 2022

Asset Allocation vs. Target					
	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
Workers Compensation Fund	2,346,360,840	100.00	-	100.00	-
Broad US Equity	129,943,826	5.54	3.00	6.00	9.00
Small Cap US Equity	1,343,607	0.06	0.00	0.00	0.00
International Equity	201,800,604	8.60	4.50	9.00	13.50
MLPs	107,813,042	4.59	2.50	5.00	7.50
Private Equity	55,344	0.00	0.00	0.00	0.00
Core Real Estate	178,576,211	7.61	2.50	5.00	7.50
Non-Core Real Estate	72,457,377	3.09	2.00	4.00	6.00
Infrastructure	33,809,641	1.44	0.63	1.25	1.88
Diversified Hedge Funds	-	0.00	0.00	0.00	0.00
Liability Driven Fixed Income	1,289,883,137	54.97	28.00	56.00	84.00
Bank Loans	-	0.00	0.00	0.00	0.00
Opportunistic Fixed Income	12,305	0.00	0.00	0.00	5.00
EMD	121,478,604	5.18	2.50	5.00	7.50
Transition Low Duration	175,362,872	7.47	3.75	7.50	11.25
Private Credit	13,458,892	0.57	0.63	1.25	1.88
Opportunistic Investments	16,959,961	0.72	0.00	0.00	5.00
Cash (inv. in SAP)	3,405,418	0.15	0.00	0.00	5.00



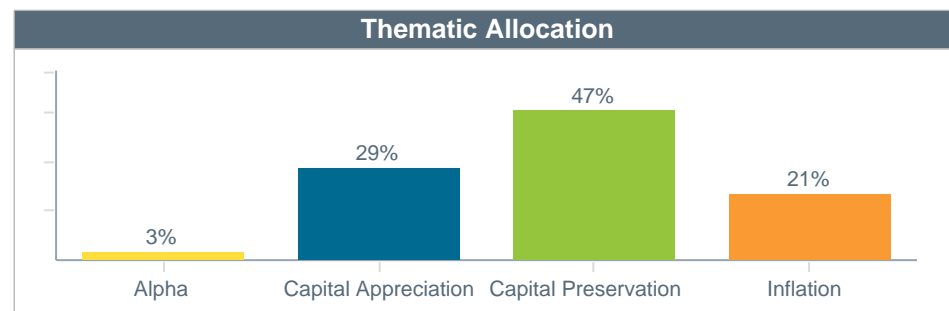
Allocations shown may not sum up to 100% exactly due to rounding. Asset class targets shown represent 09/01/2022 interim targets.

Wyoming State Treasurer's Office
Pool A Investment Account

As of December 31, 2022

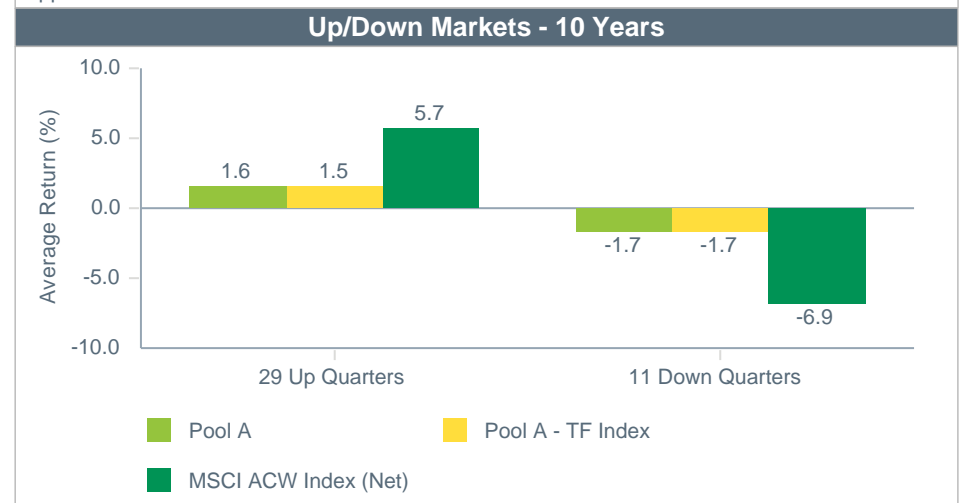
Investment Profile	
Fund Type: Non-Permanent Fund	
Main Objective: Provide a diverse array of securities including equities, while maintaining adequate liquidity, stability, and return on investment.	
Primary Investment Goal: Pool A is intended to be moderately liquid and safely invested but also be invested for return and growth.	
Target Equity Allocation: 50%	
Participating Funds:	
• Tobacco Settlement Trust Fund	
• Wildlife and Natural Resource Trust Account	
• Cultural Trust Fund	
• Public Television Matching Fund Account	
• Game and Fish Fund Trust Account	

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	0.3	0.4
Standard Deviation	6.5	5.1
Beta	0.3	0.3



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Pool A	386,030,588	3.4	0.8	-6.6	-6.6	2.7	3.3	3.5	2.6
Pool A - Total Fund Index		3.5	0.8	-6.7	-6.7	2.0	2.7	2.9	2.5
Difference		-0.1	0.0	0.1	0.1	0.7	0.6	0.6	0.1

Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Pool A	-	100.00	-
Broad US Equity	2.50	5.00	7.50
Small Cap US Equity	1.00	2.00	3.00
International Equity	5.00	10.00	15.00
Preferred Stock	3.50	7.00	10.50
MLPs	2.50	5.00	7.50
Core Real Estate	2.75	5.50	8.25
Non-Core Real Estate	2.25	4.50	6.75
Diversified Hedge Funds	2.50	5.00	7.50
Core Fixed Income	15.94	31.88	47.81
Bank Loans	5.94	11.88	17.81
Transition Low Duration	3.00	6.00	9.00
Private Credit	0.63	1.25	1.88
Opportunistic Investments	0.00	0.00	5.00

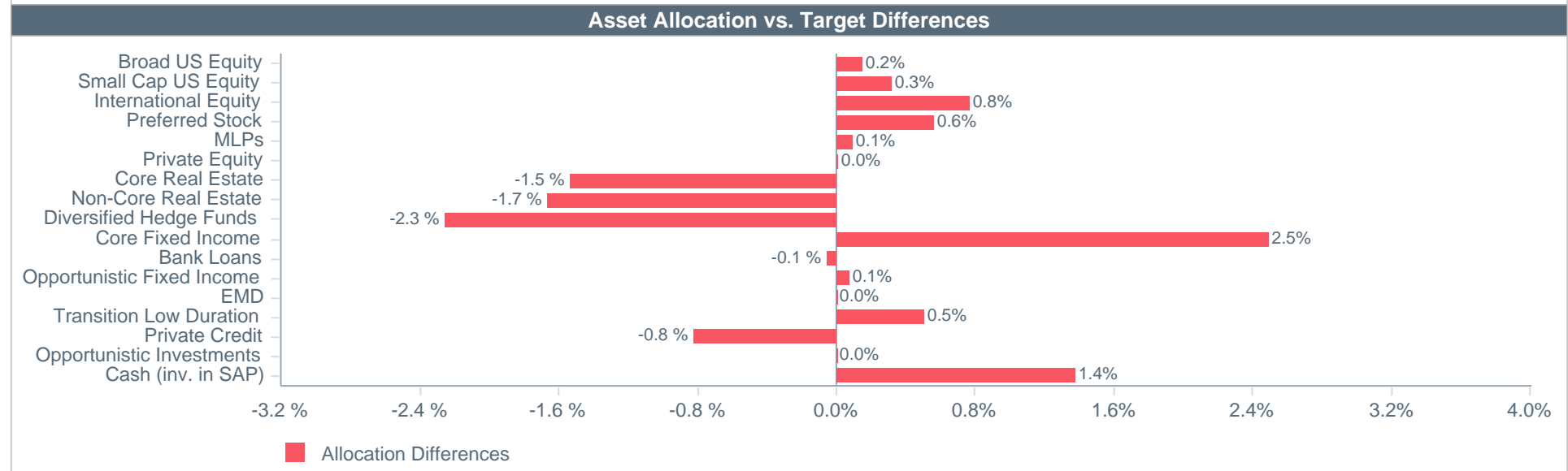


Performance shown is net of fees and annualized for periods greater than one year. Wyoming State Treasurer's Office fiscal year ends on June 30th. Beta is calculated relative to the MSCI ACW Index (Net). Calculations are based on quarterly periodicity. Allocations shown may not sum up to 100% exactly due to rounding. Asset class targets shown represent 09/01/2022 interim targets.

Wyoming State Treasurer's Office
Non-Permanent Funds - Pool A Investment Account
Asset Allocation vs. Target

As of December 31, 2022

Asset Allocation vs. Target					
	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
Pool A	386,030,588	100.00	-	100.00	-
Broad US Equity	19,894,611	5.15	2.50	5.00	7.50
Small Cap US Equity	8,939,262	2.32	1.00	2.00	3.00
International Equity	41,552,321	10.76	5.00	10.00	15.00
Preferred Stock	29,198,649	7.56	3.50	7.00	10.50
MLPs	19,676,875	5.10	2.50	5.00	7.50
Private Equity	33,068	0.01	0.00	0.00	0.00
Core Real Estate	15,288,436	3.96	2.75	5.50	8.25
Non-Core Real Estate	10,933,802	2.83	2.25	4.50	6.75
Diversified Hedge Funds	10,580,577	2.74	2.50	5.00	7.50
Core Fixed Income	132,651,512	34.36	15.94	31.88	47.81
Bank Loans	45,606,370	11.81	5.94	11.88	17.81
Opportunistic Fixed Income	272,451	0.07	0.00	0.00	5.00
EMD	-	0.00	0.00	0.00	0.00
Transition Low Duration	25,123,586	6.51	3.00	6.00	9.00
Private Credit	1,659,564	0.43	0.63	1.25	1.88
Opportunistic Investments	-	0.00	0.00	0.00	5.00
Cash (inv. in SAP)	24,619,504	6.38	2.50	5.00	7.50



Allocations shown may not sum up to 100% exactly due to rounding. Asset class targets shown represent 09/01/2022 interim targets.

Investment Profile					Target Allocation				
Fund Type: Non-Permanent Fund Main Objective: Produce an investment return so that State agencies have the advantage of better income from their invested funds, while maintaining stability. Primary Investment Goal: Capital preservation, yield, and liquidity Liquidity Constraints: The Fund must meet the day-to-day cash flow needs of the State Maximum Equity Allocation: 0% Current Target Equity Allocation: 0%						Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	
					State Agency Pool Excluding PPI	-	100.00	-	
					Laddered Short-Term Treasury	100.00	100.00	100.00	
					Core Fixed Income	0.00	0.00	0.00	
					Low Duration Fixed Income	0.00	0.00	0.00	
					Bank Loans	0.00	0.00	0.00	
					Opportunistic Fixed Income	0.00	0.00	0.00	
					EMD	0.00	0.00	0.00	
					Cash Equivalents	0.00	0.00	0.00	

Thematic Allocation		Fixed Income Characteristics vs. BB US Agg Bond Index		
			Portfolio	Benchmark
		Effective Duration	N/A	6.2
		Avg. Quality	N/A	Aa1/Aa2
		Yield To Maturity (%)	N/A	4.7
		Coupon Rate (%)	N/A	2.7

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	-0.1	0.3
Standard Deviation	1.9	2.2
Beta	0.0	0.0

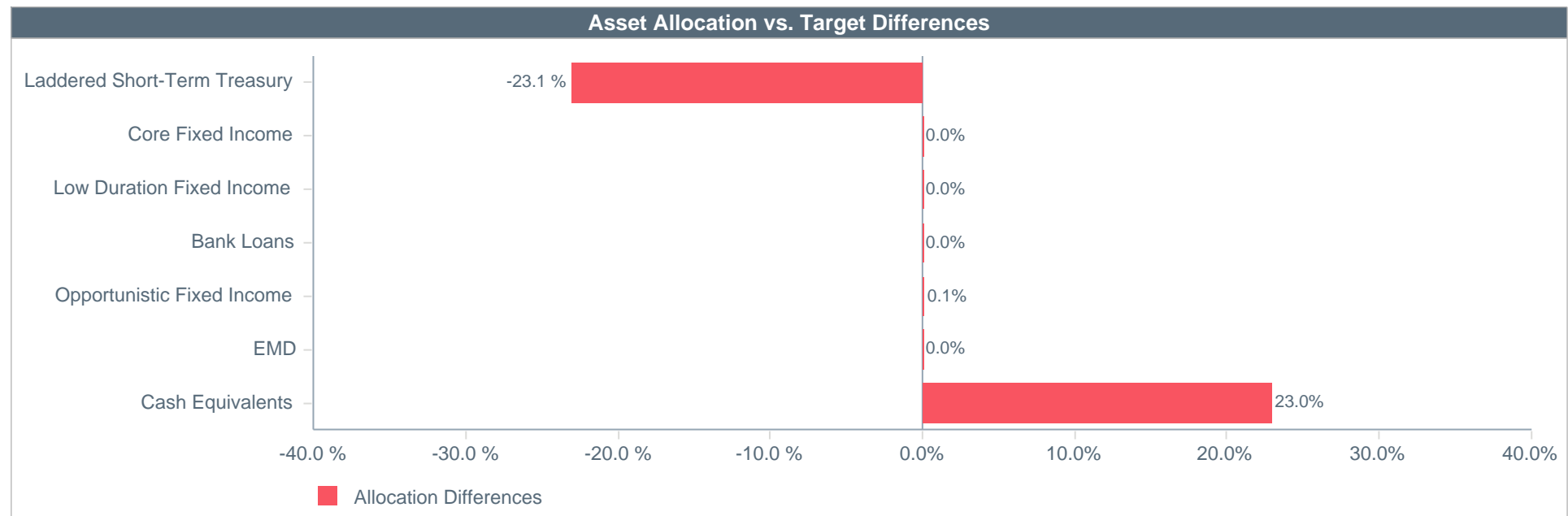
Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
State Agency Pool	5,023,054,723	1.0	-0.1	-2.3	-2.3	0.0	1.1	1.8	1.4
State Agency Pool - Actual Allocation Index		1.0	0.0	-2.4	-2.4	0.0	1.0	1.5	1.4
Difference		0.0	-0.1	0.1	0.1	0.0	0.1	0.3	0.0

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Wyoming State Treasurer's Office
Non-Permanent Funds - State Agency Pool
Asset Allocation vs. Target

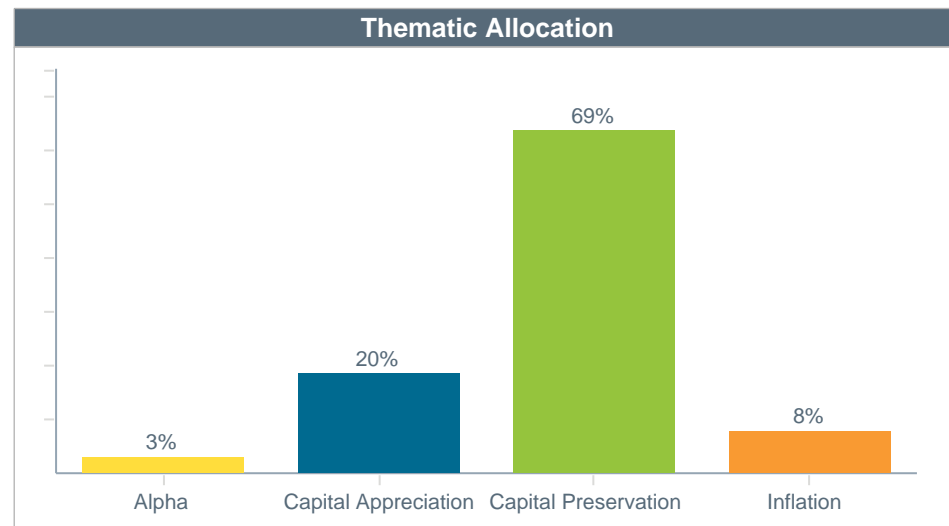
As of December 31, 2022

Asset Allocation vs. Target					
	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
State Agency Pool Excluding PPI	4,957,754,723	100.00	-	100.00	-
Laddered Short-Term Treasury	3,813,501,993	76.92	100.00	100.00	100.00
Core Fixed Income	-	0.00	0.00	0.00	0.00
Low Duration Fixed Income	-	0.00	0.00	0.00	0.00
Bank Loans	-	0.00	0.00	0.00	0.00
Opportunistic Fixed Income	6,236,943	0.13	0.00	0.00	0.00
EMD	-	0.00	0.00	0.00	0.00
Cash Equivalents	1,138,015,788	22.95	0.00	0.00	0.00



Allocations shown may not sum up to 100% exactly due to rounding. Market value shown excludes Public Purpose Investments (PPIs).

Investment Profile
Fund Type: Non-Permanent Fund Main Objective: LSRA will be invested to obtain the highest possible return while seeking to preserve the balance necessary to address potential budget shortfalls or a budget deficit. Primary Investment Goal: liquidity, capital preservation, and capital appreciation. LSRA LT Reserve Target Equity Allocation: 87.5% Spending Policy: Legislative Appropriation Participating Funds: <ul style="list-style-type: none"> Long Term Reserve Intermediate Term Reserve: 100% Core Fixed Income Short Term Reserve: 100% Low Duration Fixed Income



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
LSRA	1,861,191,761	3.1	-0.3	-7.2	-7.2	0.8	N/A	N/A	N/A
LSRA - Total Fund Index		3.1	-0.4	-7.3	-7.3	0.8	N/A	N/A	N/A
Difference		0.0	0.1	0.1	0.1	0.0	N/A	N/A	N/A

Performance shown is net of fees and annualized for periods greater than one year. Wyoming State Treasurer's Office fiscal year ends on June 30th. Beta is calculated relative to the MSCI ACW Index (Net). Calculations are based on quarterly periodicity. Allocations shown may not sum up to 100% exactly due to rounding. Target Allocation represents long term reserve.

Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
LSRA Long Term Reserve	-	100.00	-
Broad US Equity	17.00	22.00	27.00
Small Cap US Equity	4.00	6.00	8.00
International Equity	21.00	28.00	35.00
Bank Loans	10.00	12.50	15.00
Private Equity	0.00	0.00	0.00
MLPs	10.00	12.50	15.00
Diversified Hedge Funds	15.00	19.00	23.00
Opportunistic Investments	0.00	0.00	0.00
Cash (inv. in SAP)	0.00	0.00	0.00

Risk Metrics		
	Since Incep.	Inception Date
Standard Deviation	7.3	07/01/2019
Beta	0.3	
Sharpe Ratio	0.1	

Wyoming State Treasurer's Office
Asset Allocation

As of December 31, 2022

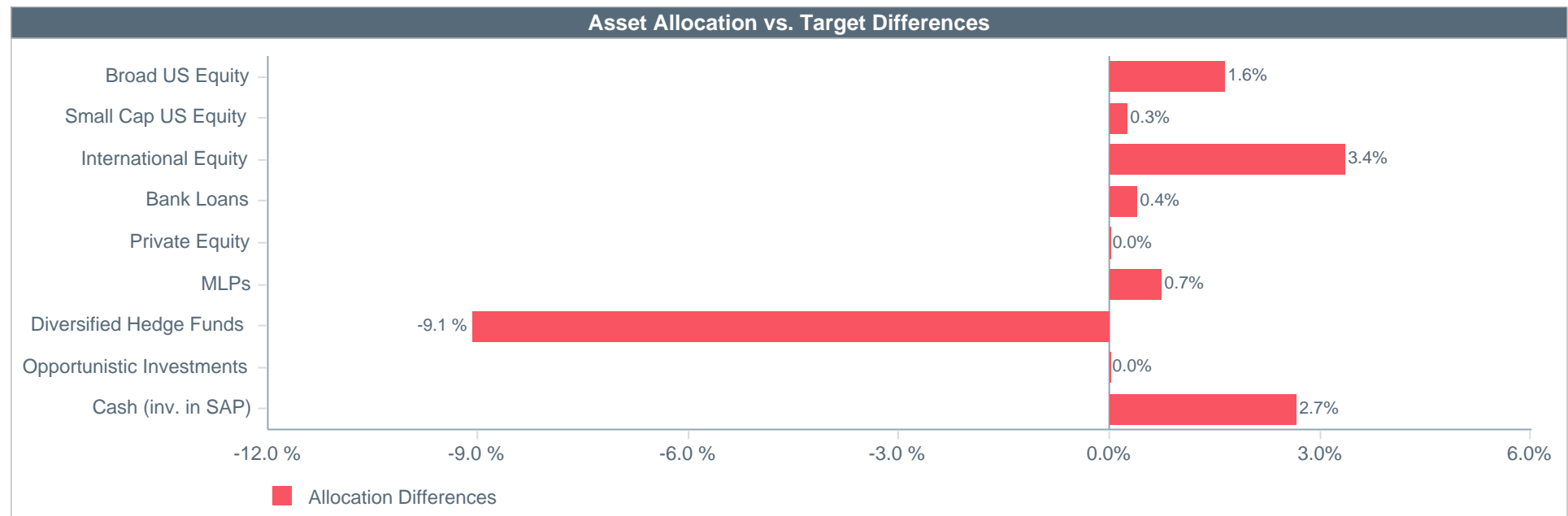
	Asset Allocation (\$)	Asset Allocation (%)
LSRA	1,861,191,761	100.00
Broad US Equity	142,308,836	7.65
Small Cap US Equity	37,650,676	2.02
International Equity	188,753,836	10.14
Core Fixed Income	605,149,615	32.51
Bank Loans	77,628,811	4.17
Low Duration Fixed Income	654,212,034	35.15
Private Equity	24,718	0.00
MLPs	79,715,193	4.28
Diversified Hedge Funds	59,753,371	3.21
Opportunistic Investments	-	0.00
Cash (inv. in SAP)	15,994,671	0.86

Allocations shown may not sum up to 100% exactly due to rounding. The Total LSRA pool has no target allocation.

Wyoming State Treasurer's Office
LSRA Long Term Reserve
Asset Allocation vs. Target

As of December 31, 2022

Asset Allocation vs. Target					
	Asset Allocation (\$)	Asset Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
LSRA Long Term Reserve	601,830,111	100.00	-	100.00	-
Broad US Equity	142,308,836	23.65	17.00	22.00	27.00
Small Cap US Equity	37,650,676	6.26	4.00	6.00	8.00
International Equity	188,753,836	31.36	21.00	28.00	35.00
Bank Loans	77,628,811	12.90	10.00	12.50	15.00
Private Equity	24,718	0.00	0.00	0.00	0.00
MLPs	79,715,193	13.25	10.00	12.50	15.00
Diversified Hedge Funds	59,753,371	9.93	15.00	19.00	23.00
Opportunistic Investments	-	0.00	0.00	0.00	0.00
Cash (inv. in SAP)	15,994,671	2.66	0.00	0.00	0.00



Allocations shown may not sum up to 100% exactly due to rounding. Market value shown excludes Public Purpose Investments (PPIs).

Wyoming State Treasurer's Office
Asset Allocation

As of December 31, 2022

	Asset Allocation (\$)	Asset Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
LSRA Intermediate Term Reserve	605,149,615	100.00	-	100.00	-
Core Fixed Income	605,149,615	100.00	100.00	100.00	100.00

Allocations shown may not sum up to 100% exactly due to rounding.

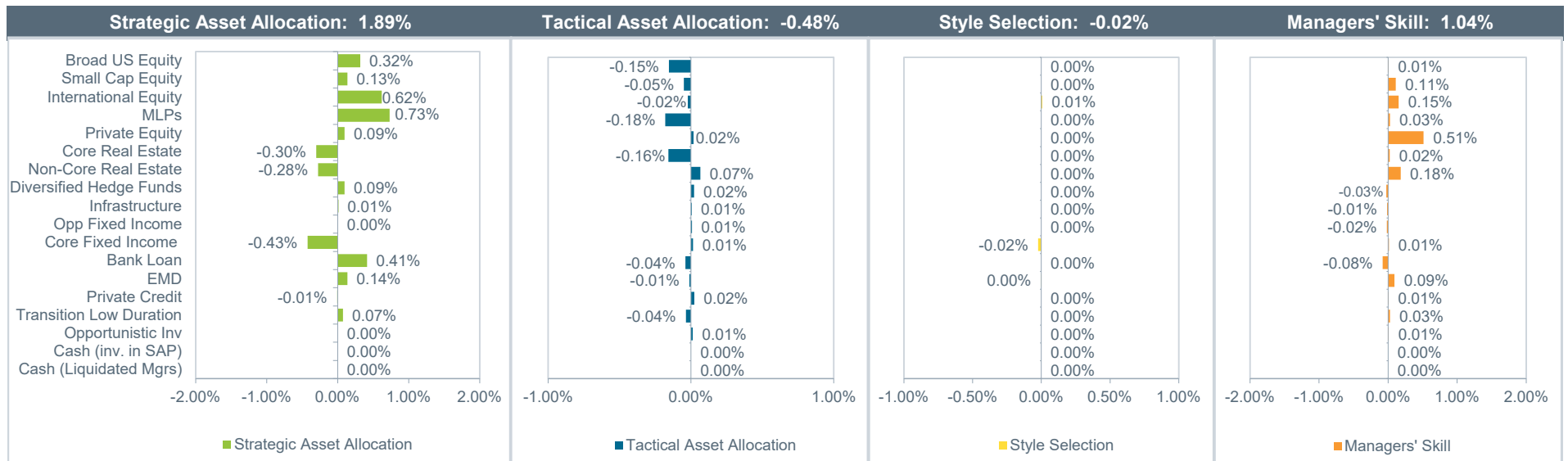
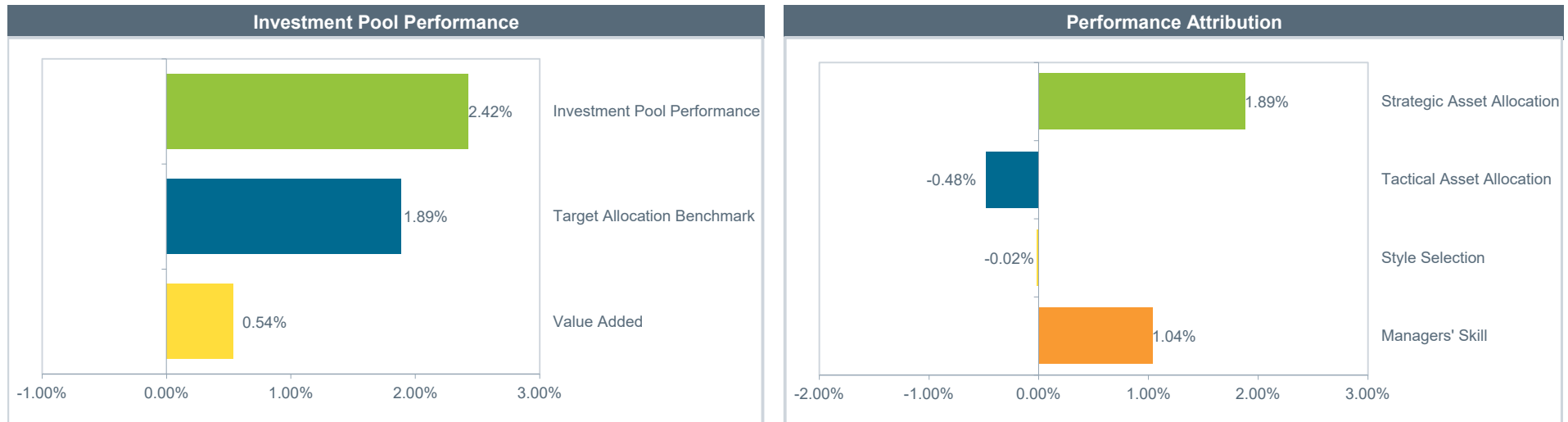
Wyoming State Treasurer's Office
Asset Allocation

As of December 31, 2022

	Asset Allocation (\$)	Asset Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
LSRA Short Term Reserve	654,212,034	100.00	-	100.00	-
Low Duration Fixed Income	654,212,034	100.00	100.00	100.00	100.00

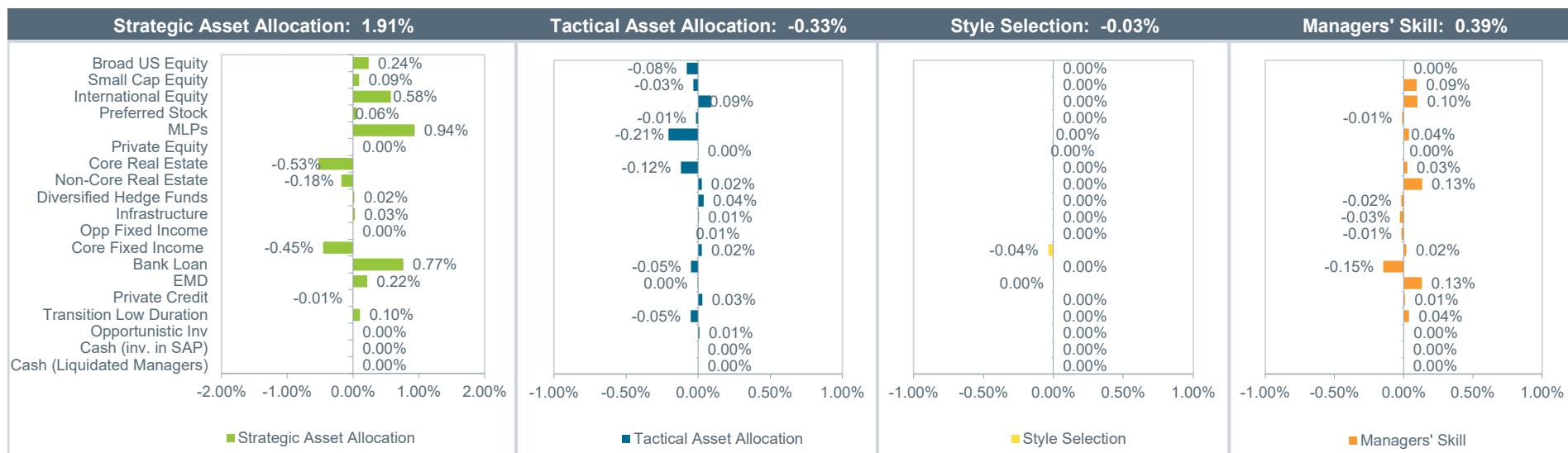
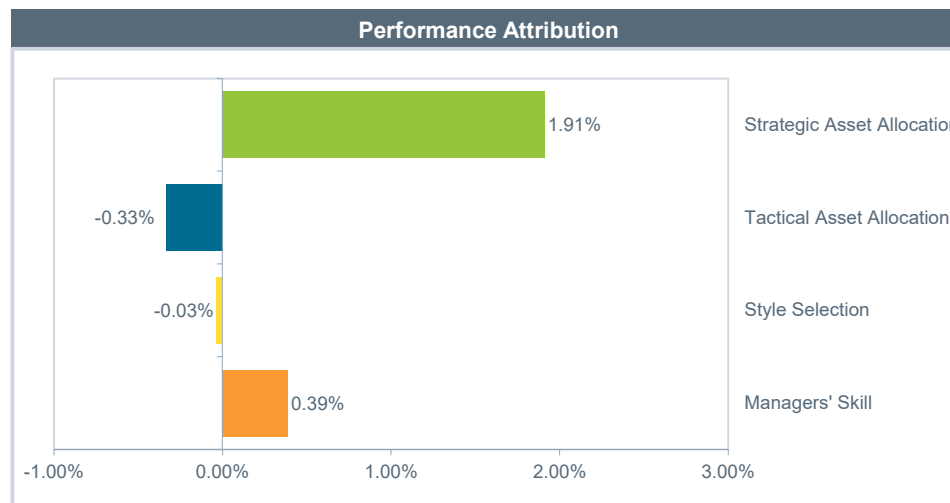
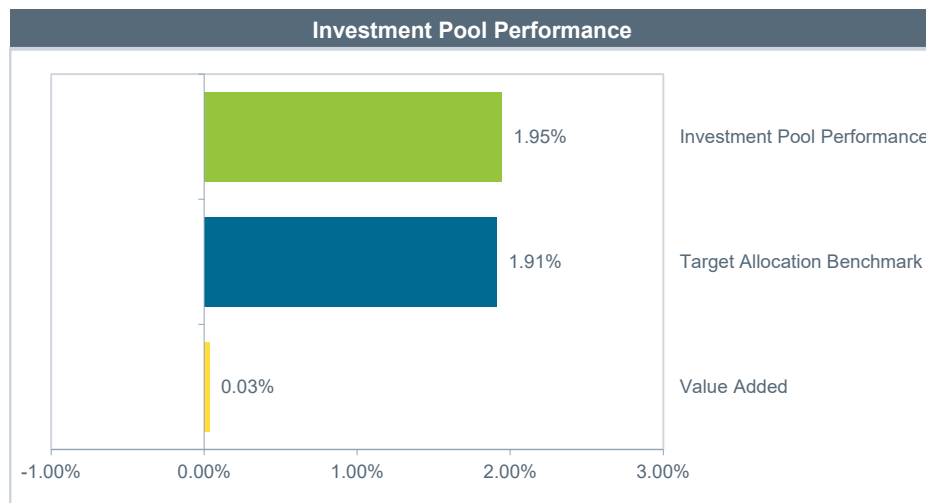
Allocations shown may not sum up to 100% exactly due to rounding.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Permanent Mineral Trust Fund vs. Target Allocation Index
FYTD Ending December 31, 2022



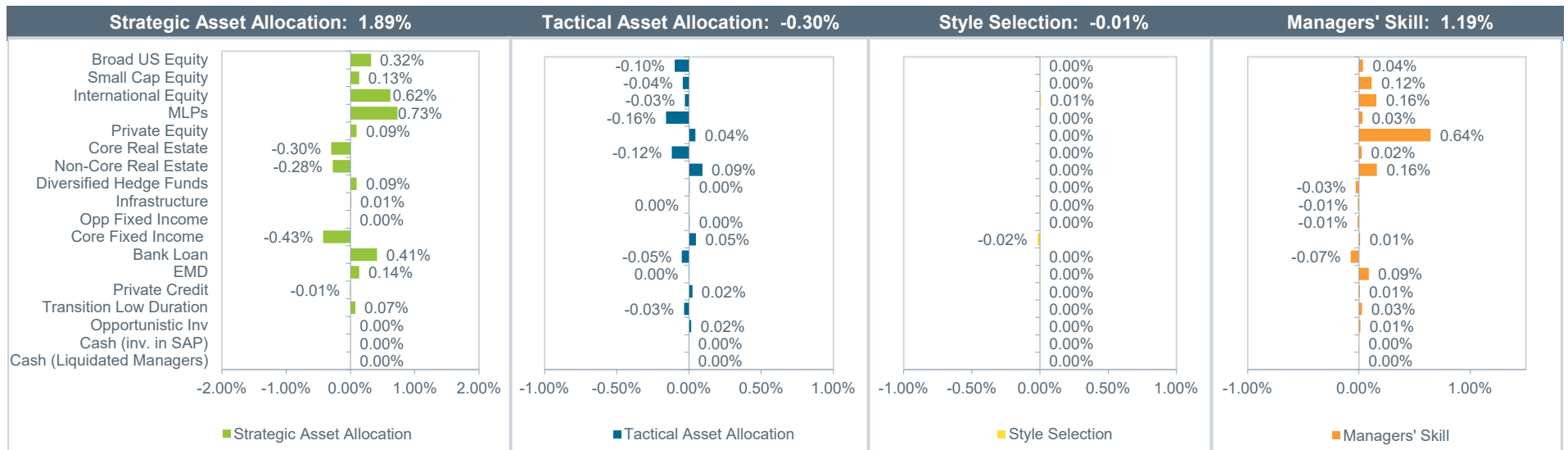
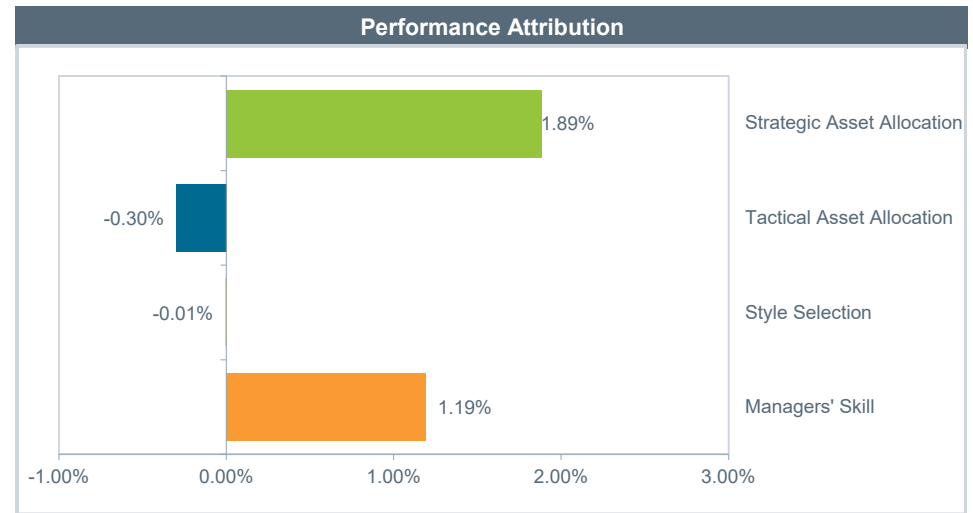
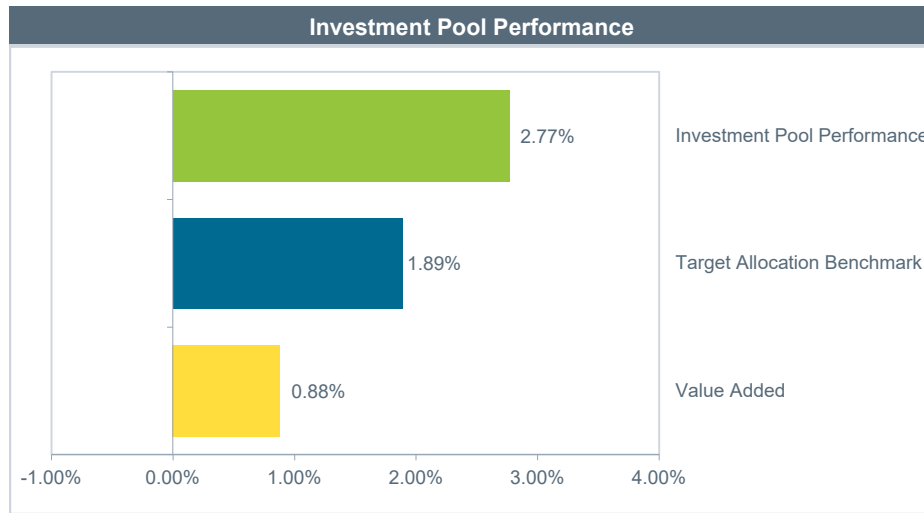
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index.
 Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Common School Permanent Land Fund vs. Target Allocation Index
FYTD Ending December 31, 2022



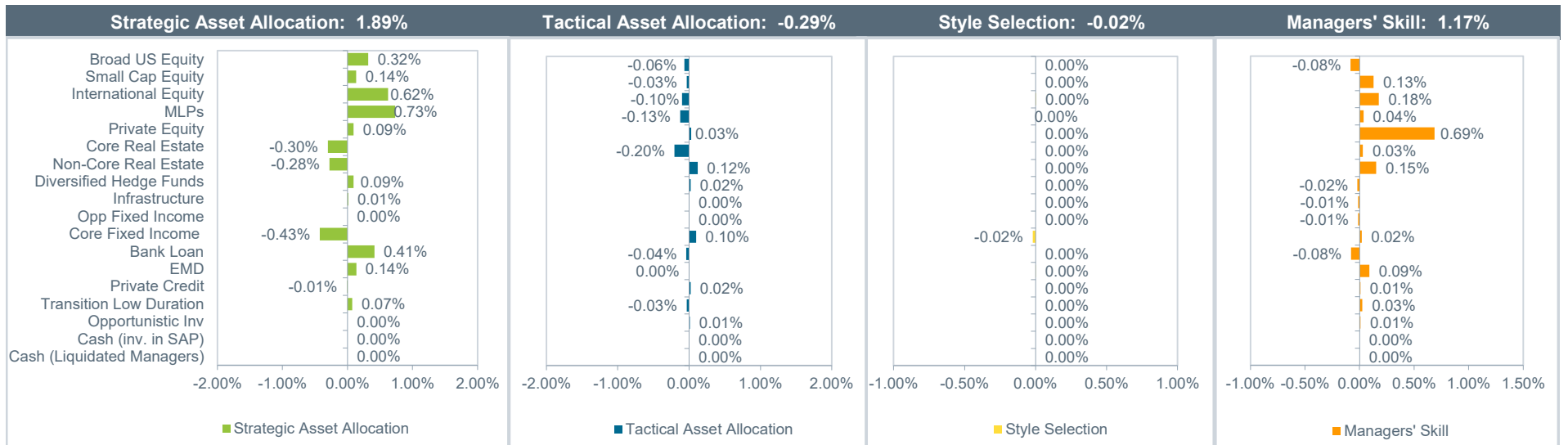
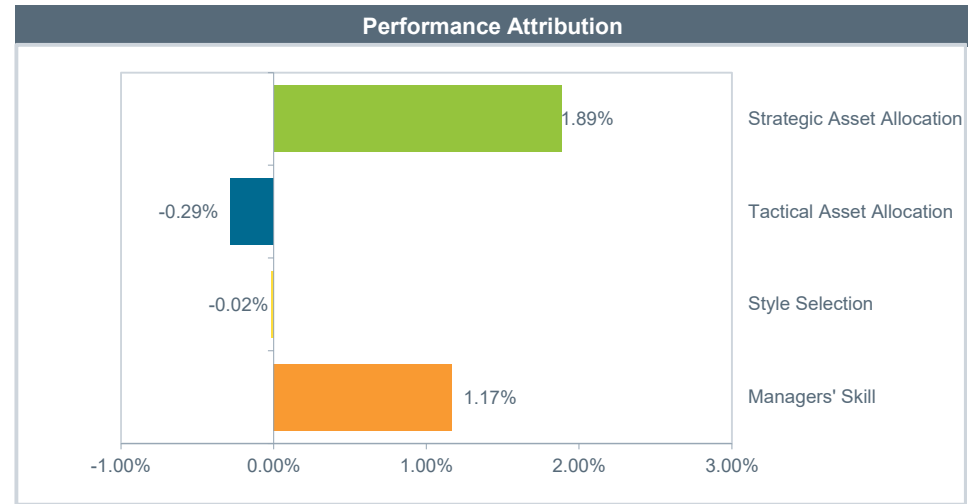
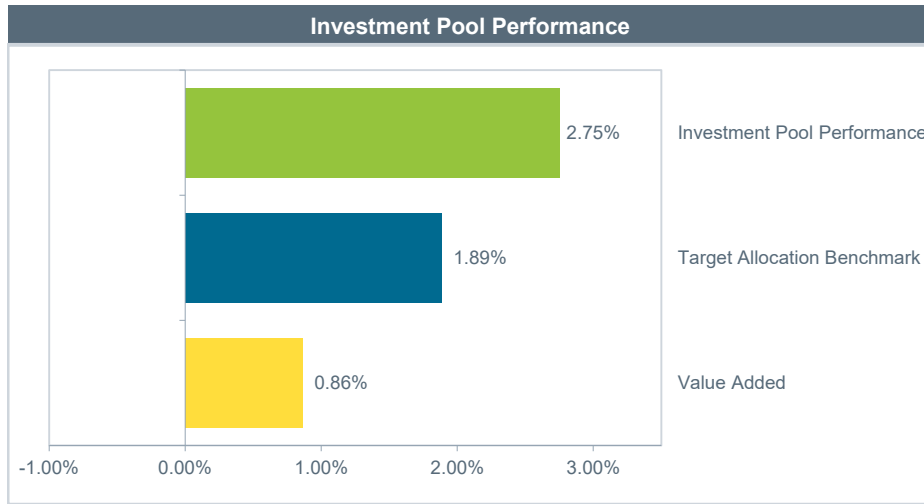
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Permanent Land Fund vs. Target Allocation Index
FYTD Ending December 31, 2022



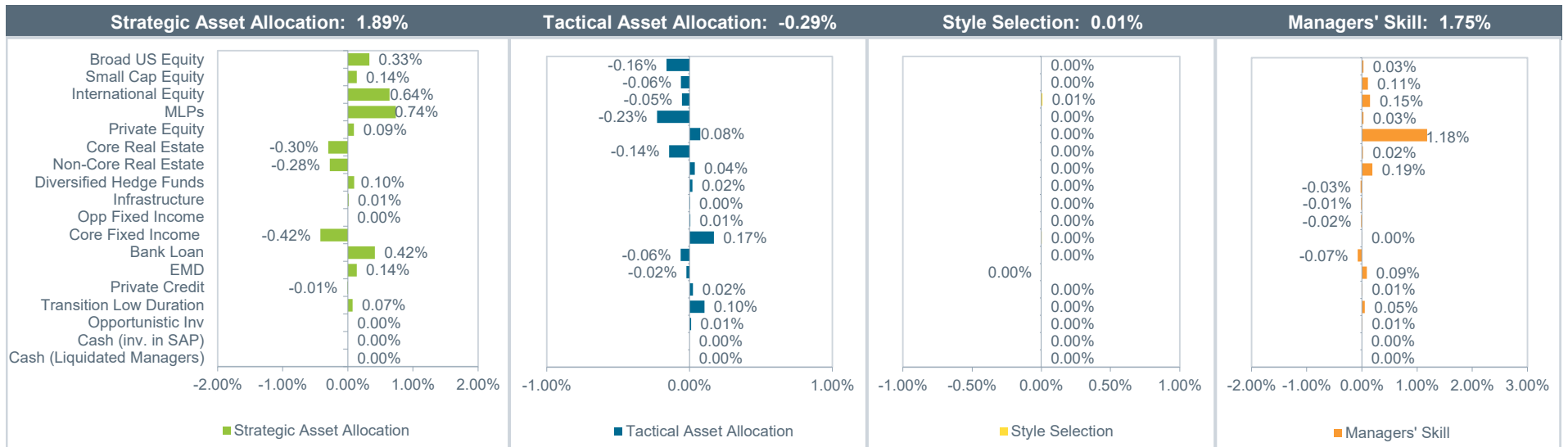
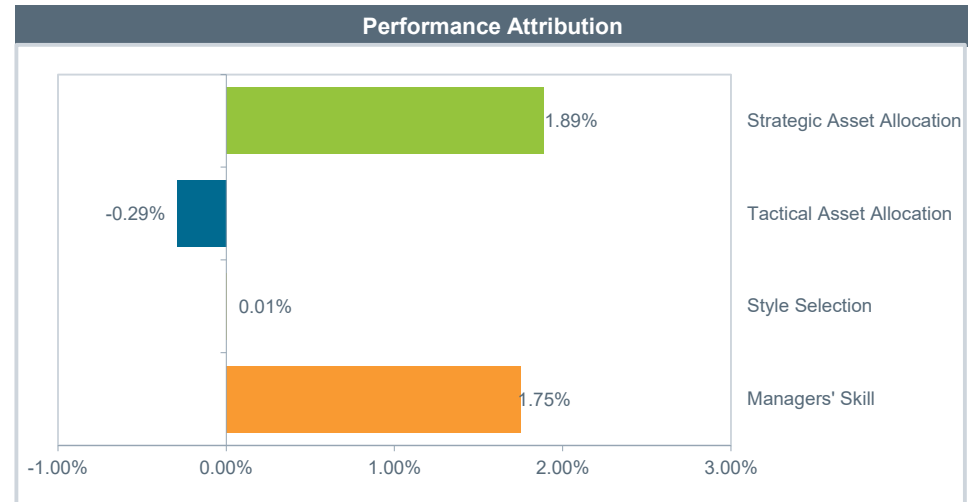
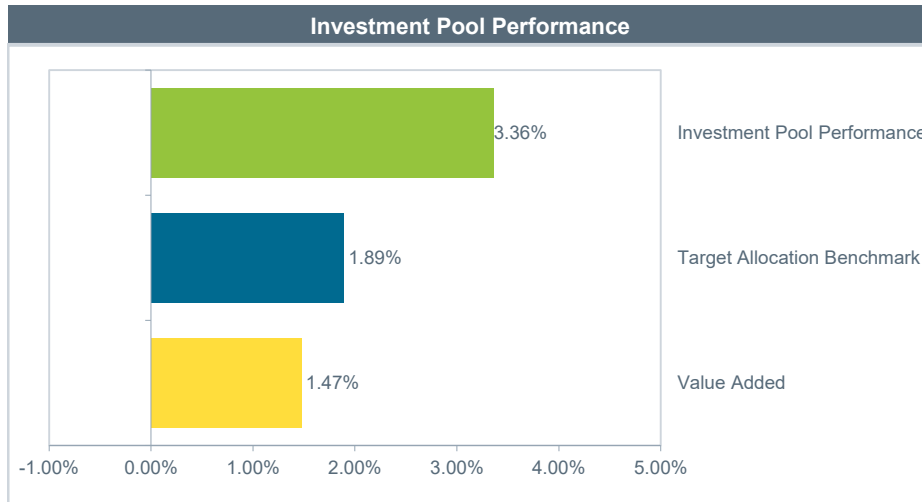
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.
The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index.
Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
University Permanent Land Fund vs. Target Allocation Index
FYTD Ending December 31, 2022



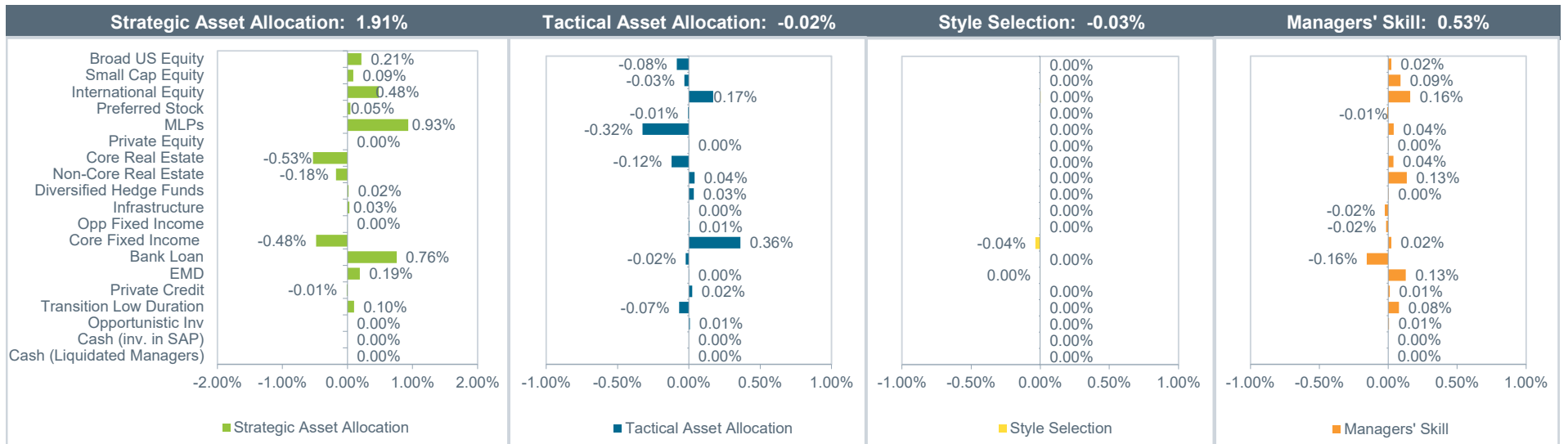
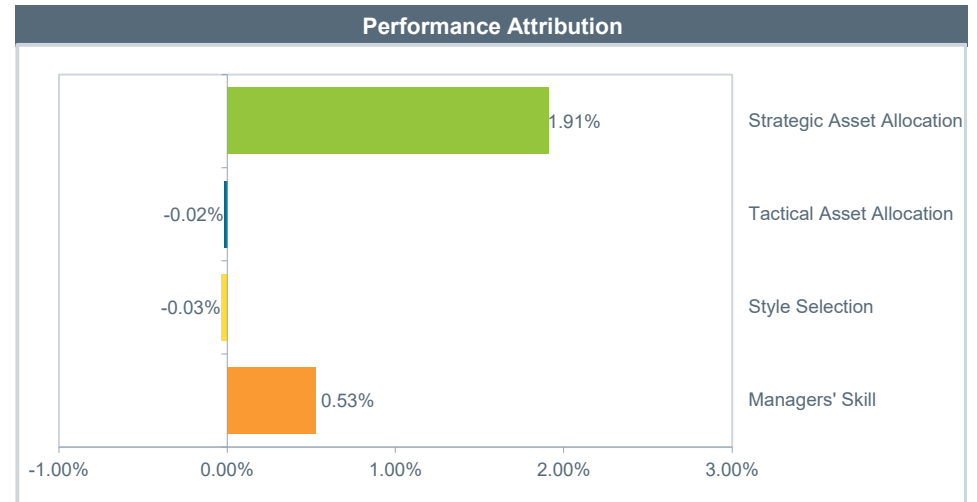
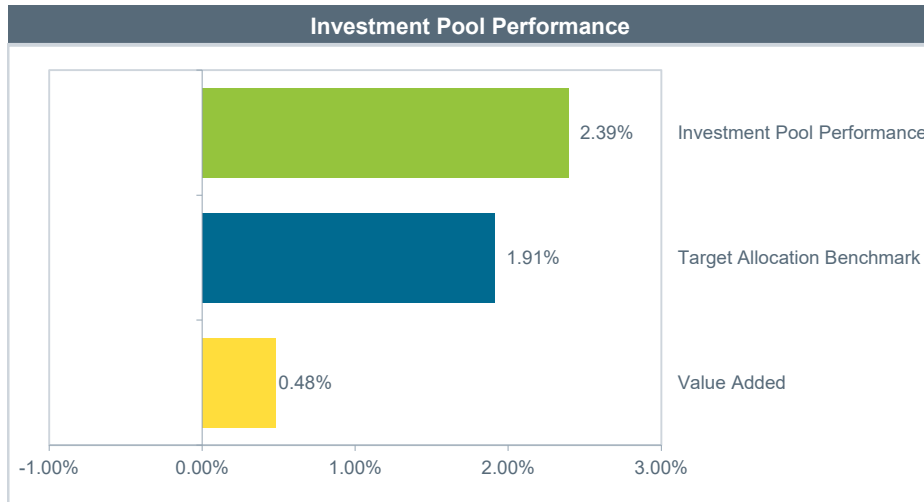
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Hathaway Scholarship Endowment Fund vs. Target Allocation Index
FYTD Ending December 31, 2022



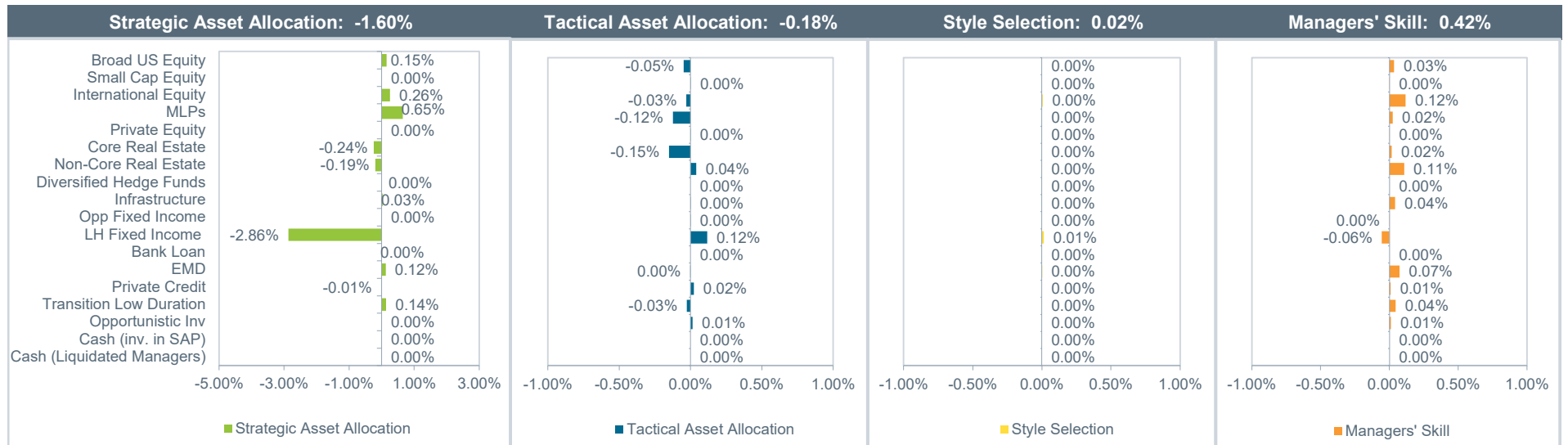
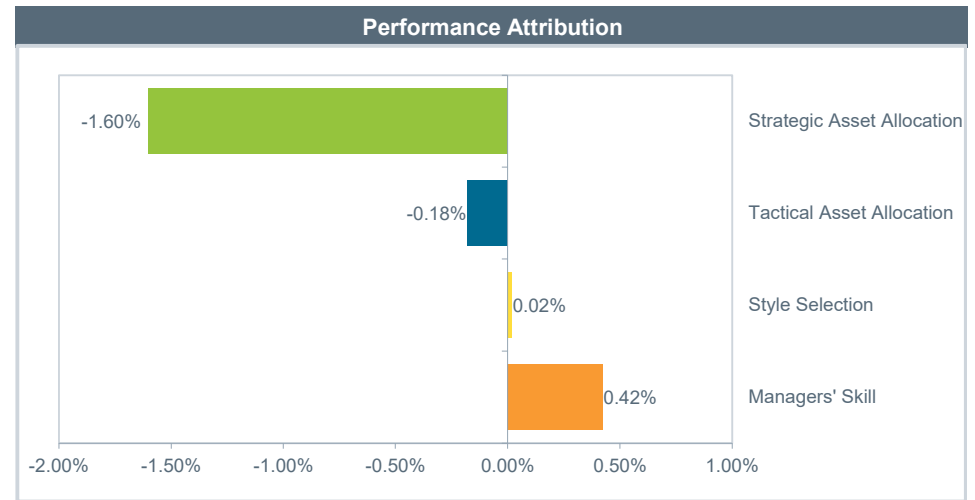
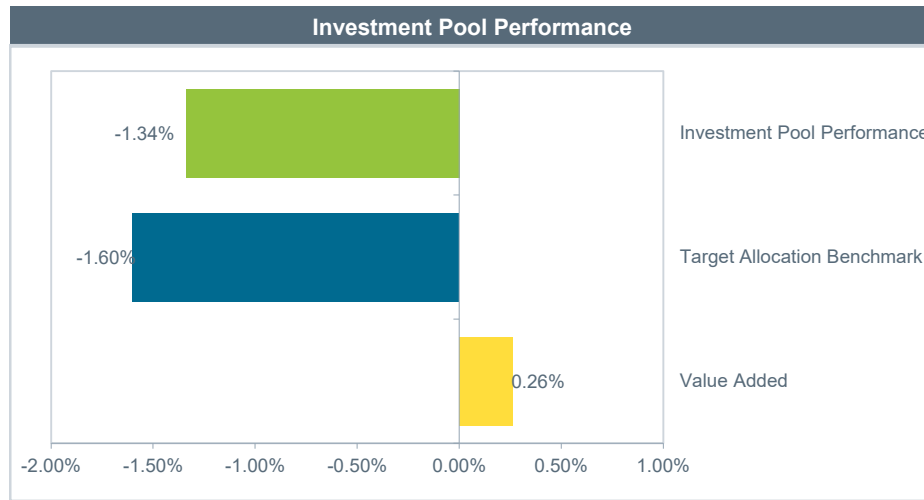
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Higher Education Endowment Fund vs. Target Allocation Index
FYTD Ending December 31, 2022



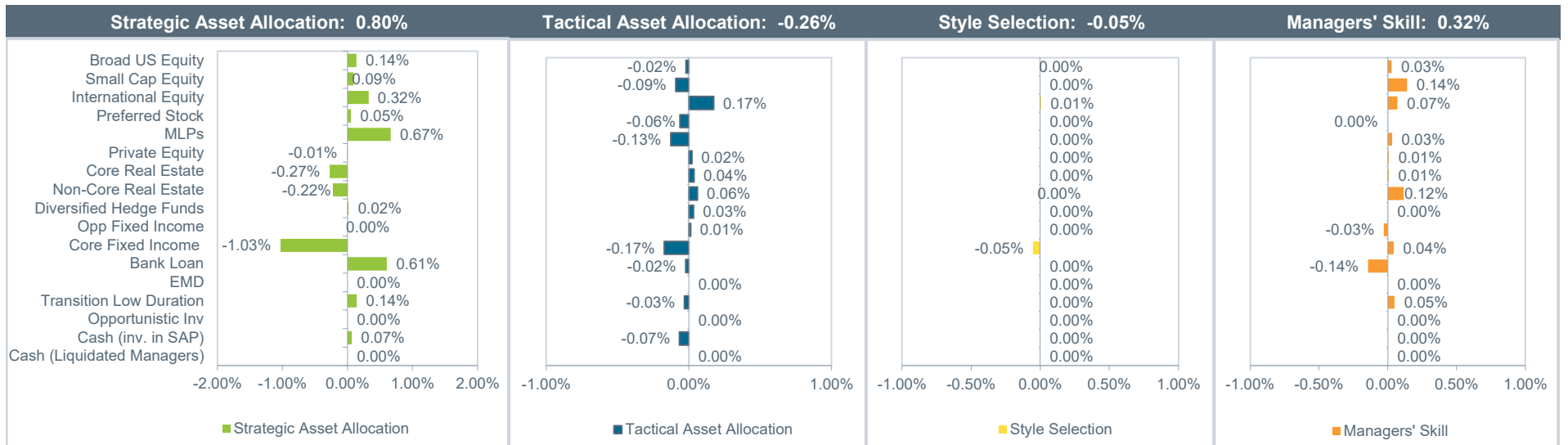
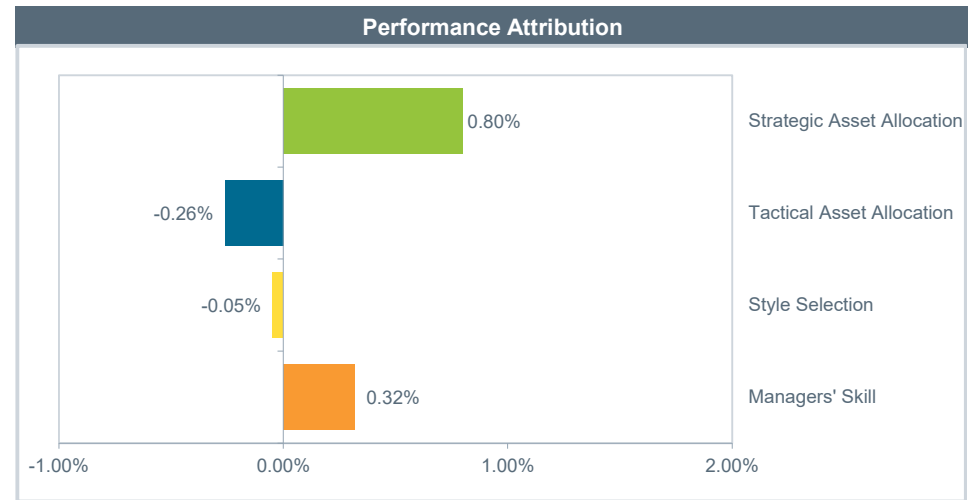
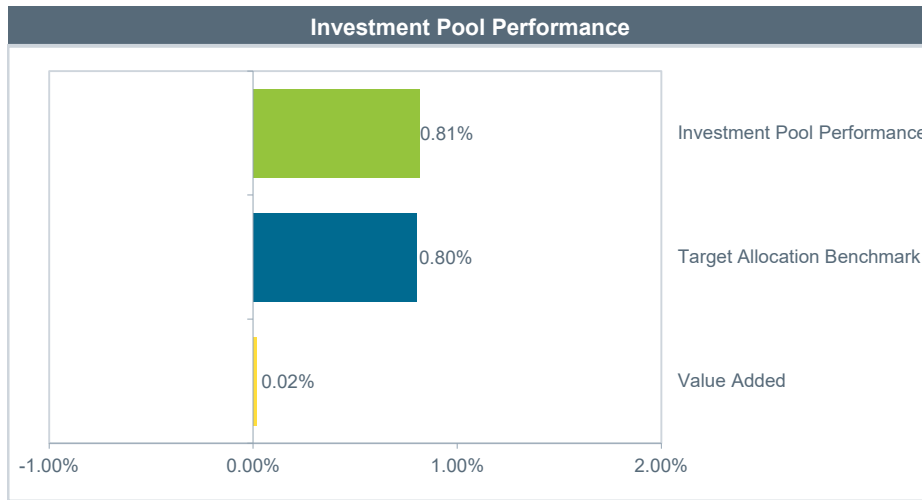
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

**Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Workers Compensation Fund vs. Target Allocation Index
FYTD Ending December 31, 2022**



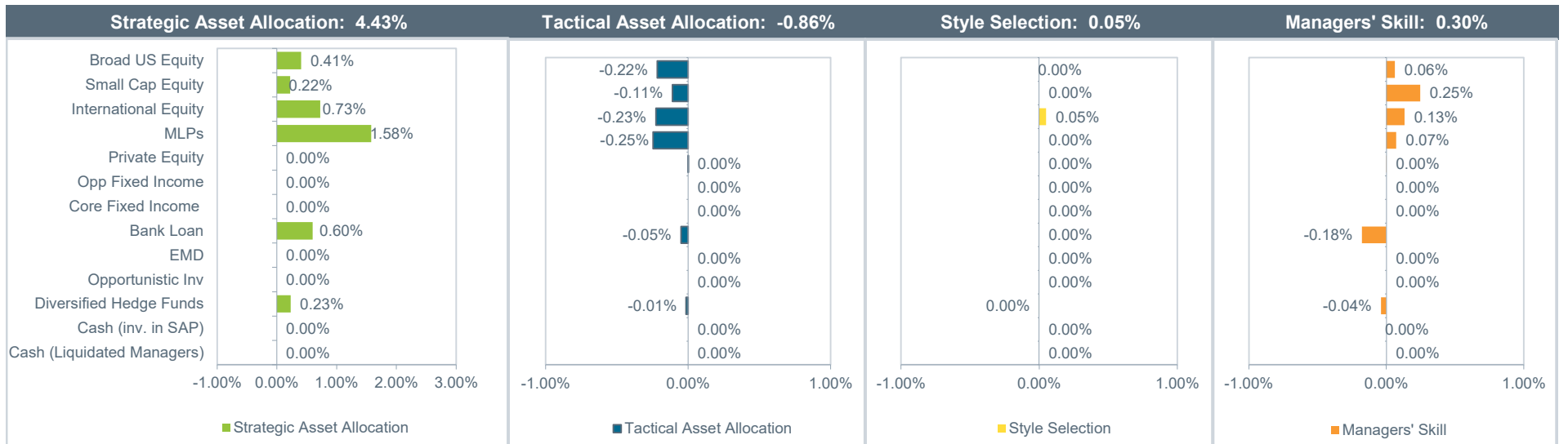
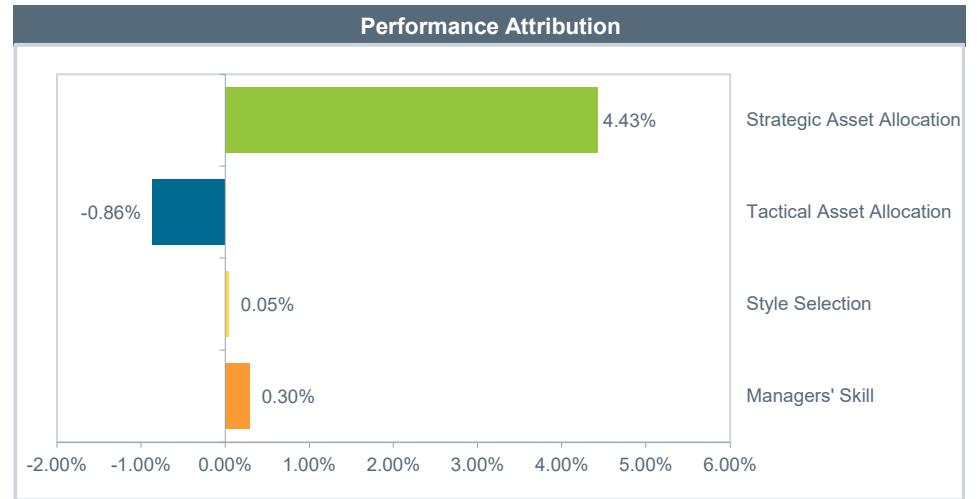
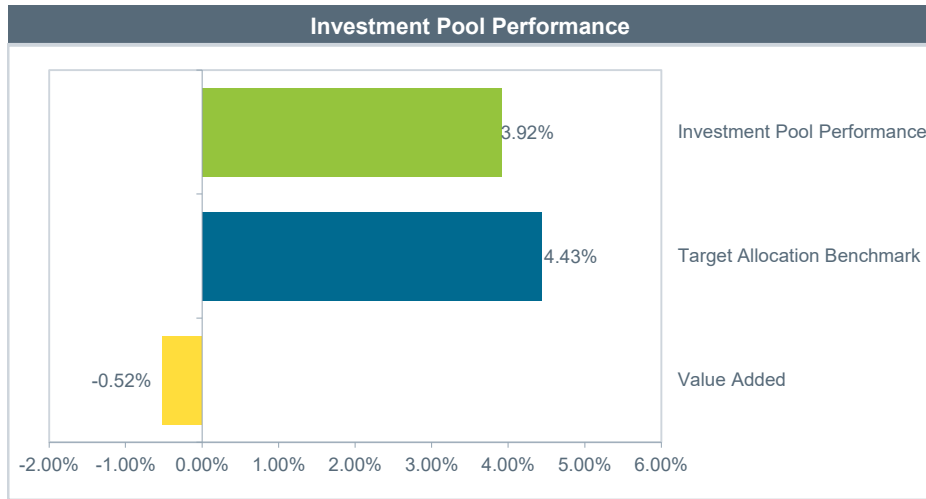
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
Pool A vs. Target Allocation Index
FYTD Ending December 31, 2022



Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

Wyoming State Treasurer's Office
Pool Attribution - IDP Methodology
LSRA LT Reserve vs. Target Allocation Index
FYTD Ending December 31, 2022



Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index. Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

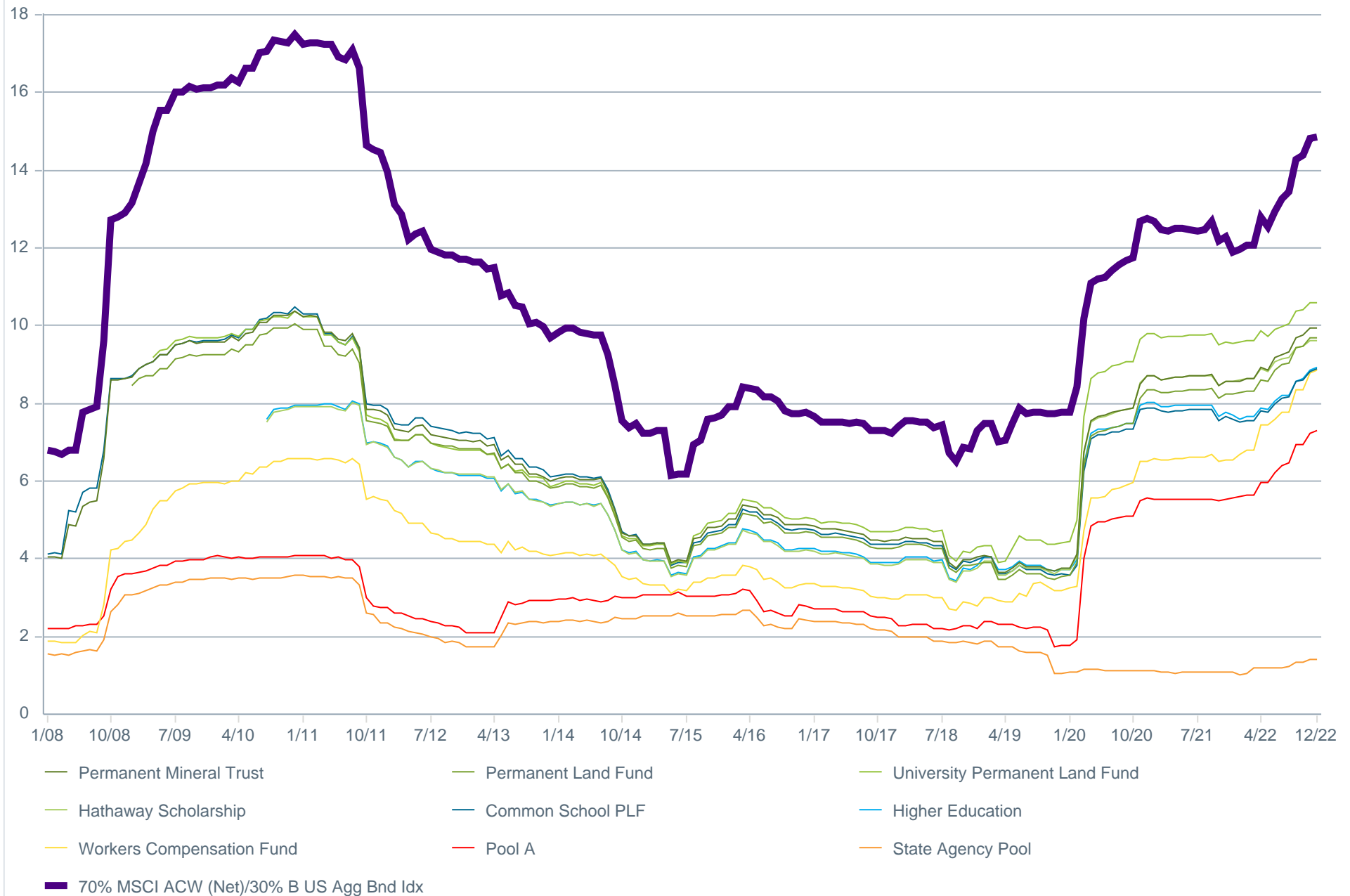
Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Permanent Funds	17,213,200,085	70.3	4.5	1.8	-6.6	-6.6	4.6	4.7	5.7	5.3	5.9	07/01/2002
Permanent Mineral Trust	9,224,910,590	37.7	5.0	2.4	-6.0	-6.0	5.5	5.2	6.2	5.8	6.0	06/01/2001
PMTF - Total Fund Index			5.1	1.9	-7.1	-7.1	4.8	4.8	5.8	5.6	5.4	
Difference			-0.1	0.5	1.1	1.1	0.7	0.4	0.4	0.2	0.6	
Common School Permanent Land Fund	4,554,175,053	18.6	4.1	1.9	-4.8	-4.8	4.0	4.1	5.4	5.3	5.9	06/01/2001
Common School - Total Fund Index			4.6	1.9	-5.7	-5.7	3.1	3.6	4.9	5.0	5.1	
Difference			-0.5	0.0	0.9	0.9	0.9	0.5	0.5	0.3	0.8	
Permanent Land Fund	251,223,884	1.0	5.2	2.8	-5.4	-5.4	5.7	5.3	6.2	5.7	5.4	02/01/2006
PLF - Total Fund Index			5.1	1.9	-7.1	-7.1	4.8	4.8	5.7	5.5	5.0	
Difference			0.1	0.9	1.7	1.7	0.9	0.5	0.5	0.2	0.4	
University Permanent Land Fund	28,740,938	0.1	5.0	2.7	-5.5	-5.5	5.9	5.5	6.6	6.0	5.4	05/01/2006
University PLF - Total Fund Index			5.1	1.9	-7.1	-7.1	4.8	4.9	6.1	5.8	5.2	
Difference			-0.1	0.8	1.6	1.6	1.1	0.6	0.5	0.2	0.2	
Hathaway Scholarship	675,281,950	2.8	5.0	3.4	-4.0	-4.0	6.3	5.6	6.2	5.5	5.6	09/01/2007
Hathaway - Total Fund Index			5.1	1.9	-7.1	-7.1	4.8	4.7	5.5	5.2	5.2	
Difference			-0.1	1.5	3.1	3.1	1.5	0.9	0.7	0.3	0.4	
Higher Education	132,506,830	0.5	4.2	2.4	-4.6	-4.6	3.8	3.9	5.0	4.7	5.0	09/01/2007
Higher Education - Total Fund Index			4.6	1.9	-5.7	-5.7	3.1	3.5	4.7	4.6	4.7	
Difference			-0.4	0.5	1.1	1.1	0.7	0.4	0.3	0.1	0.3	
Workers Compensation Fund	2,346,360,840	9.6	3.4	-1.3	-12.6	-12.6	1.5	3.3	4.2	3.8	5.1	06/01/2001
Workers Comp - Total Fund Index			3.6	-1.6	-13.1	-13.1	0.5	2.8	3.7	3.6	4.7	
Difference			-0.2	0.3	0.5	0.5	1.0	0.5	0.5	0.2	0.4	
Non-Permanent Funds	7,270,277,072	29.7	1.7	-0.1	-3.7	-3.7	0.3	1.4	2.0	1.5	3.3	07/01/2002
Pool A	386,030,588	1.6	3.4	0.8	-6.6	-6.6	2.7	3.3	3.5	2.6	4.1	01/01/2000
Pool A - Total Fund Index			3.5	0.8	-6.7	-6.7	2.0	2.7	2.9	2.5	4.6	
Difference			-0.1	0.0	0.1	0.1	0.7	0.6	0.6	0.1	-0.5	
LSRA	1,861,191,761	7.6	3.1	-0.3	-7.2	-7.2	0.8	N/A	N/A	N/A	1.4	07/01/2019
LSRA - Total Fund Index			3.1	-0.4	-7.3	-7.3	0.8	N/A	N/A	N/A	1.4	
Difference			0.0	0.1	0.1	0.1	0.0	N/A	N/A	N/A	0.0	
LSRA Long Term Reserve	601,830,111	2.5	8.1	3.9	-8.4	-8.4	4.6	N/A	N/A	N/A	5.2	07/01/2019
LSRA Long Term Reserve - Total Fund Index			8.1	4.4	-7.8	-7.8	5.0	N/A	N/A	N/A	5.6	
Difference			0.0	-0.5	-0.6	-0.6	-0.4	N/A	N/A	N/A	-0.4	
LSRA Intermediate Term Reserve	605,149,615	2.5	1.7	-2.9	-13.6	-13.6	-2.6	N/A	N/A	N/A	-1.6	08/01/2019
LSRA Int Term Reserve - Total Fund Index			1.9	-3.0	-13.0	-13.0	-2.7	N/A	N/A	N/A	-1.8	
Difference			-0.2	0.1	-0.6	-0.6	0.1	N/A	N/A	N/A	0.2	
LSRA Short Term Reserve	654,212,034	2.7	0.8	-0.4	-2.9	-2.9	0.0	N/A	N/A	N/A	0.0	01/01/2020
LSRA Short Term Reserve - Total Fund Index			0.7	-0.8	-3.8	-3.8	-0.5	N/A	N/A	N/A	-0.5	
Difference			0.1	0.4	0.9	0.9	0.5	N/A	N/A	N/A	0.5	
State Agency Pool	5,023,054,723	20.5	1.0	-0.1	-2.3	-2.3	0.0	1.1	1.8	1.4	3.4	06/01/2001
State Agency Pool - Actual Allocation Index			1.0	0.0	-2.4	-2.4	0.0	1.0	1.5	1.4	3.3	
Difference			0.0	-0.1	0.1	0.1	0.0	0.1	0.3	0.0	0.1	
Total Fund	24,483,477,157	100.0	3.9	1.4	-5.8	-5.8	3.4	3.8	4.7	4.3	5.3	10/01/1996
Wyoming State Total Fund Index			4.0	1.0	-6.7	-6.7	2.9	3.5	4.3	4.1	5.1	
Difference			-0.1	0.4	0.9	0.9	0.5	0.3	0.4	0.2	0.2	

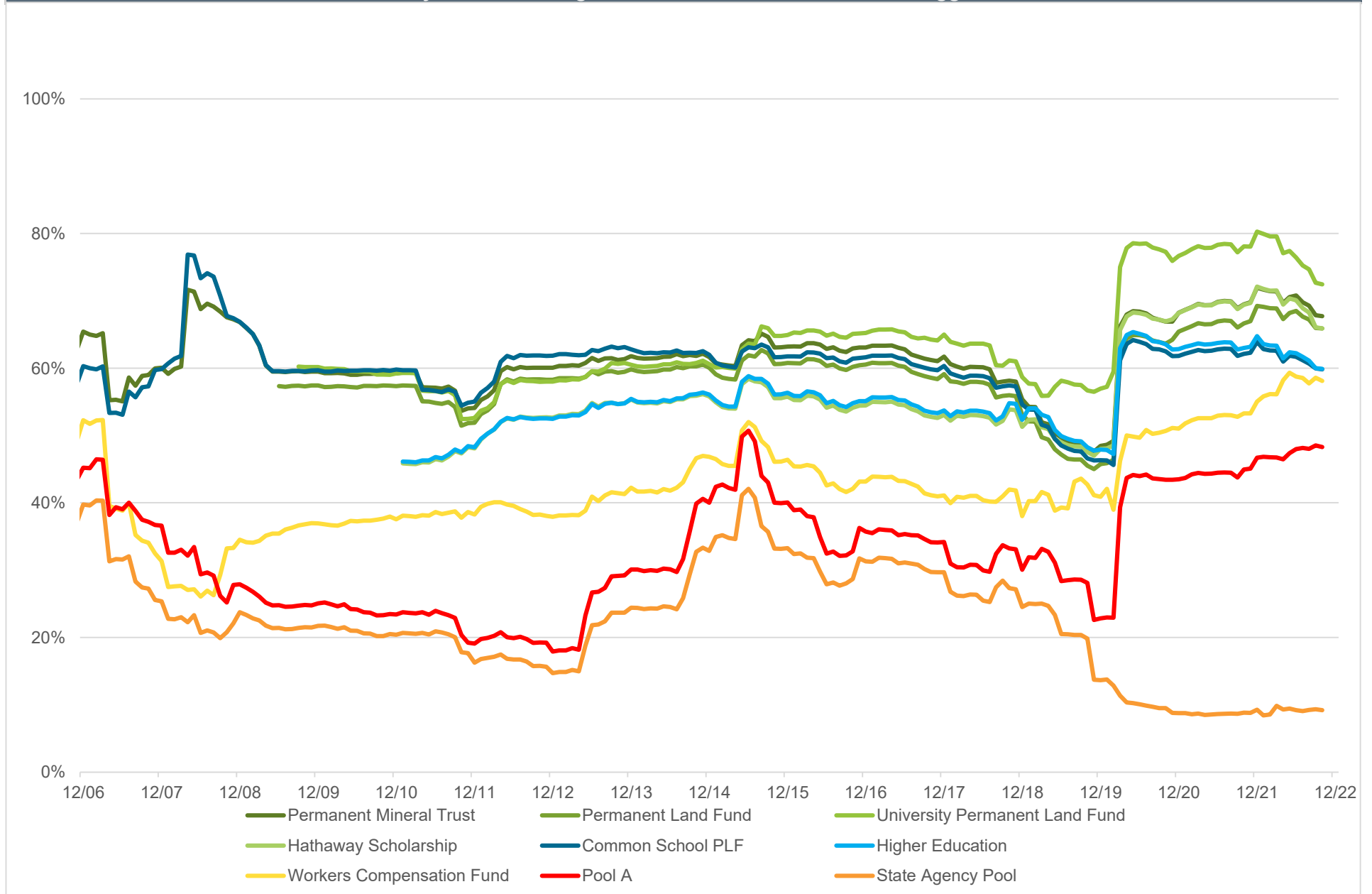
Performance shown is net of fees and excludes PPIs and operational cash. Wyoming State Treasurer's Office fiscal year ends on June 30th.

Standard Deviation



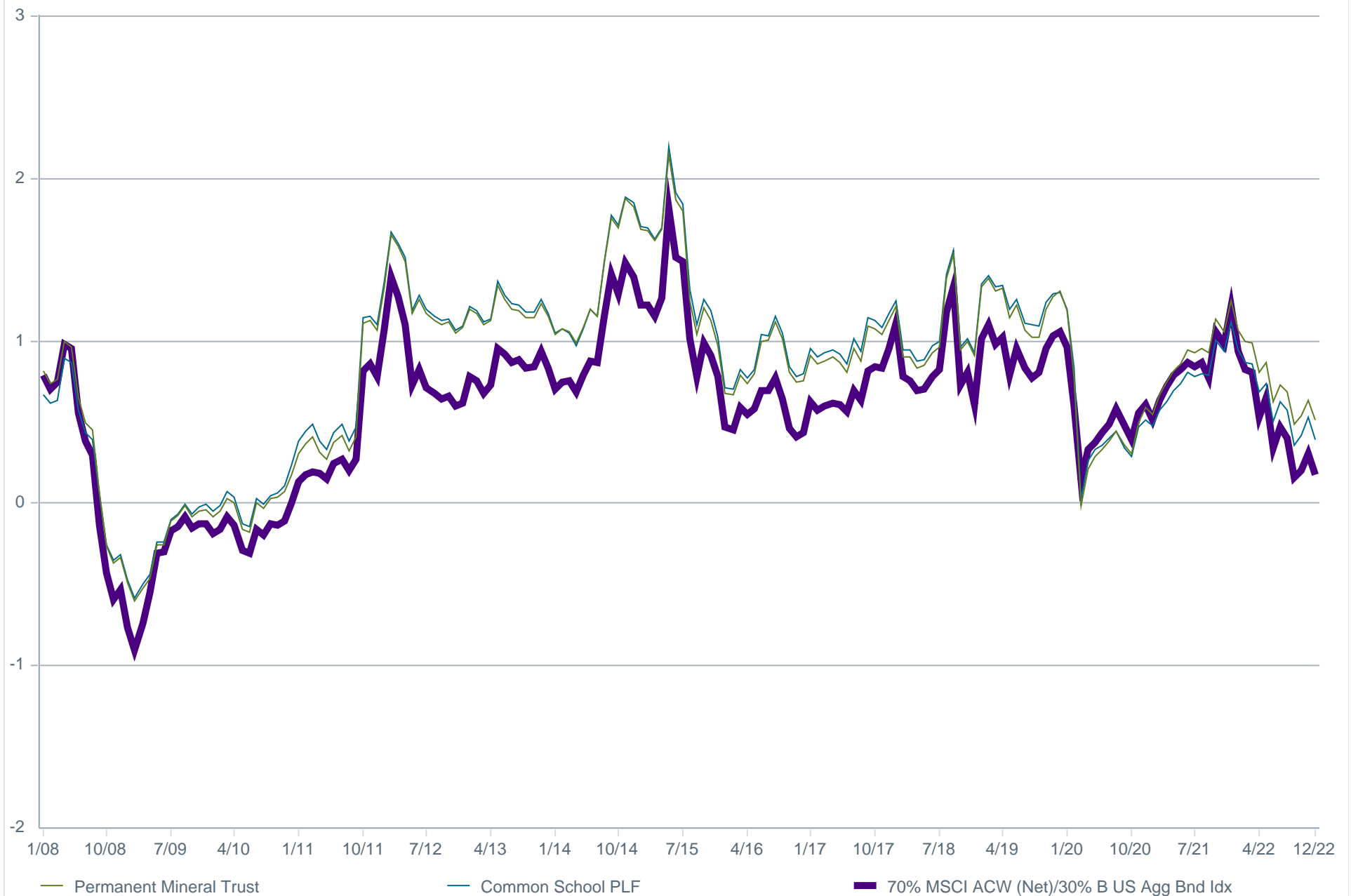
Performance shown is net of fees and excludes Public Purpose Investments (PPIs) and operational cash. Calculation is based on monthly periodicity.

Volatility as a Percentage of 70% MSCI ACW / 30% BB US Agg Index



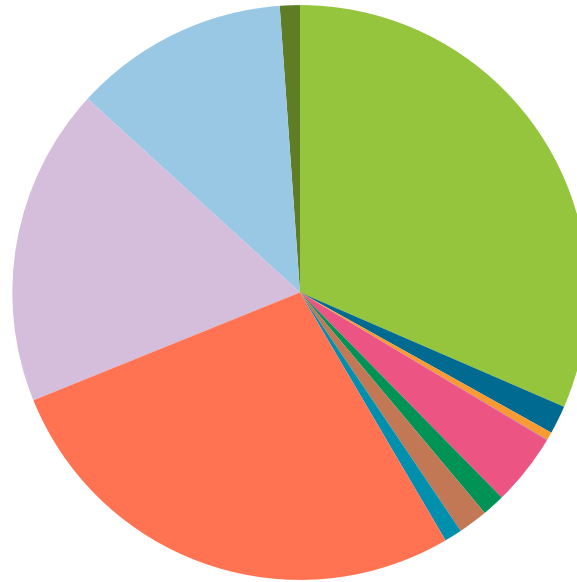
Performance shown is net of fees and excludes PPIs and operational cash. Calculation is based on monthly periodicity.

Sharpe Ratio



Performance shown is net of fees and excludes Public Purpose Investments (PPIs) and operational cash. Calculation is based on monthly periodicity.

December 31, 2022 : \$5,167,378,032



	Market Value (\$)	Allocation (%)
State Street All Cap	1,628,262,954	31.51
Internal Domestic Equity Quantitative	82,632,857	1.60
Internal Domestic Equity Quantamental	31,226	0.00
SPDR S&P 500 ETF Trust	23,256,292	0.45
UW Portfolio Mgmt Program	1,713,044	0.03
Van Berkomp	209,083,273	4.05
BlackRock Small Cap	65,735,460	1.27
Internal Small Cap Equity Quantitative	85,931,939	1.66
Internal Small Cap Equity Quantamental	51,160,829	0.99
Northern Trust	1,411,276,551	27.31
Arrowstreet	924,943,837	17.90
Harding Loevner	625,069,673	12.10
Vanguard FTSE All World Ex US ETF	58,280,097	1.13

Allocations shown may not sum up to 100% exactly due to rounding.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
All Cap US Equity Composite	1,734,183,329	33.56	7.70	2.53	-18.30	-18.30	7.22	8.55	10.57	N/A	28.36	10.16	11/01/2014
All Cap US Equity Custom Index			7.56	2.31	-18.11	-18.11	7.65	9.15	11.30	12.32	28.71	9.99	
Difference			0.14	0.22	-0.19	-0.19	-0.43	-0.60	-0.73	N/A	-0.35	0.17	
State Street All Cap	1,628,262,954	31.51	7.56	2.31	-18.13	-18.13	7.37	8.84	11.03	N/A	28.64	9.58	01/01/2015
State Street All Cap Custom Index			7.56	2.31	-18.11	-18.11	7.43	8.80	11.02	12.11	28.71	9.60	
Difference			0.00	0.00	-0.02	-0.02	-0.06	0.04	0.01	N/A	-0.07	-0.02	
Internal Domestic Equity Quantitative	82,632,857	1.60	8.33	4.09	-16.22	-16.22	N/A	N/A	N/A	N/A	N/A	-3.77	06/01/2021
S&P 500 Index (Cap Wtd)			7.56	2.31	-18.11	-18.11	7.66	9.42	11.48	12.56	28.71	-4.10	
Difference			0.77	1.78	1.89	1.89	N/A	N/A	N/A	N/A	N/A	0.33	
SPDR S&P 500 ETF Trust	23,256,292	0.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-6.13	12/01/2022
S&P 500 Index (Cap Wtd)			7.56	2.31	-18.11	-18.11	7.66	9.42	11.48	12.56	28.71	-5.76	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.37	
UW Portfolio Mgmt Program	1,713,044	0.03	4.29	1.12	-18.28	-18.28	4.94	5.99	8.82	9.83	23.24	5.49	04/01/2006
S&P 500 Index (Cap Wtd)			7.56	2.31	-18.11	-18.11	7.66	9.42	11.48	12.56	28.71	8.88	
Difference			-3.27	-1.19	-0.17	-0.17	-2.72	-3.43	-2.66	-2.73	-5.47	-3.39	
Small Cap US Equity Composite	411,911,501	7.97	11.84	8.07	-15.68	-15.68	4.31	3.06	7.29	N/A	17.53	5.38	11/01/2014
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	6.52	
Difference			5.61	4.16	4.76	4.76	1.21	-1.07	-0.61	N/A	2.71	-1.14	
Van Berkomp	209,083,273	4.05	13.46	9.92	-12.67	-12.67	N/A	N/A	N/A	N/A	15.75	8.13	03/01/2020
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	7.77	
Difference			7.23	6.01	7.77	7.77	N/A	N/A	N/A	N/A	0.93	0.36	
BlackRock Small Cap	65,735,460	1.27	7.96	5.89	-18.92	-18.92	N/A	N/A	N/A	N/A	15.44	10.09	08/01/2020
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	8.78	
Difference			1.73	1.98	1.52	1.52	N/A	N/A	N/A	N/A	0.62	1.31	
Internal Small Cap Equity Quantamental	51,160,829	0.99	13.61	8.67	-21.09	-21.09	N/A	N/A	N/A	N/A	N/A	-11.60	06/01/2021
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	-13.67	
Difference			7.38	4.76	-0.65	-0.65	N/A	N/A	N/A	N/A	N/A	2.07	

Performance shown is net of fees. International Equity Custom Index consists of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter. The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter. SSGA Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Internal Small Cap Equity Quantitative	85,931,939	1.66	9.56	4.18	-15.21	-15.21	N/A	N/A	N/A	N/A	N/A	-12.73	11/01/2021
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	-19.22	
Difference			3.33	0.27	5.23	5.23	N/A	N/A	N/A	N/A	N/A	6.49	

Performance shown is net of fees. International Equity Custom Index consists of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter. The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter. SSGA Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Int'l Equity	3,019,570,158	58.44	14.41	3.99	-14.53	-14.53	3.19	2.95	6.25	4.97	9.98	5.45	01/01/2004
International Equity Custom Index			14.28	2.96	-16.00	-16.00	0.07	0.88	4.80	3.80	7.82	4.60	
Difference			0.13	1.03	1.47	1.47	3.12	2.07	1.45	1.17	2.16	0.85	
Northern Trust	1,411,276,551	27.31	14.22	2.91	-15.88	-15.88	0.12	1.02	4.93	3.91	7.83	4.37	08/01/2010
MSCI ACW Ex US Index (USD) (Net)			14.28	2.96	-16.00	-16.00	0.07	0.88	4.80	3.80	7.82	4.26	
Difference			-0.06	-0.05	0.12	0.12	0.05	0.14	0.13	0.11	0.01	0.11	
Arrowstreet	924,943,837	17.90	15.02	4.21	-10.47	-10.47	7.79	N/A	N/A	N/A	13.92	5.36	03/01/2018
MSCI ACW Ex US IM Index (USD) (Net)			14.15	3.09	-16.58	-16.58	0.20	0.85	4.84	3.98	8.53	0.75	
Difference			0.87	1.12	6.11	6.11	7.59	N/A	N/A	N/A	5.39	4.61	
Harding Loevner	625,069,673	12.10	13.95	5.63	-17.30	-17.30	2.49	N/A	N/A	N/A	8.19	2.49	01/01/2020
MSCI ACW Ex US Index (USD) (Net)			14.28	2.96	-16.00	-16.00	0.07	0.88	4.80	3.80	7.82	0.07	
Difference			-0.33	2.67	-1.30	-1.30	2.42	N/A	N/A	N/A	0.37	2.42	
Vanguard FTSE All World Ex US ETF	58,280,097	1.13	12.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.41	10/01/2022
FTSE All Wrld Ex US Index (USD) (Net)			14.28	3.15	-15.63	-15.63	0.46	1.11	4.95	4.02	8.21	14.28	
Difference			-1.87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.87	

Performance shown is net of fees. International Equity Custom Index consists of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter. The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter. SSGA Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
All Cap US Equity Composite	1,734,183,329	33.56	7.71	2.54	-18.27	-18.27	7.26	8.61	10.66	N/A	28.41	10.28	11/01/2014
All Cap US Equity Custom Index			7.56	2.31	-18.11	-18.11	7.65	9.15	11.30	12.32	28.71	9.99	
Difference			0.15	0.23	-0.16	-0.16	-0.39	-0.54	-0.64	N/A	-0.30	0.29	
State Street All Cap	1,628,262,954	31.51	7.57	2.33	-18.10	-18.10	7.41	8.89	11.07	N/A	28.69	9.62	01/01/2015
State Street All Cap Custom Index			7.56	2.31	-18.11	-18.11	7.43	8.80	11.02	12.11	28.71	9.60	
Difference			0.01	0.02	0.01	0.01	-0.02	0.09	0.05	N/A	-0.02	0.02	
IM U.S. All Cap Equity (SA+CF) Median			9.35	3.63	-16.64	-16.64	7.10	8.31	10.60	11.56	25.28	9.02	
State Street All Cap Rank			66	67	60	60	46	39	36	N/A	27	41	
Internal Domestic Equity Quantitative	82,632,857	1.60	8.34	4.09	-16.22	-16.22	N/A	N/A	N/A	N/A	N/A	-3.76	06/01/2021
S&P 500 Index (Cap Wtd)			7.56	2.31	-18.11	-18.11	7.66	9.42	11.48	12.56	28.71	-4.10	
Difference			0.78	1.78	1.89	1.89	N/A	N/A	N/A	N/A	N/A	0.34	
IM U.S. Large Cap Core Equity (SA+CF) Median			7.91	2.95	-16.49	-16.49	7.63	9.20	11.32	12.56	27.71	-3.95	
Internal Domestic Equity Quantitative Rank			44	32	48	48	N/A	N/A	N/A	N/A	N/A	47	
SPDR S&P 500 ETF Trust	23,256,292	0.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-6.12	12/01/2022
S&P 500 Index (Cap Wtd)			7.56	2.31	-18.11	-18.11	7.66	9.42	11.48	12.56	28.71	-5.76	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.36	
IM U.S. Large Cap Core Equity (MF) Median			8.09	2.77	-17.96	-17.96	7.82	9.53	11.50	12.61	27.91	-5.44	
SPDR S&P 500 ETF Trust Rank			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	86	
UW Portfolio Mgmt Program	1,713,044	0.03	4.29	1.12	-18.28	-18.28	4.94	5.99	8.82	9.83	23.24	5.49	04/01/2006
S&P 500 Index (Cap Wtd)			7.56	2.31	-18.11	-18.11	7.66	9.42	11.48	12.56	28.71	8.88	
Difference			-3.27	-1.19	-0.17	-0.17	-2.72	-3.43	-2.66	-2.73	-5.47	-3.39	
IM U.S. Large Cap Core Equity (SA+CF) Median			7.91	2.95	-16.49	-16.49	7.63	9.20	11.32	12.56	27.71	9.00	
UW Portfolio Mgmt Program Rank			96	86	68	68	94	95	95	96	80	99	

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Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Small Cap US Equity Composite	411,911,501	7.97	11.95	8.31	-15.28	-15.28	4.81	3.48	7.79	N/A	18.21	5.89	11/01/2014
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	6.52	
Difference			5.72	4.40	5.16	5.16	1.71	-0.65	-0.11	N/A	3.39	-0.63	
Van Berkom	209,083,273	4.05	13.65	10.31	-12.00	-12.00	N/A	N/A	N/A	N/A	16.73	8.98	03/01/2020
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	7.77	
Difference			7.42	6.40	8.44	8.44	N/A	N/A	N/A	N/A	1.91	1.21	
IM U.S. Small Cap Core Equity (SA+CF) Median			9.08	5.60	-16.18	-16.18	6.59	7.25	10.02	11.18	24.10	11.63	
Van Berkom Rank			2	6	15	15	N/A	N/A	N/A	N/A	86	84	
BlackRock Small Cap	65,735,460	1.27	8.07	6.11	-18.56	-18.56	N/A	N/A	N/A	N/A	15.95	10.58	08/01/2020
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	8.78	
Difference			1.84	2.20	1.88	1.88	N/A	N/A	N/A	N/A	1.13	1.80	
IM U.S. Small Cap Core Equity (SA+CF) Median			9.08	5.60	-16.18	-16.18	6.59	7.25	10.02	11.18	24.10	12.27	
BlackRock Small Cap Rank			60	41	70	70	N/A	N/A	N/A	N/A	89	71	
Internal Small Cap Equity Quantamental	51,160,829	0.99	13.61	8.67	-21.09	-21.09	N/A	N/A	N/A	N/A	N/A	-11.60	06/01/2021
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	-13.67	
Difference			7.38	4.76	-0.65	-0.65	N/A	N/A	N/A	N/A	N/A	2.07	
IM U.S. Small Cap Core Equity (SA+CF) Median			9.08	5.60	-16.18	-16.18	6.59	7.25	10.02	11.18	24.10	-7.86	
Internal Small Cap Equity Quantamental Rank			2	11	82	82	N/A	N/A	N/A	N/A	N/A	83	
Internal Small Cap Equity Quantitative	85,931,939	1.66	9.56	4.19	-15.21	-15.21	N/A	N/A	N/A	N/A	N/A	-12.72	11/01/2021
Russell 2000 Index			6.23	3.91	-20.44	-20.44	3.10	4.13	7.90	9.01	14.82	-19.22	
Difference			3.33	0.28	5.23	5.23	N/A	N/A	N/A	N/A	N/A	6.50	
IM U.S. Small Cap Core Equity (SA+CF) Median			9.08	5.60	-16.18	-16.18	6.59	7.25	10.02	11.18	24.10	-13.08	
Internal Small Cap Equity Quantitative Rank			45	69	39	39	N/A	N/A	N/A	N/A	N/A	46	

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Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Int'l Equity	3,019,570,158	58.44	14.47	4.11	-14.32	-14.32	3.45	3.18	6.48	5.22	10.25	5.65	01/01/2004
International Equity Custom Index			14.28	2.96	-16.00	-16.00	0.07	0.88	4.80	3.80	7.82	4.60	
Difference			0.19	1.15	1.68	1.68	3.38	2.30	1.68	1.42	2.43	1.05	
Northern Trust	1,411,276,551	27.31	14.23	2.92	-15.86	-15.86	0.15	1.04	4.96	3.94	7.86	4.40	08/01/2010
MSCI ACW Ex US Index (USD) (Net)			14.28	2.96	-16.00	-16.00	0.07	0.88	4.80	3.80	7.82	4.26	
Difference			-0.05	-0.04	0.14	0.14	0.08	0.16	0.16	0.14	0.04	0.14	
Arrowstreet	924,943,837	17.90	15.13	4.42	-10.10	-10.10	8.23	N/A	N/A	N/A	14.38	5.81	03/01/2018
MSCI ACW Ex US IM Index (USD) (Net)			14.15	3.09	-16.58	-16.58	0.20	0.85	4.84	3.98	8.53	0.75	
Difference			0.98	1.33	6.48	6.48	8.03	N/A	N/A	N/A	5.85	5.06	
IM All ACWI Ex US (SA+CF) Median			14.99	4.33	-17.08	-17.08	1.18	2.23	5.59	5.66	9.37	2.04	
Arrowstreet Rank			47	48	16	16	1	N/A	N/A	N/A	12	5	
Harding Loevner	625,069,673	12.10	14.09	5.86	-16.94	-16.94	2.94	N/A	N/A	N/A	8.65	2.94	01/01/2020
MSCI ACW Ex US Index (USD) (Net)			14.28	2.96	-16.00	-16.00	0.07	0.88	4.80	3.80	7.82	0.07	
Difference			-0.19	2.90	-0.94	-0.94	2.87	N/A	N/A	N/A	0.83	2.87	
IM All ACWI Ex US (SA+CF) Median			14.99	4.33	-17.08	-17.08	1.18	2.23	5.59	5.66	9.37	1.18	
Harding Loevner Rank			69	19	50	50	20	N/A	N/A	N/A	58	20	
Vanguard FTSE All World Ex US ETF	58,280,097	1.13	12.43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.43	10/01/2022
FTSE All Wrld Ex US Index (USD) (Net)			14.28	3.15	-15.63	-15.63	0.46	1.11	4.95	4.02	8.21	14.28	
Difference			-1.85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.85	
IM All ACWI Ex US (SA+CF) Median			14.99	4.33	-17.08	-17.08	1.18	2.23	5.59	5.66	9.37	14.99	
Vanguard FTSE All World Ex US ETF Rank			88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	88	

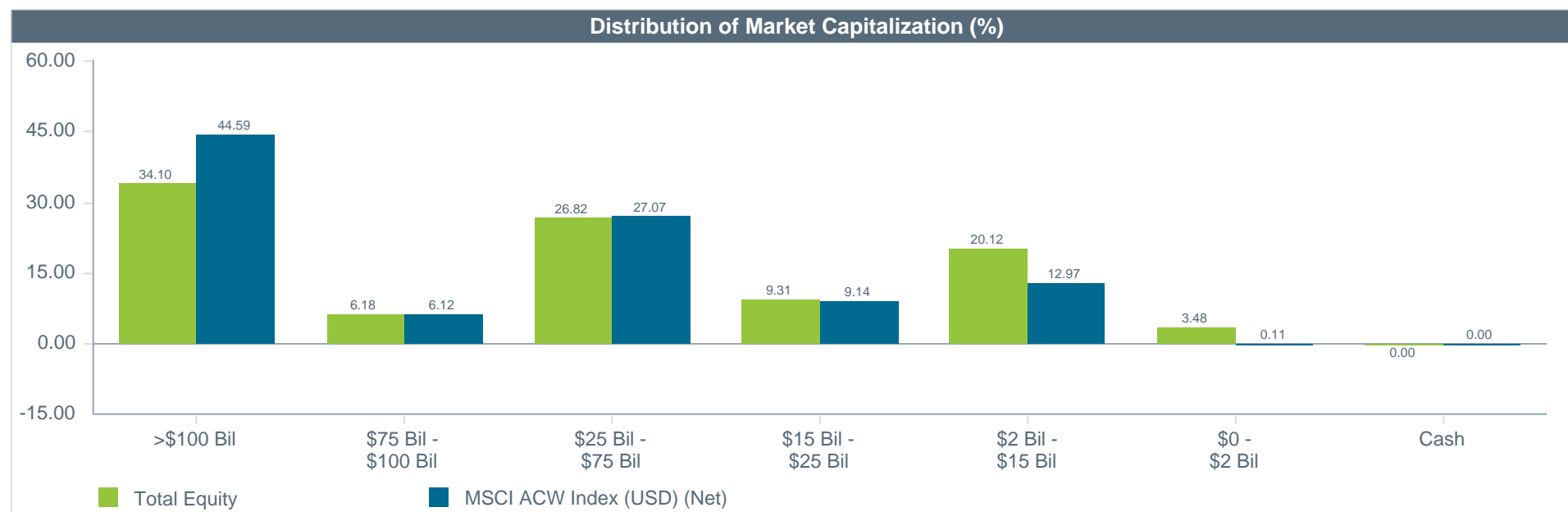
Performance shown is gross of fees. International Equity Custom Index consists of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter. The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter. SSGA Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Total Equity vs. MSCI ACW Index (USD) (Net)
Portfolio Characteristics

As of December 31, 2022

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	2.05	3.71	-1.66	-5.83
Microsoft Corp	1.89	3.02	-1.13	3.26
Roche Holding AG	0.96	0.39	0.57	-4.67
Taiwan Semiconductor Mfg (ADR)	0.82	0.64	0.18	9.28
Amazon.com Inc	0.77	1.37	-0.60	-25.66
Novo Nordisk A/S	0.70	0.40	0.30	34.34
Tencent Holdings LTD	0.67	0.48	0.19	26.22
Samsung Electronics Co Ltd	0.65	0.37	0.28	18.92
ASML Holding NV	0.63	0.39	0.24	27.02
Total SA	0.60	0.28	0.32	34.71
% of Portfolio	9.74	11.05	-1.31	

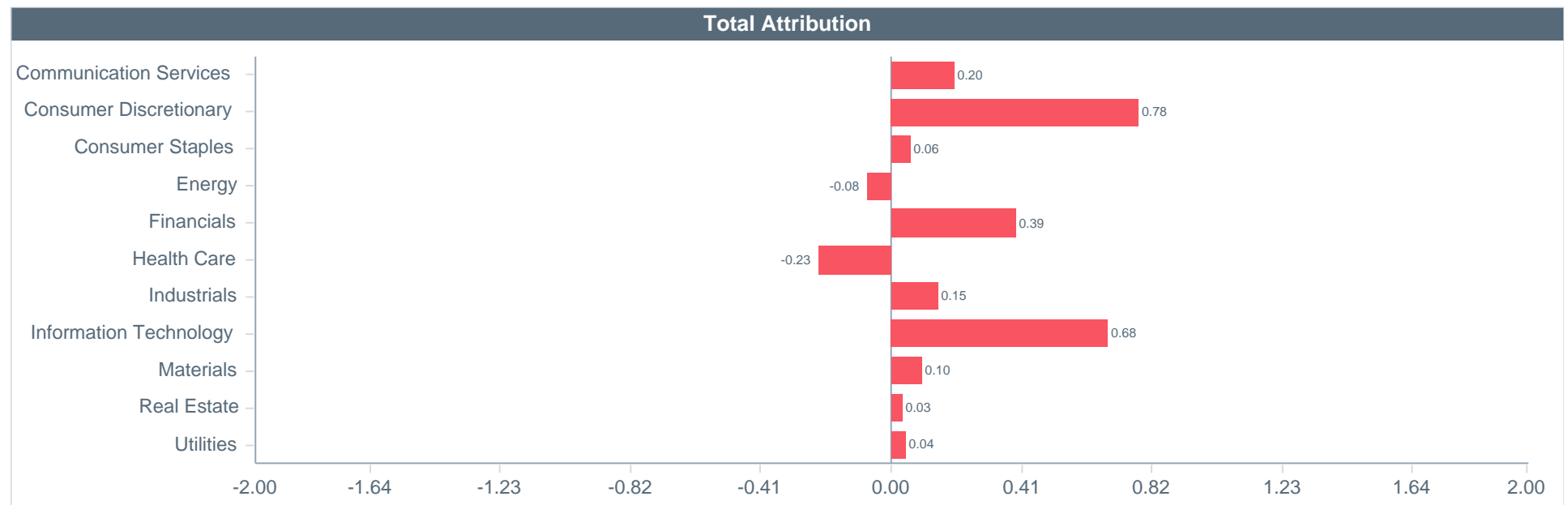
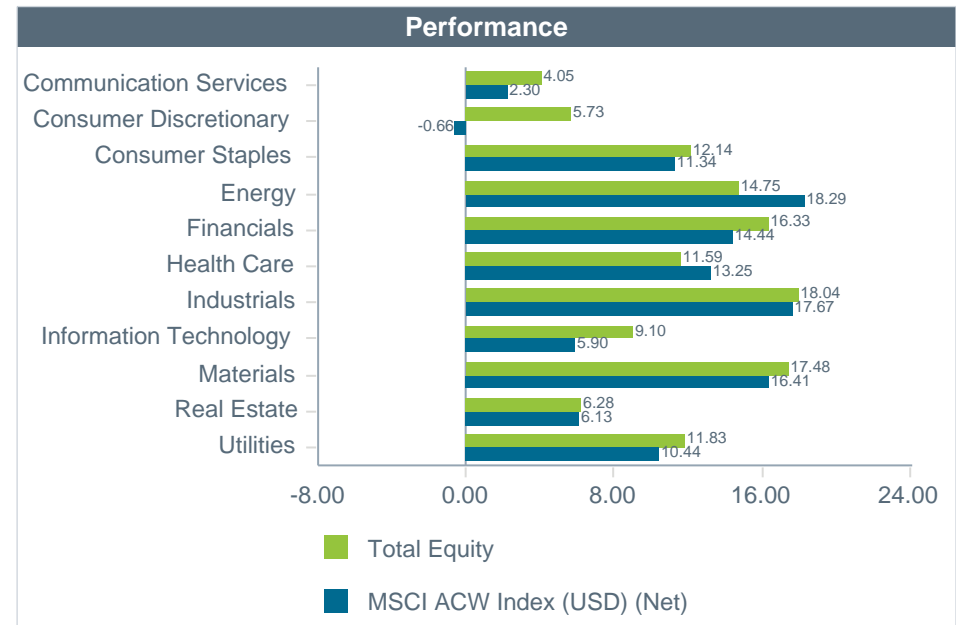
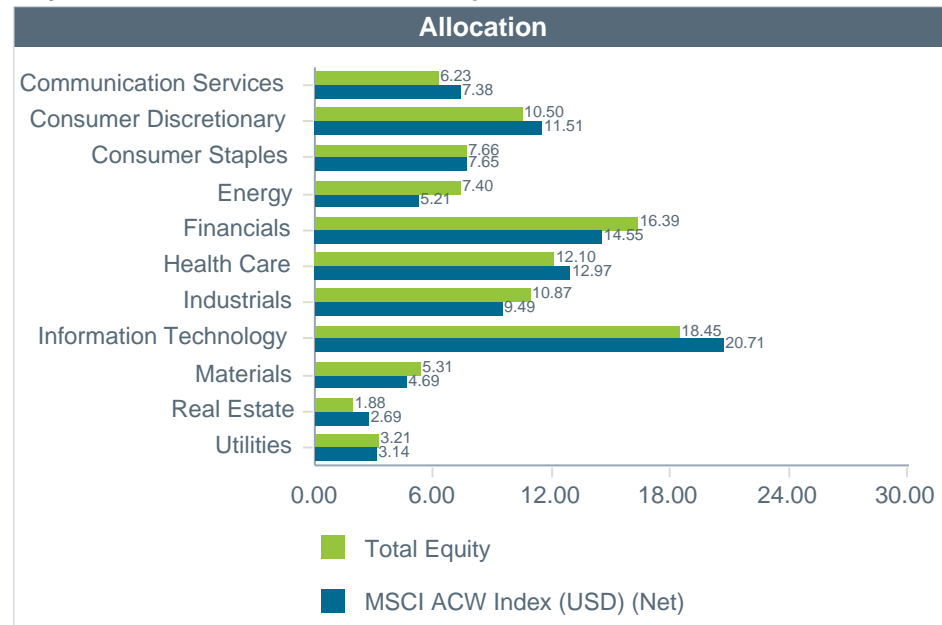
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	186,157	269,824
Median Mkt. Cap (\$M)	4,288	11,547
Price/Earnings Ratio	12.01	15.67
Price/Book Ratio	2.83	3.21
5 Yr. EPS Growth Rate (%)	16.86	15.76
Current Yield (%)	3.16	2.39
Beta (5 Years, Monthly)	1.00	1.00
Number of Securities	6,763	2,885



A stock with multiple share classes may be shown twice in the Top Ten Equity Holdings.

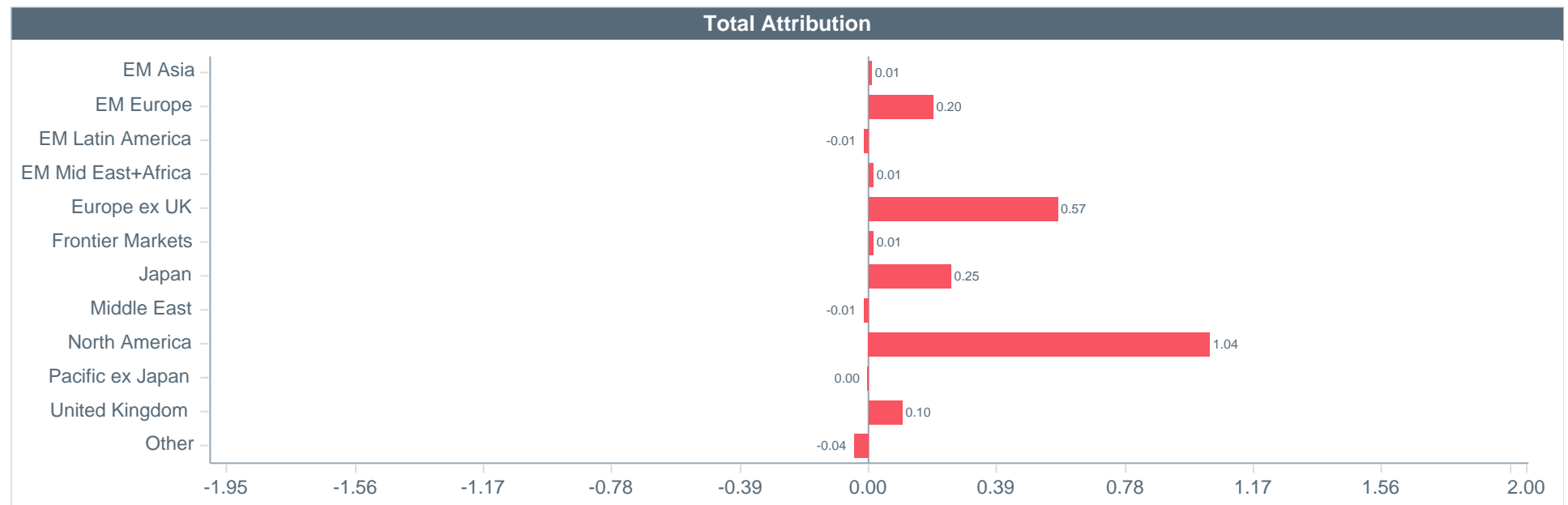
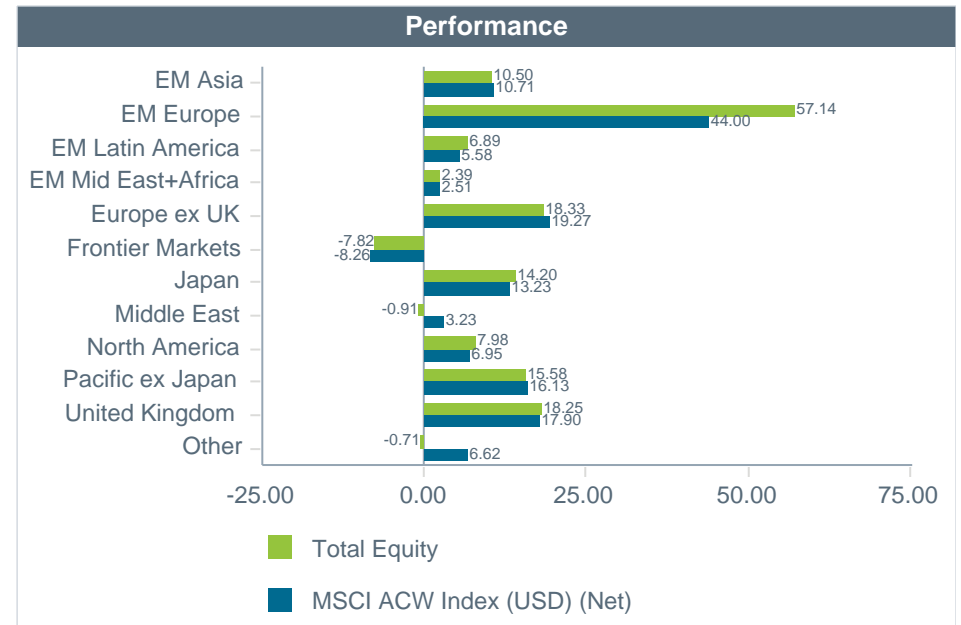
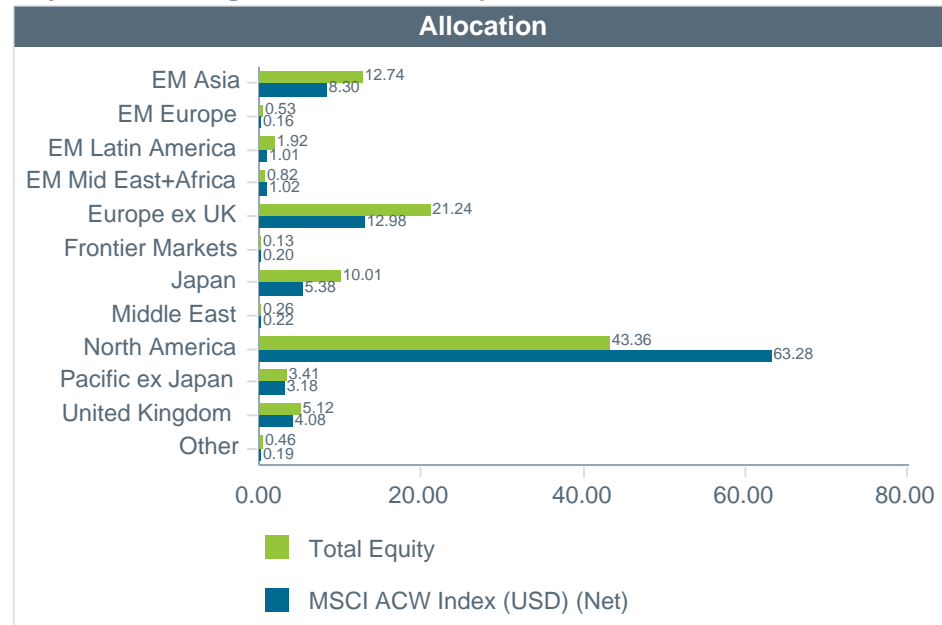
Wyoming State Treasurer's Office
Total Equity vs. MSCI ACW Index (USD) (Net)
Buy and Hold Sector Attribution Graph

1 Quarter Ending December 31, 2022



Wyoming State Treasurer's Office
Total Equity vs. MSCI ACW Index (USD) (Net)
Buy and Hold Region Attribution Graph

1 Quarter Ending December 31, 2022

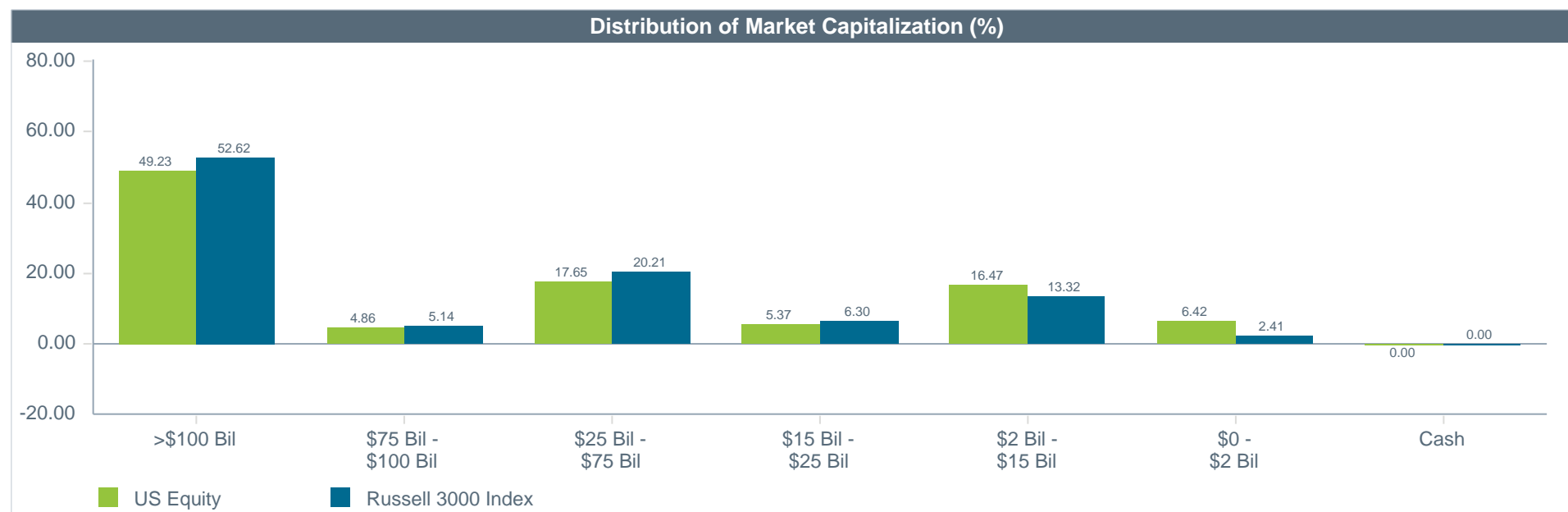


Wyoming State Treasurer's Office
US Equity vs. Russell 3000 Index
Portfolio Characteristics

As of December 31, 2022

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	5.00	5.18	-0.18	-5.83
Microsoft Corp	4.61	4.76	-0.15	3.26
Amazon.com Inc	1.87	1.98	-0.11	-25.66
Berkshire Hathaway Inc	1.40	1.48	-0.08	15.68
Alphabet Inc	1.36	1.41	-0.05	-7.76
Unitedhealth Group Inc	1.27	1.31	-0.04	5.30
Alphabet Inc	1.21	1.25	-0.04	-7.72
Johnson & Johnson	1.19	1.23	-0.04	8.83
Exxon Mobil Corp	1.17	1.20	-0.03	27.35
JPMorgan Chase & Co	1.01	1.04	-0.03	29.49
% of Portfolio	20.09	20.84	-0.75	

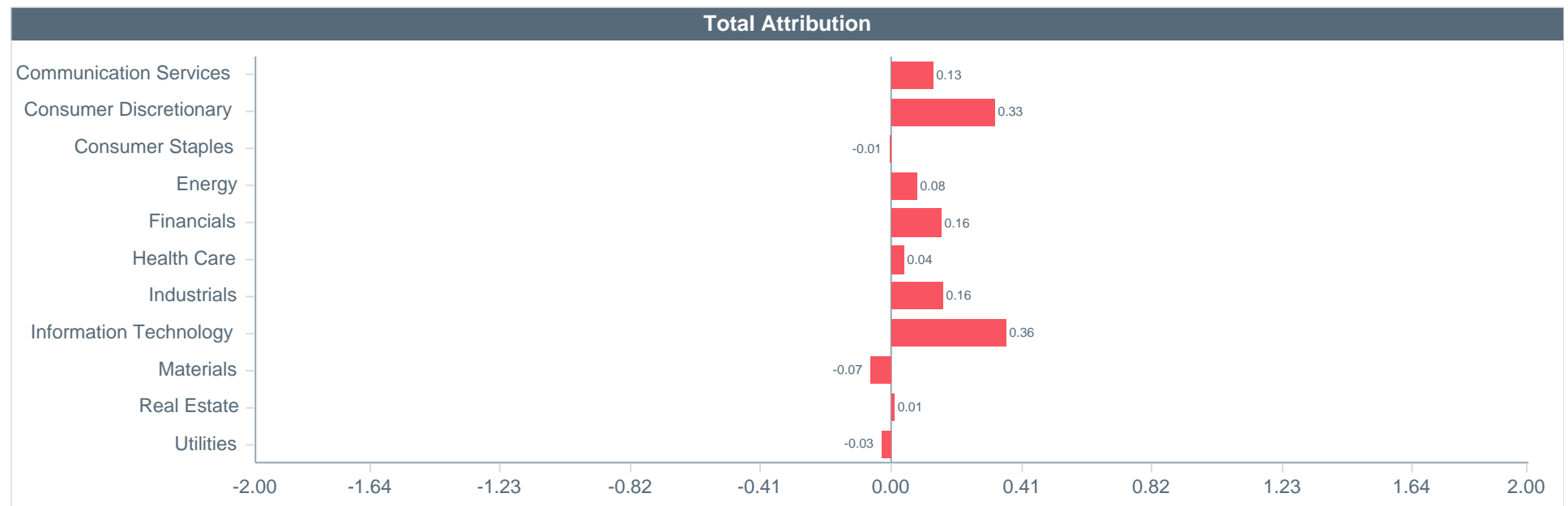
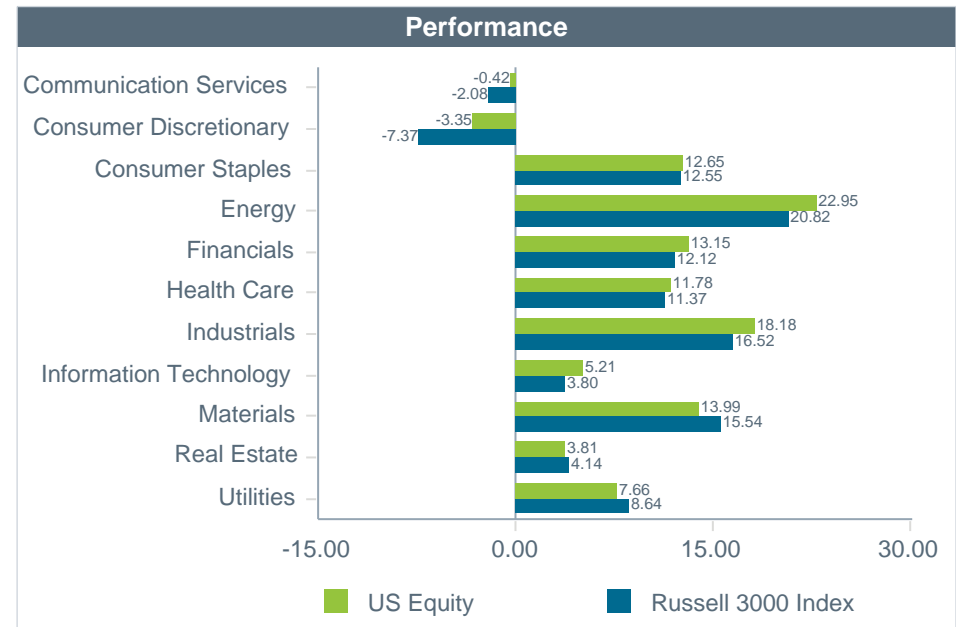
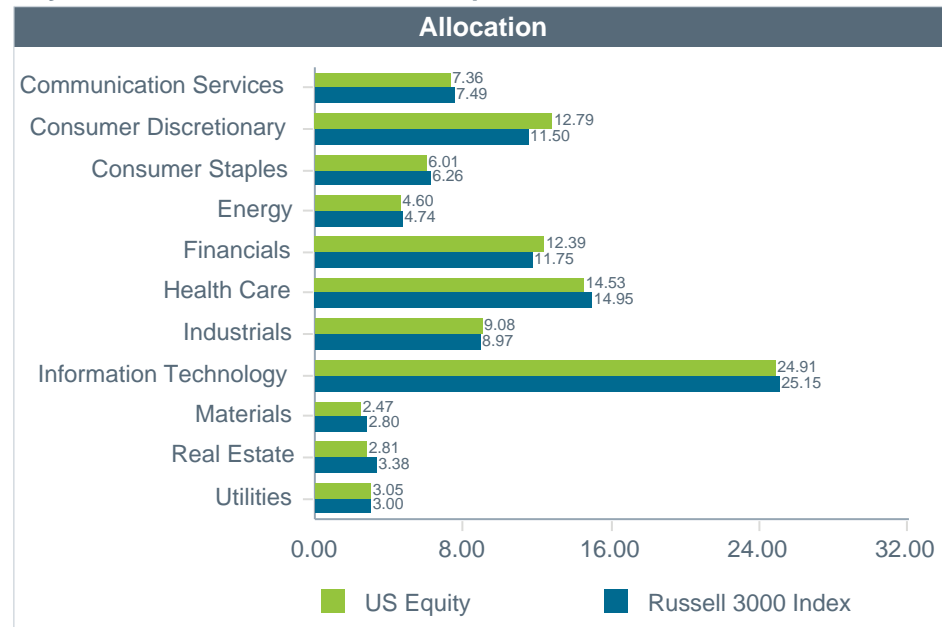
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	338,624	354,764
Median Mkt. Cap (\$M)	2,843	1,954
Price/Earnings Ratio	17.32	18.12
Price/Book Ratio	3.52	3.64
5 Yr. EPS Growth Rate (%)	18.61	17.90
Current Yield (%)	1.67	1.72
Beta (5 Years, Monthly)	1.00	1.00
Number of Securities	2,108	2,960



A stock with multiple share classes may be shown twice in the Top Ten Equity Holdings.

Wyoming State Treasurer's Office
US Equity vs. Russell 3000 Index
Buy and Hold Sector Attribution Graph

1 Quarter Ending December 31, 2022

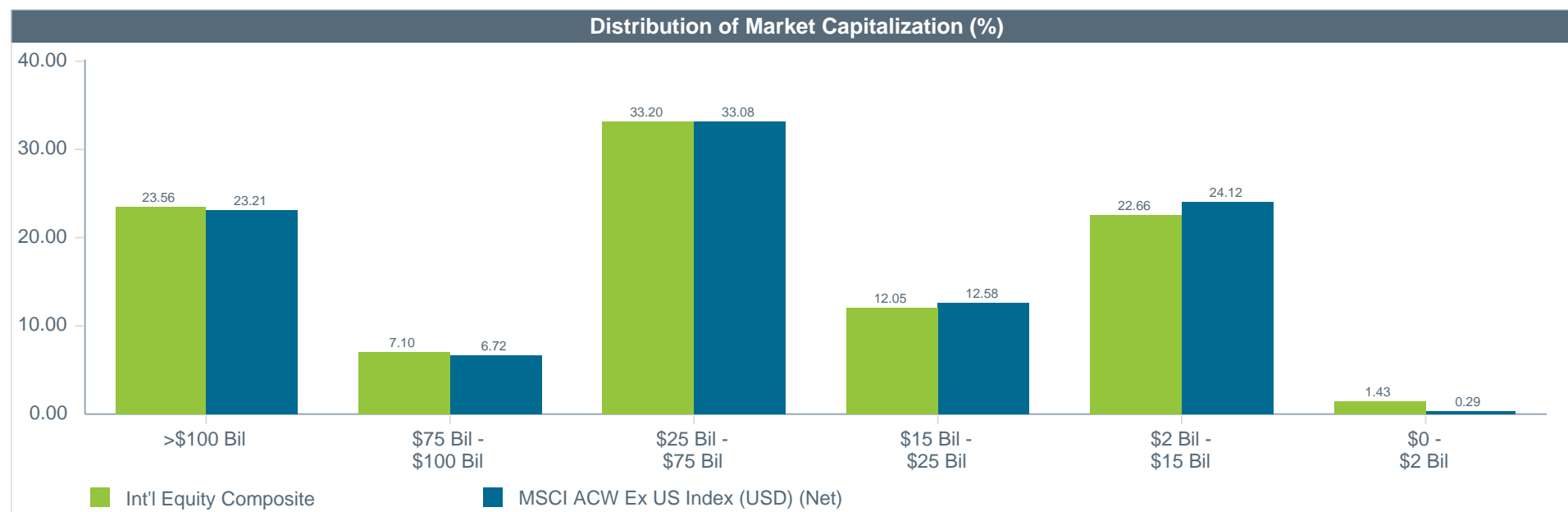


Wyoming State Treasurer's Office
Int'l Equity Composite vs. MSCI ACW Ex US Index (USD) (Net)
Portfolio Characteristics

As of December 31, 2022

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Roche Holding AG	1.62	0.99	0.63	-4.67
Taiwan Semiconductor Mfg (ADR)	1.39	1.61	-0.22	9.28
Novo Nordisk A/S	1.19	1.00	0.19	34.34
Tencent Holdings LTD	1.13	1.20	-0.07	26.22
Samsung Electronics Co Ltd	1.10	0.94	0.16	18.92
ASML Holding NV	1.08	0.98	0.10	27.02
Total SA	1.03	0.70	0.33	34.71
Shell Plc	1.01	0.91	0.10	12.99
Ping An Insurance Group	0.97	0.19	0.78	32.65
Novartis AG	0.90	0.88	0.02	17.47
% of Portfolio	11.42	9.40	2.02	

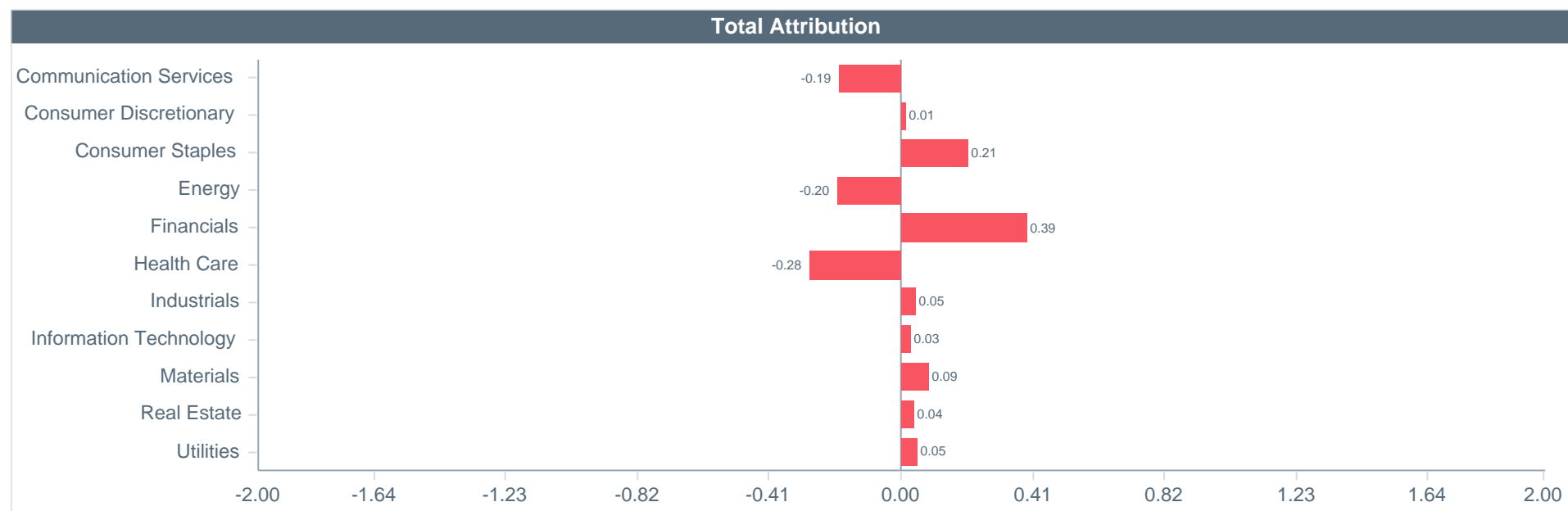
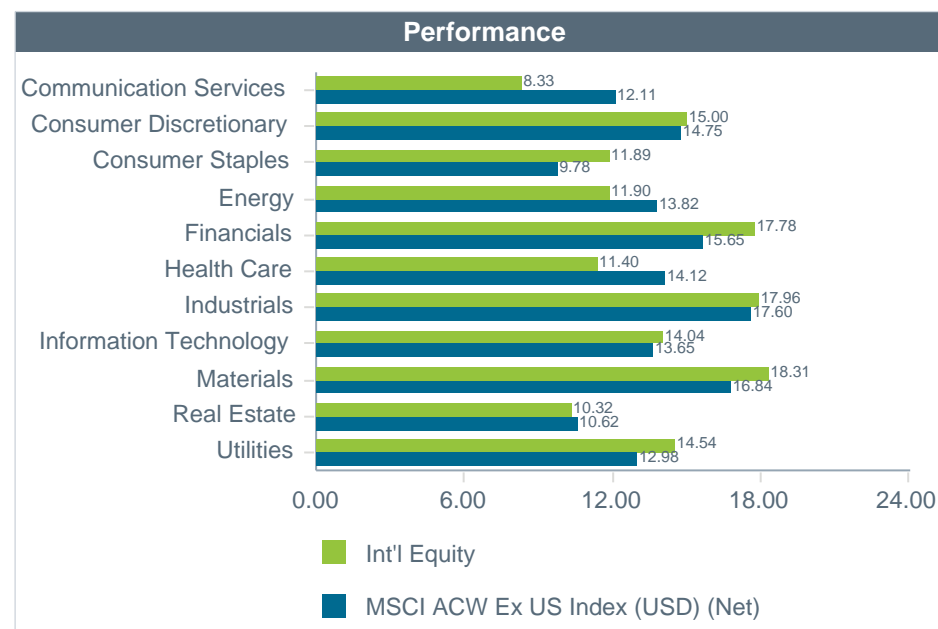
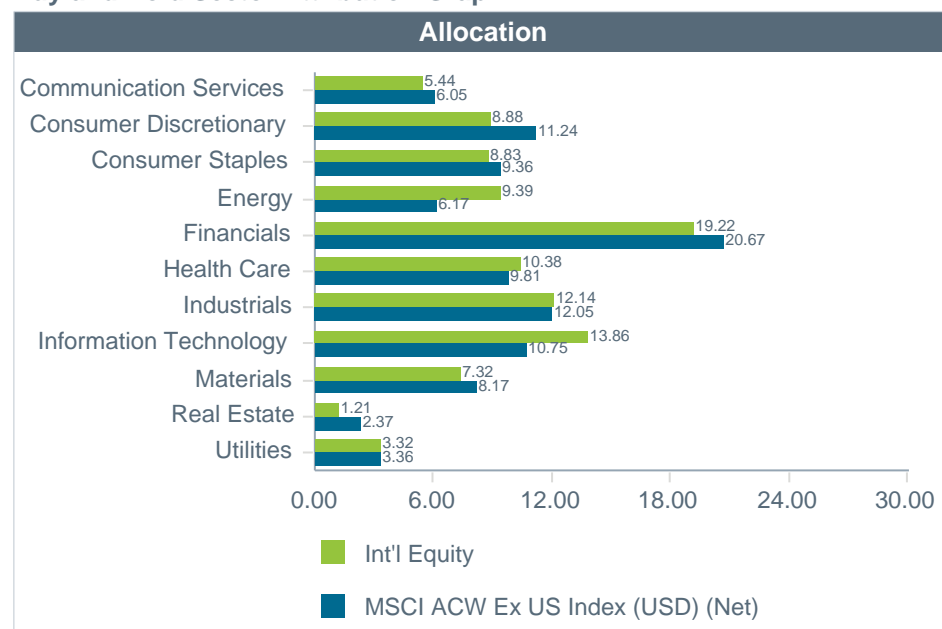
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	79,971	77,663
Median Mkt. Cap (\$M)	4,882	8,629
Price/Earnings Ratio	9.71	12.19
Price/Book Ratio	2.38	2.42
5 Yr. EPS Growth Rate (%)	15.50	12.16
Current Yield (%)	4.20	3.38
Beta (5 Years, Monthly)	1.01	1.00
Number of Securities	4,690	2,261



The International Equity Custom Index currently consists of the MSCI ACW Ex US Index (USD) (Net).

Wyoming State Treasurer's Office
 Int'l Equity vs. MSCI ACW Ex US Index (USD) (Net)
 Buy and Hold Sector Attribution Graph

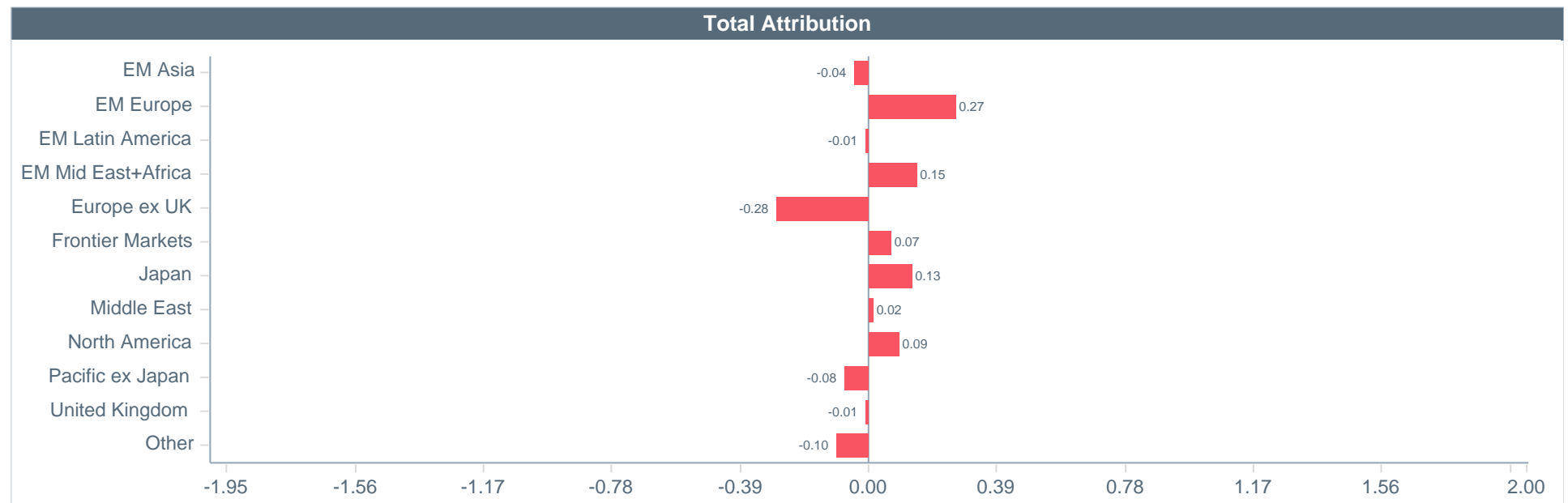
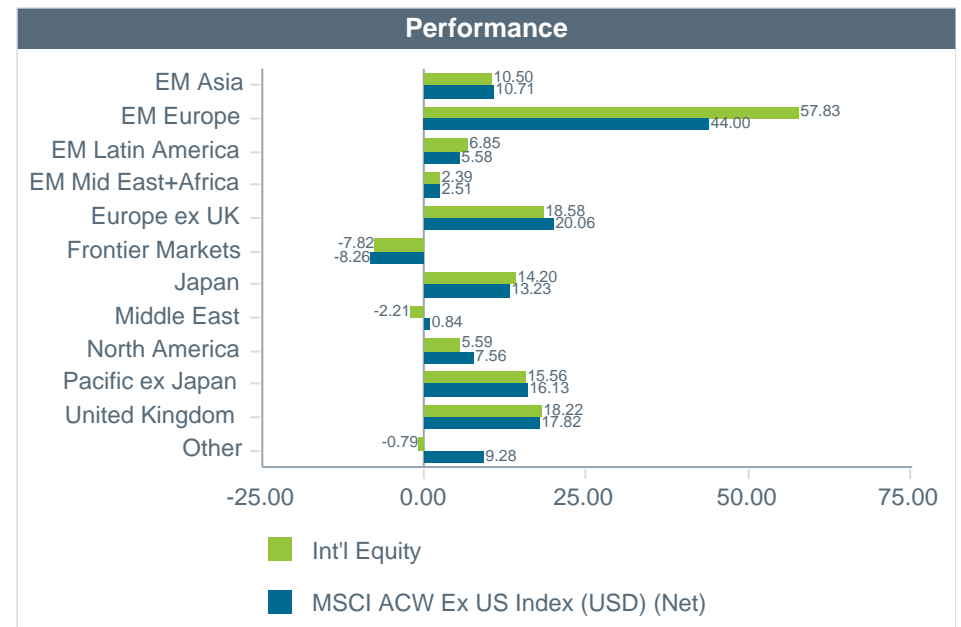
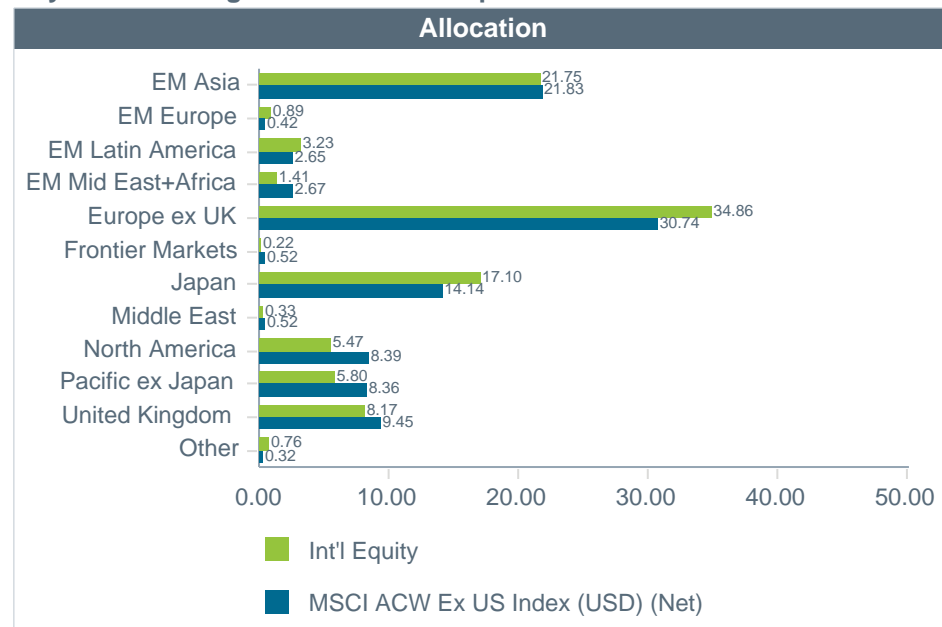
1 Quarter Ending December 31, 2022



The International Equity Custom Index currently consists of the MSCI ACW Ex US Index (USD) (Net).

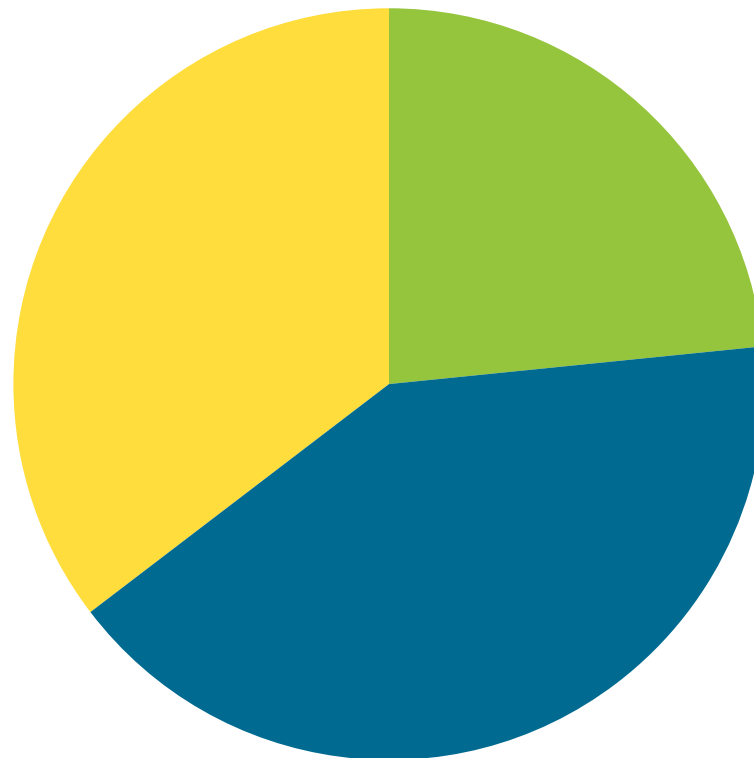
Wyoming State Treasurer's Office
 Int'l Equity vs. MSCI ACW Ex US Index (USD) (Net)
 Buy and Hold Region Attribution Graph

1 Quarter Ending December 31, 2022



The International Equity Custom Index currently consists of the MSCI ACW Ex US Index (USD) (Net).

December 31, 2022 : \$1,323,095,773



	Market Value (\$)	Allocation (%)
Cohen & Steers Preferred Stock	309,576,639	23.40
Harvest Fund Advisors	545,525,935	41.23
Harvest Fund Advisors Passive	467,993,199	35.37

Allocations shown may not sum up to 100% exactly due to rounding.

Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Cohen & Steers Preferred Stock	2.46	0.79	-11.65	-11.65	-0.30	N/A	N/A	N/A	4.17	3.33	07/01/2018
Preferred Stock Custom Index	3.10	0.93	-12.04	-12.04	0.13	2.49	3.33	4.21	5.71	2.48	
Difference	-0.64	-0.14	0.39	0.39	-0.43	N/A	N/A	N/A	-1.54	0.85	
MLP	8.14	13.79	28.02	28.02	10.91	N/A	N/A	N/A	40.91	4.47	08/01/2018
MLP Custom Index	9.27	13.06	26.26	26.26	9.39	4.45	5.26	2.65	39.33	3.42	
Difference	-1.13	0.73	1.76	1.76	1.52	N/A	N/A	N/A	1.58	1.05	
Harvest Fund Advisors	7.36	14.45	30.50	30.50	11.85	N/A	N/A	N/A	41.79	5.07	08/01/2018
MLP Custom Index	9.27	13.06	26.26	26.26	9.39	4.45	5.26	2.65	39.33	3.42	
Difference	-1.91	1.39	4.24	4.24	2.46	N/A	N/A	N/A	2.46	1.65	
Harvest Fund Advisors Passive	9.14	13.22	26.75	26.75	N/A	N/A	N/A	N/A	40.01	11.88	02/01/2020
MLP Custom Index	9.27	13.06	26.26	26.26	9.39	4.45	5.26	2.65	39.33	11.34	
Difference	-0.13	0.16	0.49	0.49	N/A	N/A	N/A	N/A	0.68	0.54	

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends June 30th. Since Inception date shown represents the first full month following initial funding. The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter. The Preferred Stock Custom Index consists of S&P U.S. Preferred Stock Index through 06/30/2021, and 60% ICE BofAML US IG Inst Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index thereafter.

Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

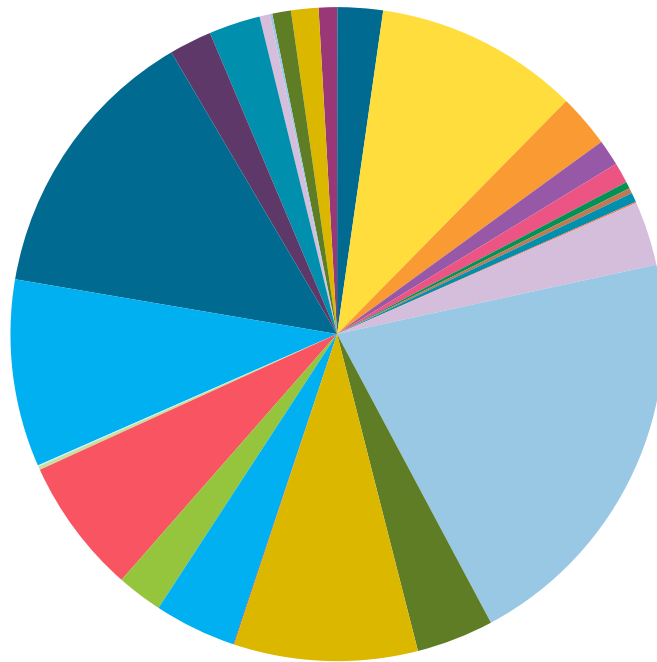
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Cohen & Steers Preferred Stock	2.53	0.93	-11.41	-11.41	-0.01	N/A	N/A	N/A	4.48	3.64	07/01/2018
Preferred Stock Custom Index	3.10	0.93	-12.04	-12.04	0.13	2.49	3.33	4.21	5.71	2.48	
Difference	-0.57	0.00	0.63	0.63	-0.14	N/A	N/A	N/A	-1.23	1.16	
MLP	8.22	13.95	28.38	28.38	11.23	N/A	N/A	N/A	41.34	4.89	08/01/2018
MLP Custom Index	9.27	13.06	26.26	26.26	9.39	4.45	5.26	2.65	39.33	3.42	
Difference	-1.05	0.89	2.12	2.12	1.84	N/A	N/A	N/A	2.01	1.47	
Harvest Fund Advisors	7.51	14.77	31.24	31.24	12.50	N/A	N/A	N/A	42.64	5.70	08/01/2018
MLP Custom Index	9.27	13.06	26.26	26.26	9.39	4.45	5.26	2.65	39.33	3.42	
Difference	-1.76	1.71	4.98	4.98	3.11	N/A	N/A	N/A	3.31	2.28	
Harvest Fund Advisors Passive	9.14	13.22	26.76	26.76	N/A	N/A	N/A	N/A	40.02	11.88	02/01/2020
MLP Custom Index	9.27	13.06	26.26	26.26	9.39	4.45	5.26	2.65	39.33	11.34	
Difference	-0.13	0.16	0.50	0.50	N/A	N/A	N/A	N/A	0.69	0.54	

Performance shown is gross of fees. Wyoming State Treasurer's Office fiscal year ends June 30th. Since Inception date shown represents the first full month following initial funding. The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter. The Preferred Stock Custom Index consists of S&P U.S. Preferred Stock Index through 06/30/2021, and 60% ICE BofAML US IG Inst Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation by Manager - Total Alternative Assets

As of December 31, 2022

December 31, 2022 : \$4,825,308,876



	Market Value (\$)	Allocation (%)
Access Venture Partners II	483,711	0.01
Cheyenne Equity Capital Fund, L.P.	108,211,019	2.24
BlackRock Long Term Private Capital	488,423,491	10.12
Hamilton Lane Nowood Fund, L.P.	126,496,902	2.62
Valor Equity Partners V LP	62,033,436	1.29
GTCR Fund XIII	49,333,025	1.02
Nautic Partners X	16,339,179	0.34
Veritas Capital Vantage Fund	12,615,704	0.26
Stepstone Secondaries Fund V LP	22,318,266	0.46
Dragoneer Opportunities Fund VI	3,169,513	0.07
Neuberger Berman Sauger Fund, L.P.	152,598,100	3.16
Clarion Lion	994,227,964	20.60
UBS Trumbull	184,409,784	3.82
MS Prime	438,430,697	9.09
M&G	1,596,701	0.03
Northwood	196,288,589	4.07
SC Capital	109,131,093	2.26
Realterm	324,337,094	6.72
WestRiver	8,293,093	0.17
PAAMCO - Jackalope Fund	2,843,101	0.06
Grosvenor Diversified Hedge Funds	447,064,702	9.26
Internal Diversified Hedge Funds	668,026,462	13.84
Grosvenor Silvery Lupine Fund Class D	101,471,349	2.10
Internal Opportunistic	38,422	0.00
Macquarie	122,931,094	2.55
MGIF Co-Investment 3	24,778,903	0.51
Accel KKR	5,641,528	0.12
Morgan Stanley Ashbridge Secondaries II (CF)	44,627,500	0.92
Atalaya Evergreen Fund (CF)	65,403,302	1.36
BlackRock Global Credit Opportunities Fund II LP (CF)	43,745,153	0.91

Allocations shown may not sum up to 100% exactly due to rounding.

Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Core Real Estate	-4.86	-4.63	7.73	7.73	9.62	7.81	7.62	8.93	21.65	6.32	01/01/2006
NCREIF ODCE Index (AWA) (Net)	-5.17	-4.87	6.55	6.55	8.97	7.72	7.57	9.11	21.02	6.38	
Difference	0.31	0.24	1.18	1.18	0.65	0.09	0.05	-0.18	0.63	-0.06	
Clarion Lion	-5.27	-4.84	9.02	9.02	10.81	9.58	9.22	10.34	22.73	6.47	01/01/2006
NCREIF ODCE Index (AWA) (Net)	-5.17	-4.87	6.55	6.55	8.97	7.72	7.57	9.11	21.02	6.38	
Difference	-0.10	0.03	2.47	2.47	1.84	1.86	1.65	1.23	1.71	0.09	
UBS Trumbull	-5.37	-5.53	5.17	5.17	4.95	3.60	4.21	6.08	15.40	4.95	07/01/2006
NCREIF ODCE Index (AWA) (Net)	-5.17	-4.87	6.55	6.55	8.97	7.72	7.57	9.11	21.02	6.11	
Difference	-0.20	-0.66	-1.38	-1.38	-4.02	-4.12	-3.36	-3.03	-5.62	-1.16	
MS Prime	-3.69	-3.75	6.13	6.13	N/A	N/A	N/A	N/A	21.48	12.69	10/01/2020
NCREIF ODCE Index (AWA) (Net)	-5.17	-4.87	6.55	6.55	8.97	7.72	7.57	9.11	21.02	12.50	
Difference	1.48	1.12	-0.42	-0.42	N/A	N/A	N/A	N/A	0.46	0.19	
Diversified Hedge Funds Composite	0.95	1.02	-9.13	-9.13	0.76	1.10	1.56	2.46	5.09	2.03	12/01/2007
HFRI FOF Comp Index	1.73	1.37	-5.31	-5.31	3.69	3.01	3.31	3.50	6.17	1.74	
Difference	-0.78	-0.35	-3.82	-3.82	-2.93	-1.91	-1.75	-1.04	-1.08	0.29	
Grosvenor Diversified Hedge Funds	1.73	2.19	-7.31	-7.31	2.29	N/A	N/A	N/A	5.25	2.04	07/01/2018
HFRI FOF Comp Index	1.73	1.37	-5.31	-5.31	3.69	3.01	3.31	3.50	6.17	3.18	
Difference	0.00	0.82	-2.00	-2.00	-1.40	N/A	N/A	N/A	-0.92	-1.14	
Internal Diversified Hedge Funds	0.43	0.27	-10.41	-10.41	-0.13	N/A	N/A	N/A	5.05	1.42	07/01/2018
HFRI FOF Comp Index	1.73	1.37	-5.31	-5.31	3.69	3.01	3.31	3.50	6.17	3.18	
Difference	-1.30	-1.10	-5.10	-5.10	-3.82	N/A	N/A	N/A	-1.12	-1.76	
Infrastructure Composite	7.28	0.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.60	04/01/2022
10 Year US Treasury Yield + 350 bps	1.79	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.96	
Difference	5.49	-2.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-7.56	
Macquarie Infrastructure	9.09	2.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.00	04/01/2022
10 Year US Treasury Yield + 350 bps	1.79	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.96	
Difference	7.30	-0.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-5.96	
MGIF Co-Investment 3	-0.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.89	10/01/2022
10 Year US Treasury Yield + 350 bps	1.79	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.79	
Difference	-2.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.68	

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Opportunistic Composite	0.92	3.22	-22.27	-22.27	N/A	N/A	N/A	N/A	30.17	11.45	07/01/2020
Opportunistic Custom Benchmark	5.02	1.46	-8.51	-8.51	N/A	N/A	N/A	N/A	9.35	4.42	
Difference	-4.10	1.76	-13.76	-13.76	N/A	N/A	N/A	N/A	20.82	7.03	
Grosvenor Opportunistic Class D	0.92	3.23	-22.26	-22.26	N/A	N/A	N/A	N/A	30.17	11.46	07/01/2020
Opportunistic Custom Benchmark	5.02	1.46	-8.51	-8.51	N/A	N/A	N/A	N/A	9.35	4.42	
Difference	-4.10	1.77	-13.75	-13.75	N/A	N/A	N/A	N/A	20.82	7.04	
Internal Opportunistic	7.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.39	09/01/2022
Opportunistic Custom Benchmark	5.02	1.46	-8.51	-8.51	N/A	N/A	N/A	N/A	9.35	-0.82	
Difference	2.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.57	

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Core Real Estate	-4.69	-4.29	8.54	8.54	10.36	8.53	8.37	9.75	22.47	7.15	01/01/2006
NCREIF ODCE Index (AWA) (Gross)	-4.97	-4.47	7.47	7.47	9.93	8.68	8.54	10.10	22.17	7.35	
Difference	0.28	0.18	1.07	1.07	0.43	-0.15	-0.17	-0.35	0.30	-0.20	
Clarion Lion	-5.13	-4.56	9.63	9.63	11.42	10.22	9.88	11.07	23.40	7.23	01/01/2006
NCREIF ODCE Index (AWA) (Gross)	-4.97	-4.47	7.47	7.47	9.93	8.68	8.54	10.10	22.17	7.35	
Difference	-0.16	-0.09	2.16	2.16	1.49	1.54	1.34	0.97	1.23	-0.12	
UBS Trumbull	-5.18	-5.17	5.94	5.94	5.72	4.35	5.02	6.98	16.22	5.87	07/01/2006
NCREIF ODCE Index (AWA) (Gross)	-4.97	-4.47	7.47	7.47	9.93	8.68	8.54	10.10	22.17	7.09	
Difference	-0.21	-0.70	-1.53	-1.53	-4.21	-4.33	-3.52	-3.12	-5.95	-1.22	
MS Prime	-3.48	-3.28	7.38	7.38	N/A	N/A	N/A	N/A	22.89	13.96	10/01/2020
NCREIF ODCE Index (AWA) (Gross)	-4.97	-4.47	7.47	7.47	9.93	8.68	8.54	10.10	22.17	13.51	
Difference	1.49	1.19	-0.09	-0.09	N/A	N/A	N/A	N/A	0.72	0.45	
Diversified Hedge Funds Composite	0.95	1.02	-9.13	-9.13	0.76	1.10	1.56	2.46	5.09	2.03	12/01/2007
HFRI FOF Comp Index	1.73	1.37	-5.31	-5.31	3.69	3.01	3.31	3.50	6.17	1.74	
Difference	-0.78	-0.35	-3.82	-3.82	-2.93	-1.91	-1.75	-1.04	-1.08	0.29	
Grosvenor Diversified Hedge Funds	1.73	2.19	-7.31	-7.31	2.29	N/A	N/A	N/A	5.25	2.04	07/01/2018
HFRI FOF Comp Index	1.73	1.37	-5.31	-5.31	3.69	3.01	3.31	3.50	6.17	3.18	
Difference	0.00	0.82	-2.00	-2.00	-1.40	N/A	N/A	N/A	-0.92	-1.14	
Internal Diversified Hedge Funds	0.43	0.27	-10.41	-10.41	-0.13	N/A	N/A	N/A	5.05	1.42	07/01/2018
HFRI FOF Comp Index	1.73	1.37	-5.31	-5.31	3.69	3.01	3.31	3.50	6.17	3.18	
Difference	-1.30	-1.10	-5.10	-5.10	-3.82	N/A	N/A	N/A	-1.12	-1.76	
Infrastructure Composite	7.28	0.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.60	04/01/2022
10 Year US Treasury Yield + 350 bps	1.79	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.96	
Difference	5.49	-2.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-7.56	
Macquarie Infrastructure	9.09	2.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.00	04/01/2022
10 Year US Treasury Yield + 350 bps	1.79	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.96	
Difference	7.30	-0.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-5.96	
MGIF Co-Investment 3	-0.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.89	10/01/2022
10 Year US Treasury Yield + 350 bps	1.79	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.79	
Difference	-2.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.68	

Performance shown is gross of fees for the Core Real Estate Composite and Core Real Estate managers. Performance shown is net of fees for the Diversified Hedge Funds Composite and managers, opportunistic, and infrastructure managers. Wyoming State Treasurer's Office fiscal year ends June 30th. Since Inception date shown represents the first full month following initial funding.

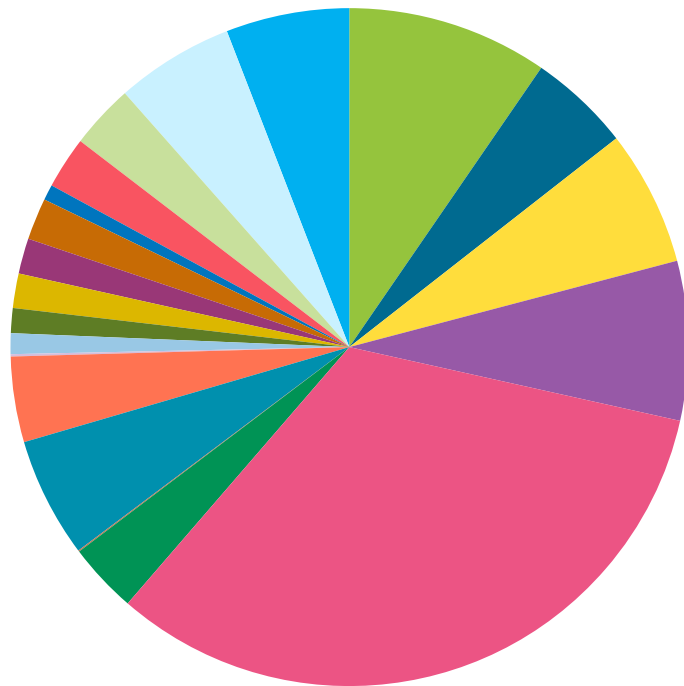
Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Opportunistic Investments	0.92	3.22	-22.27	-22.27	N/A	N/A	N/A	N/A	30.17	11.45	07/01/2020
Opportunistic Custom Benchmark	5.02	1.46	-8.51	-8.51	N/A	N/A	N/A	N/A	9.35	4.42	
Difference	-4.10	1.76	-13.76	-13.76	N/A	N/A	N/A	N/A	20.82	7.03	
Grosvenor Opportunistic Class D	0.92	3.23	-22.26	-22.26	N/A	N/A	N/A	N/A	30.17	11.46	07/01/2020
Opportunistic Custom Benchmark	5.02	1.46	-8.51	-8.51	N/A	N/A	N/A	N/A	9.35	4.42	
Difference	-4.10	1.77	-13.75	-13.75	N/A	N/A	N/A	N/A	20.82	7.04	
Wyoming Internal Opportunistic	7.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.39	09/01/2022
Opportunistic Custom Benchmark	5.02	1.46	-8.51	-8.51	N/A	N/A	N/A	N/A	9.35	-0.82	
Difference	2.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.57	

Performance shown is gross of fees for the Core Real Estate Composite and Core Real Estate managers. Performance shown is net of fees for the Diversified Hedge Funds Composite and managers, opportunistic, and infrastructure managers. Wyoming State Treasurer's Office fiscal year ends June 30th. Since Inception date shown represents the first full month following initial funding.

December 31, 2022 : \$11,603,629,220



	Market Value (\$)	Allocation (%)
Internal Intermediate Govt Fixed Income Portfolio	1,111,870,890	9.58
Payden & Rygel IGC	563,129,435	4.85
JP Morgan MBS	749,890,657	6.46
IShares Core US Agg Bond ETF	9,744	0.00
PIMCO Core	880,823,108	7.59
Internal Ladder Portfolio	3,813,501,993	32.86
Credit Suisse	387,973,098	3.34
Octagon	6,638,623	0.06
Octagon SMA	664,349,252	5.73
KKR	472,913,262	4.08
Grosvenor Silvery Lupine Fund	12,969,822	0.11
Global Evolution	115,231,089	0.99
Global Evolution Hard	137,541,217	1.19
Eaton Vance	190,589,066	1.64
Goldman Sachs	196,473,219	1.69
Finisterre	230,971,001	1.99
Wellington EMD	86,193,802	0.74
Internal Long Duration Govt Fixed Income Portfolio	288,204,507	2.48
Metlife	356,885,313	3.08
Internal Low Duration Fixed Income Portfolio	654,212,034	5.64
PIMCO Transition Low Duration	683,258,087	5.89

Allocations shown may not sum up to 100% exactly due to rounding.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)											Inception Date
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.		
Core Fixed Income	3,305,723,835	28.49	1.56	-3.16	-12.96	-12.96	-2.41	0.18	1.03	1.11	-1.50	1.11	01/01/2013	
Bloomberg US Agg Bond Index			1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.06	-1.55	1.06		
Difference			-0.31	-0.19	0.05	0.05	0.30	0.16	0.14	0.05	0.05	0.05		
Internal Aggregate Core Fixed Income	2,424,900,727	20.90	1.47	-3.19	-12.42	-12.42	-2.29	N/A	N/A	N/A	-1.51	-2.21	11/01/2019	
Bloomberg US Agg Bond Index			1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.06	-1.55	-2.61		
Difference			-0.40	-0.22	0.59	0.59	0.42	N/A	N/A	N/A	0.04	0.40		
Internal Intermediate Govt Fixed Income Portfolio	1,111,870,890	9.58	0.67	-3.60	-11.93	-11.93	-2.49	-0.26	0.21	0.53	-2.40	3.74	10/01/1996	
Internal Intermediate Govt Fixed Income Portfolio Index			0.72	-3.66	-12.46	-12.46	-2.62	-0.39	0.03	0.26	-2.32	3.71		
Difference			-0.05	0.06	0.53	0.53	0.13	0.13	0.18	0.27	-0.08	0.03		
Payden & Rygel IGC	563,129,435	4.85	3.26	-2.10	-16.00	-16.00	-2.92	N/A	N/A	N/A	-1.12	-2.63	11/01/2019	
Payden & Rygel Custom Index			3.63	-1.61	-15.76	-15.76	-3.16	0.28	1.95	1.87	-1.04	-2.82		
Difference			-0.37	-0.49	-0.24	-0.24	0.24	N/A	N/A	N/A	-0.08	0.19		
JP Morgan MBS	749,890,657	6.46	1.77	-3.05	-9.45	-9.45	-1.70	N/A	N/A	N/A	-0.70	-1.56	11/01/2019	
Bloomberg US MBS Index (Unhgd)			2.14	-3.32	-11.81	-11.81	-3.22	-0.53	0.20	0.74	-1.04	-2.94		
Difference			-0.37	0.27	2.36	2.36	1.52	N/A	N/A	N/A	0.34	1.38		
IShares Core US Agg Bond ETF	9,744	0.00	1.59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.61	09/01/2022	
Bloomberg US Agg Bond Index			1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.06	-1.55	-2.53		
Difference			-0.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.08		
PIMCO Core	880,823,108	7.59	1.74	-2.95	-13.65	-13.65	-2.62	-0.03	1.01	1.02	-1.72	1.02	01/01/2013	
PIMCO Custom Index			1.87	-2.99	-13.03	-13.03	-2.56	-0.08	0.81	1.00	-1.63	1.00		
Difference			-0.13	0.04	-0.62	-0.62	-0.06	0.05	0.20	0.02	-0.09	0.02		
Opportunistic Fixed Income														
Grosvenor Silvery Lupine Fund	12,969,822	0.11	-13.58	-12.06	-2.26	-2.26	-3.00	0.26	2.71	N/A	0.97	2.82	07/01/2014	
CS Western Euro Hi Yld Index			5.82	5.39	-9.44	-9.44	-0.53	2.18	4.31	4.57	4.91	3.66		
Difference			-19.40	-17.45	7.18	7.18	-2.47	-1.92	-1.60	N/A	-3.94	-0.84		

Performance shown is net of fees. Fiscal year ends on June 30th. Custom index composition can be found in the addendum.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)											Inception Date
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.		
Bank Loans	1,531,874,235	13.20	2.64	3.95	-1.00	-1.00	2.53	N/A	N/A	N/A	4.75	2.92	09/01/2019	
Bank Loans Custom Index			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	2.78		
Difference			-1.11	-1.13	-0.32	-0.32	0.19	N/A	N/A	N/A	0.09	0.14		
Credit Suisse	387,973,098	3.34	2.28	3.76	-0.50	-0.50	2.41	N/A	N/A	N/A	4.97	2.83	09/01/2019	
Bank Loans Custom Index			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	2.78		
Difference			-1.47	-1.32	0.18	0.18	0.07	N/A	N/A	N/A	0.31	0.05		
Octagon	6,638,623	0.06	3.57	4.69	-1.06	-1.06	2.28	N/A	N/A	N/A	4.72	2.85	09/01/2019	
Bank Loans Custom Index			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	2.78		
Difference			-0.18	-0.39	-0.38	-0.38	-0.06	N/A	N/A	N/A	0.06	0.07		
Octagon SMA	664,349,252	5.73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.11	12/01/2022	
Bank Loans Custom Index			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	0.51		
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.40		
KKR	472,913,262	4.08	2.10	3.58	-0.78	-0.78	N/A	N/A	N/A	N/A	N/A	-0.04	10/01/2021	
Bank Loans Custom Index			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	-0.26		
Difference			-1.65	-1.50	-0.10	-0.10	N/A	N/A	N/A	N/A	N/A	0.22		
Emerging Market Debt Fixed Income	956,999,395	8.25	7.97	4.88	-11.23	-11.23	-3.76	-1.75	1.94	N/A	-2.33	-2.12	04/01/2013	
EMD Custom Benchmark			7.09	2.84	-13.90	-13.90	-5.44	-2.09	1.89	-1.82	-3.26	-1.85		
Difference			0.88	2.04	2.67	2.67	1.68	0.34	0.05	N/A	0.93	-0.27		
Global Evolution	115,231,089	0.99	7.78	4.54	-7.69	-7.69	N/A	N/A	N/A	N/A	-7.59	-4.10	02/01/2020	
JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)			8.45	3.33	-11.69	-11.69	-6.11	-2.51	1.58	-2.03	-8.75	-5.86		
Difference			-0.67	1.21	4.00	4.00	N/A	N/A	N/A	N/A	1.16	1.76		
Goldman Sachs	196,473,219	1.69	5.87	4.33	-11.47	-11.47	N/A	N/A	N/A	N/A	-0.60	-2.30	03/01/2020	
Goldman Sachs Custom Index			4.72	1.95	-12.26	-12.26	-1.69	1.11	3.25	2.83	0.91	-2.32		
Difference			1.15	2.38	0.79	0.79	N/A	N/A	N/A	N/A	-1.51	0.02		
Eaton Vance	190,589,066	1.64	9.10	7.51	-9.29	-9.29	N/A	N/A	N/A	N/A	2.77	-3.45	01/01/2021	
JP Morgan EMB (JEMB) Hard/Local 50/50			7.43	2.96	-13.34	-13.34	-4.78	-1.26	2.13	0.13	-4.65	-9.10		
Difference			1.67	4.55	4.05	4.05	N/A	N/A	N/A	N/A	7.42	5.65		

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. The EMD Custom Index consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvf'd Index, 1/3 JPM CEMBI Brd Dvf'd Index, and 1/3 JPM EMBI Gbl Dvf'd Index thereafter. The Goldman Sachs Index consists of JPM CEMBI Brd Dvf'd Index through 11/22/2020, account performance from 11/23/2020 through 11/30/2020, and the JPM CEMBI Brd Dvf'd Index thereafter. The Bank Loans Custom Index consists of S&P LSTA Lvqd Loan Index through 06/30/2021, and the S&P LSTA US Lvqd Loan 100 Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Global Evolution Hard	137,541,217	1.19	10.44	5.55	-15.70	-15.70	N/A	N/A	N/A	N/A	-3.28	-8.56	12/01/2020
JP Morgan EMBIG Div Ex CCC (USD) (TR) Index			7.78	3.11	-17.26	-17.26	-4.90	-0.94	2.07	1.70	-2.04	-8.82	
Difference			2.66	2.44	1.56	1.56	N/A	N/A	N/A	N/A	-1.24	0.26	
Finisterre	230,971,001	1.99	7.36	3.09	-8.05	-8.05	N/A	N/A	N/A	N/A	N/A	-5.64	03/01/2021
Custom EMD Benchmark (1/3 blend)			7.09	2.84	-13.90	-13.90	-4.34	-0.86	2.28	0.84	-3.26	-8.23	
Difference			0.27	0.25	5.85	5.85	N/A	N/A	N/A	N/A	N/A	2.59	
Wellington EMD	86,193,802	0.74	8.26	3.88	-14.08	-14.08	N/A	N/A	N/A	N/A	N/A	-13.68	09/01/2021
50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div			8.29	3.27	-14.75	-14.75	-5.66	-1.86	1.77	-0.18	-5.32	-14.09	
Difference			-0.03	0.61	0.67	0.67	N/A	N/A	N/A	N/A	N/A	0.41	
Laddered Treasury Composite	3,813,501,993	32.86	1.02	-0.03	-2.34	-2.34	0.12	N/A	N/A	N/A	-0.42	0.25	10/01/2019
Internal Ladder Portfolio	3,813,501,993	32.86	1.02	-0.03	-2.34	-2.34	0.12	N/A	N/A	N/A	-0.42	0.25	10/01/2019
Long Duration Fixed Income Composite	645,089,820	5.56	2.28	-7.06	-27.07	-27.07	-5.90	N/A	N/A	N/A	-3.25	-0.19	01/01/2019
Bloomberg US Gov't Crdt Lng Trm Bond Index			2.61	-6.66	-27.09	-27.09	-6.20	-1.21	1.52	1.57	-2.52	-0.33	
Difference			-0.33	-0.40	0.02	0.02	0.30	N/A	N/A	N/A	-0.73	0.14	
Internal Long Duration Govt Fixed Income Portfolio	288,204,507	2.48	-0.77	-10.30	-28.92	-28.92	-7.69	N/A	N/A	N/A	-5.46	-2.56	01/01/2019
Bloomberg US Gov't Lng Trm Bond Index			-0.59	-10.14	-29.19	-29.19	-7.39	-2.19	-0.21	0.61	-4.57	-2.29	
Difference			-0.18	-0.16	0.27	0.27	-0.30	N/A	N/A	N/A	-0.89	-0.27	
Metlife	356,885,313	3.08	5.06	-4.13	-25.48	-25.48	-5.11	N/A	N/A	N/A	-1.28	1.77	11/01/2018
Bloomberg US Lng Crdt Index			5.30	-3.73	-25.29	-25.29	-5.78	-0.77	2.52	2.13	-1.18	1.25	
Difference			-0.24	-0.40	-0.19	-0.19	0.67	N/A	N/A	N/A	-0.10	0.52	
Low Duration Fixed Income	654,212,034	5.64	0.80	-0.35	-2.90	-2.90	0.03	N/A	N/A	N/A	-0.06	1.15	12/01/2018
Low Duration Fixed Income Custom Index			0.73	-0.82	-3.81	-3.81	-0.46	0.80	0.87	0.82	-0.60	0.78	
Difference			0.07	0.47	0.91	0.91	0.49	N/A	N/A	N/A	0.54	0.37	
Internal Low Duration Fixed Income Portfolio	654,212,034	5.64	0.80	-0.35	-2.90	-2.90	0.03	N/A	N/A	N/A	-0.06	1.19	03/01/2018
Bloomberg US Gov't 1-3 Yr Bond Index			0.73	-0.82	-3.81	-3.81	-0.46	0.74	0.72	0.66	-0.60	0.84	
Difference			0.07	0.47	0.91	0.91	0.49	N/A	N/A	N/A	0.54	0.35	

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding. The Low Duration Fixed Income Custom Index consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Transition Low Duration Fixed Income Composite	683,258,087	5.89	1.99	2.19	-1.32	-1.32	N/A	N/A	N/A	N/A	N/A	-0.99	11/01/2021
Transition Fixed Income Custom Index			2.21	1.73	-1.31	-1.31	0.97	1.94	2.30	2.14	1.18	-1.10	
Difference			-0.22	0.46	-0.01	-0.01	N/A	N/A	N/A	N/A	N/A	0.11	
PIMCO Transition Low Duration	683,258,087	5.89	1.99	2.19	-1.32	-1.32	N/A	N/A	N/A	N/A	N/A	-0.99	11/01/2021
PIMCO Low Duration Custom Index			2.21	1.73	-1.05	-1.05	1.11	2.02	2.36	2.18	1.33	-0.76	
Difference			-0.22	0.46	-0.27	-0.27	N/A	N/A	N/A	N/A	N/A	-0.23	

Performance shown is net of fees. Fiscal year ends on June 30th. Custom index composition can be found in the addendum.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Core Fixed Income	3,305,723,835	28.49	1.58	-3.12	-12.89	-12.89	-2.33	0.27	1.13	1.23	-1.42	1.23	01/01/2013
Bloomberg US Agg Bond Index			1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.06	-1.55	1.06	
Difference			-0.29	-0.15	0.12	0.12	0.38	0.25	0.24	0.17	0.13	0.17	
IM U.S. Broad Mkt Core Fixed Income (SA+CF) Median			1.80	-2.90	-12.96	-12.96	-2.20	0.44	1.36	1.48	-1.23	1.48	
Core Fixed Income Rank			79	79	44	44	63	73	75	78	60	78	
Internal Aggregate Core Fixed Income	2,424,900,727	20.90	1.49	-3.16	-12.35	-12.35	-2.22	N/A	N/A	N/A	-1.44	-2.14	11/01/2019
Bloomberg US Agg Bond Index			1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.06	-1.55	-2.61	
Difference			-0.38	-0.19	0.66	0.66	0.49	N/A	N/A	N/A	0.11	0.47	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.80	-2.90	-12.96	-12.96	-2.20	0.44	1.36	1.48	-1.23	-2.10	
Internal Aggregate Core Fixed Income Rank			84	86	22	22	52	N/A	N/A	N/A	61	53	
Internal Intermediate Govt Fixed Income Portfolio	1,111,870,890	9.58	0.67	-3.60	-11.93	-11.93	-2.49	-0.26	0.21	0.53	-2.40	3.74	10/01/1996
Internal Intermediate Govt Fixed Income Portfolio Index			0.72	-3.66	-12.46	-12.46	-2.62	-0.39	0.03	0.26	-2.32	3.71	
Difference			-0.05	0.06	0.53	0.53	0.13	0.13	0.18	0.27	-0.08	0.03	
IM U.S. Government Bonds (SA+CF) Median			0.70	-2.54	-8.59	-8.59	-1.59	0.28	0.67	0.73	-1.83	4.04	
Internal Intermediate Govt Fixed Income Portfolio Rank			59	59	57	57	58	61	64	93	58	69	
Payden & Rygel IGC	563,129,435	4.85	3.31	-2.01	-15.84	-15.84	-2.73	N/A	N/A	N/A	-0.94	-2.45	11/01/2019
Payden & Rygel Custom Index			3.63	-1.61	-15.76	-15.76	-3.16	0.28	1.95	1.87	-1.04	-2.82	
Difference			-0.32	-0.40	-0.08	-0.08	0.43	N/A	N/A	N/A	0.10	0.37	
IM U.S. Corporate Bonds (SA+CF) Median			3.49	-1.65	-15.93	-15.93	-2.34	0.85	2.61	2.48	-0.53	-2.04	
Payden & Rygel IGC Rank			63	65	49	49	64	N/A	N/A	N/A	69	65	
JP Morgan MBS	749,890,657	6.46	1.80	-3.01	-9.37	-9.37	-1.62	N/A	N/A	N/A	-0.62	-1.47	11/01/2019
Bloomberg US MBS Index (Unhgd)			2.14	-3.32	-11.81	-11.81	-3.22	-0.53	0.20	0.74	-1.04	-2.94	
Difference			-0.34	0.31	2.44	2.44	1.60	N/A	N/A	N/A	0.42	1.47	
IM U.S. Mortgage Backed Bonds (SA+CF) Median			1.32	-3.19	-11.11	-11.11	-2.49	0.08	1.03	1.46	-0.25	-2.21	
JP Morgan MBS Rank			34	45	41	41	42	N/A	N/A	N/A	59	43	
IShares Core US Agg Bond ETF	9,744	0.00	1.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.60	09/01/2022
Bloomberg US Agg Bond Index			1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.06	-1.55	-2.53	
Difference			-0.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.07	
IM U.S. Government Bonds (SA+CF) Median			0.70	-2.54	-8.59	-8.59	-1.59	0.28	0.67	0.73	-1.83	-1.63	
IShares Core US Agg Bond ETF Rank			3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	57	

Performance shown is gross of fees. Fiscal year ends on June 30th. Custom index composition can be found in the addendum.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
PIMCO Core	880,823,108	7.59	1.77	-2.89	-13.56	-13.56	-2.52	0.07	1.13	1.16	-1.62	1.16	01/01/2013
PIMCO Custom Index			1.87	-2.99	-13.03	-13.03	-2.56	-0.08	0.81	1.00	-1.63	1.00	
Difference			-0.10	0.10	-0.53	-0.53	0.04	0.15	0.32	0.16	0.01	0.16	
IM U.S. Broad Mkt Core Fixed Income (SA+CF) Median			1.80	-2.90	-12.96	-12.96	-2.20	0.44	1.36	1.48	-1.23	1.48	
PIMCO Core Rank			53	50	81	81	73	85	75	81	80	81	

Performance shown is gross of fees with the exception of Grosvenor SLF, which is shown net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding. The Bank Loans Custom Index consists of S&P LSTA Lvkd Loan Index through 06/30/2021, and the S&P LSTA US Lvkd Loan 100 Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)											Inception Date
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.		
Opportunistic Fixed Income														
Grosvenor Silvery Lupine Fund	12,969,822	0.11	-13.58	-12.06	-2.26	-2.26	-3.00	0.26	2.71	N/A	0.97	2.82	07/01/2014	
CS Western Euro Hi Yld Index			5.82	5.39	-9.44	-9.44	-0.53	2.18	4.31	4.57	4.91	3.66		
Difference			-19.40	-17.45	7.18	7.18	-2.47	-1.92	-1.60	N/A	-3.94	-0.84		
Bank Loans														
Bank Loans Custom Index	1,531,874,235	13.20	2.69	4.08	-0.74	-0.74	2.84	N/A	N/A	N/A	5.05	3.21	09/01/2019	
Difference			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	2.78		
IM U.S. Bank Loans (SA+CF) Median			2.92	4.16	-0.87	-0.87	2.40	3.26	4.26	3.76	5.34	2.76		
Bank Loans Rank			68	51	47	47	29	N/A	N/A	N/A	57	28		
Credit Suisse														
Bank Loans Custom Index	387,973,098	3.34	2.34	3.89	-0.24	-0.24	2.67	N/A	N/A	N/A	5.23	3.08	09/01/2019	
Difference			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	2.78		
IM U.S. Bank Loans (SA+CF) Median			2.92	4.16	-0.87	-0.87	2.40	3.26	4.26	3.76	5.34	2.76		
Credit Suisse Rank			78	65	39	39	34	N/A	N/A	N/A	53	37		
Octagon														
Bank Loans Custom Index	6,638,623	0.06	3.57	4.77	-0.83	-0.83	2.61	N/A	N/A	N/A	5.04	3.19	09/01/2019	
Difference			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	2.78		
IM U.S. Bank Loans (SA+CF) Median			2.92	4.16	-0.87	-0.87	2.40	3.26	4.26	3.76	5.34	2.76		
Octagon Rank			7	28	49	49	38	N/A	N/A	N/A	57	31		
Octagon SMA														
Bank Loans Custom Index	664,349,252	5.73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.15	12/01/2022	
Difference			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	0.51		
IM U.S. Bank Loans (SA+CF) Median			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.36		
Octagon SMA Rank			2.92	4.16	-0.87	-0.87	2.40	3.26	4.26	3.76	5.34	0.41		
			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	93		
KKR														
Bank Loans Custom Index	472,913,262	4.08	2.16	3.70	-0.56	-0.56	N/A	N/A	N/A	N/A	N/A	0.20	10/01/2021	
Difference			3.75	5.08	-0.68	-0.68	2.34	3.18	4.29	3.61	4.66	-0.26		
IM U.S. Bank Loans (SA+CF) Median			-1.59	-1.38	0.12	0.12	N/A	N/A	N/A	N/A	N/A	0.46		
KKR Rank			2.92	4.16	-0.87	-0.87	2.40	3.26	4.26	3.76	5.34	0.05		
			87	72	42	42	N/A	N/A	N/A	N/A	N/A	46		

Performance shown is gross of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding. The EMD Custom Index consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvf'd Index, 1/3 JPM CEMBI Brd Dvf'd Index, and 1/3 JPM EMBI Gbl Dvf'd Index thereafter. The Goldman Sachs Index consists of JPM CEMBI Brd Dvf'd Index through 11/22/2020, account performance from 11/23/2020 through 11/30/2020, and the JPM CEMBI Brd Dvf'd Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Emerging Market Debt Fixed Income	956,999,395	8.25	8.05	5.03	-10.96	-10.96	-3.50	-1.41	2.35	N/A	-2.06	-1.66	04/01/2013
EMD Custom Benchmark			7.09	2.84	-13.90	-13.90	-5.44	-2.09	1.89	-1.82	-3.26	-1.85	
Difference			0.96	2.19	2.94	2.94	1.94	0.68	0.46	N/A	1.20	0.19	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	1.52	
Emerging Market Debt Fixed Income Rank			61	27	37	37	50	72	77	N/A	47	96	
Global Evolution	115,231,089	0.99	7.78	4.56	-7.61	-7.61	N/A	N/A	N/A	N/A	-7.45	-3.96	02/01/2020
JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)			8.45	3.33	-11.69	-11.69	-6.11	-2.51	1.58	-2.03	-8.75	-5.86	
Difference			-0.67	1.23	4.08	4.08	N/A	N/A	N/A	N/A	1.30	1.90	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	-3.85	
Global Evolution Rank			64	38	15	15	N/A	N/A	N/A	N/A	84	52	
Goldman Sachs	196,473,219	1.69	5.87	4.34	-11.37	-11.37	N/A	N/A	N/A	N/A	-0.38	-2.15	03/01/2020
Goldman Sachs Custom Index			4.72	1.95	-12.26	-12.26	-1.69	1.11	3.25	2.83	0.91	-2.32	
Difference			1.15	2.39	0.89	0.89	N/A	N/A	N/A	N/A	-1.29	0.17	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	-3.35	
Goldman Sachs Rank			89	44	41	41	N/A	N/A	N/A	N/A	23	27	
Eaton Vance	190,589,066	1.64	9.26	7.79	-8.85	-8.85	N/A	N/A	N/A	N/A	3.23	-3.00	01/01/2021
JP Morgan EMB (JEMB) Hard /Local 50/50			7.43	2.96	-13.34	-13.34	-4.78	-1.26	2.13	0.13	-4.65	-9.10	
Difference			1.83	4.83	4.49	4.49	N/A	N/A	N/A	N/A	7.88	6.10	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	-8.64	
Eaton Vance Rank			28	3	22	22	N/A	N/A	N/A	N/A	3	8	
Global Evolution Hard	137,541,217	1.19	10.50	5.67	-15.51	-15.51	N/A	N/A	N/A	N/A	-3.07	-8.36	12/01/2020
JP Morgan EMBIG Div Ex CCC (USD) (TR) Index			7.78	3.11	-17.26	-17.26	-4.90	-0.94	2.07	1.70	-2.04	-8.82	
Difference			2.72	2.56	1.75	1.75	N/A	N/A	N/A	N/A	-1.03	0.46	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	-6.92	
Global Evolution Hard Rank			10	15	72	72	N/A	N/A	N/A	N/A	58	81	
Finisterre	230,971,001	1.99	7.48	3.31	-7.66	-7.66	N/A	N/A	N/A	N/A	N/A	-5.24	03/01/2021
Custom EMD Benchmark (1/3 blend)			7.09	2.84	-13.90	-13.90	-4.34	-0.86	2.28	0.84	-3.26	-8.23	
Difference			0.39	0.47	6.24	6.24	N/A	N/A	N/A	N/A	N/A	2.99	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	-7.65	
Finisterre Rank			71	69	15	15	N/A	N/A	N/A	N/A	N/A	15	

Performance shown is gross of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Wellington EMD	86,193,802	0.74	8.42	4.17	-13.59	-13.59	N/A	N/A	N/A	N/A	N/A	-13.27	09/01/2021
50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div			8.29	3.27	-14.75	-14.75	-5.66	-1.86	1.77	-0.18	-5.32	-14.09	
Difference			0.13	0.90	1.16	1.16	N/A	N/A	N/A	N/A	N/A	0.82	
IM Emerging Markets Debt (SA+CF) Median			8.44	4.10	-12.28	-12.28	-3.54	-0.65	2.83	1.32	-2.12	-12.06	
Wellington EMD Rank			53	47	59	59	N/A	N/A	N/A	N/A	N/A	66	
Laddered Treasury Composite	3,813,501,993	32.86	1.02	-0.03	-2.34	-2.34	0.12	N/A	N/A	N/A	-0.42	0.25	10/01/2019
Internal Ladder Portfolio	3,813,501,993	32.86	1.02	-0.03	-2.34	-2.34	0.12	N/A	N/A	N/A	-0.42	0.25	10/01/2019
Long Duration Fixed Income Composite	645,089,820	5.56	2.31	-7.01	-26.99	-26.99	-5.80	N/A	N/A	N/A	-3.14	-0.08	01/01/2019
Bloomberg US Gov't Crdt Lng Trm Bond Index			2.61	-6.66	-27.09	-27.09	-6.20	-1.21	1.52	1.57	-2.52	-0.33	
Difference			-0.30	-0.35	0.10	0.10	0.40	N/A	N/A	N/A	-0.62	0.25	
IM U.S. Long Duration (SA+CF) Median			2.69	-6.06	-26.70	-26.70	-5.37	-0.52	2.21	2.12	-1.72	0.53	
Long Duration Fixed Income Composite Rank			81	90	58	58	73	N/A	N/A	N/A	99	94	
Internal Long Duration Govt Fixed Income Portfolio	288,204,507	2.48	-0.77	-10.30	-28.92	-28.92	-7.69	N/A	N/A	N/A	-5.46	-2.56	01/01/2019
Bloomberg US Gov't Lng Trm Bond Index			-0.59	-10.14	-29.19	-29.19	-7.39	-2.19	-0.21	0.61	-4.57	-2.29	
Difference			-0.18	-0.16	0.27	0.27	-0.30	N/A	N/A	N/A	-0.89	-0.27	
IM U.S. Long Duration (SA+CF) Median			2.69	-6.06	-26.70	-26.70	-5.37	-0.52	2.21	2.12	-1.72	0.53	
Internal Long Duration Govt Fixed Income Portfolio Rank			98	100	97	97	100	N/A	N/A	N/A	100	100	
Metlife	356,885,313	3.08	5.12	-4.04	-25.33	-25.33	-4.92	N/A	N/A	N/A	-1.09	1.98	11/01/2018
Bloomberg US Lng Crdt Index			5.30	-3.73	-25.29	-25.29	-5.78	-0.77	2.52	2.13	-1.18	1.25	
Difference			-0.18	-0.31	-0.04	-0.04	0.86	N/A	N/A	N/A	0.09	0.73	
IM U.S. Long Duration (SA+CF) Median			2.69	-6.06	-26.70	-26.70	-5.37	-0.52	2.21	2.12	-1.72	1.41	
Metlife Rank			9	29	25	25	29	N/A	N/A	N/A	33	22	

Performance shown is gross of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding. The Low Duration Fixed Income Custom Index consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.

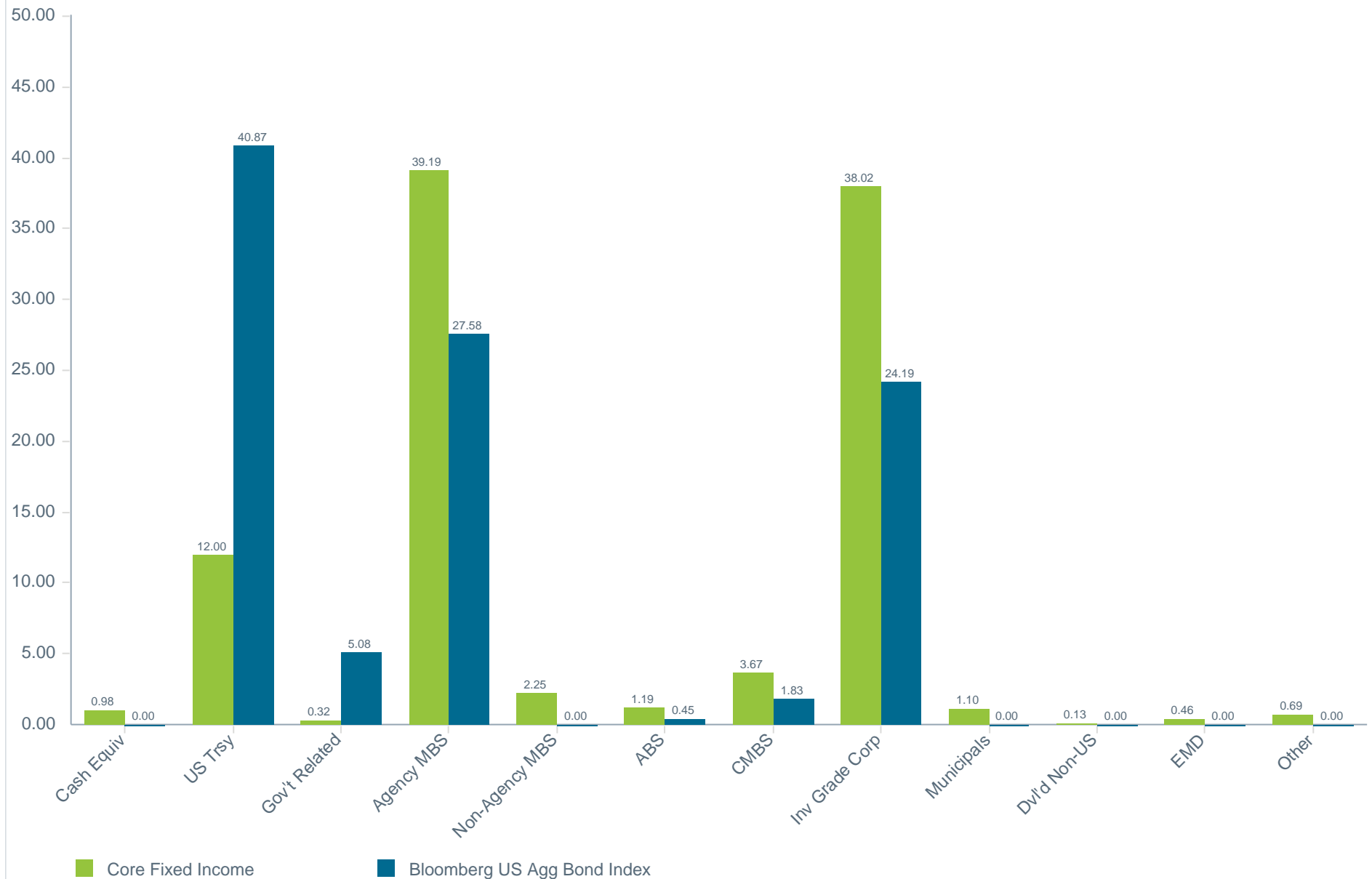
Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Low Duration Fixed Income	654,212,034	5.64	0.80	-0.35	-2.90	-2.90	0.03	N/A	N/A	N/A	-0.06	1.15	12/01/2018
Low Duration Fixed Income Custom Index			0.73	-0.82	-3.81	-3.81	-0.46	0.80	0.87	0.82	-0.60	0.78	
Difference			0.07	0.47	0.91	0.91	0.49	N/A	N/A	N/A	0.54	0.37	
IM U.S. Short Duration Fixed Income (SA+CF) Median			1.07	-0.09	-3.37	-3.37	0.15	1.28	1.38	1.25	-0.20	1.34	
Low Duration Fixed Income Rank			91	68	30	30	66	N/A	N/A	N/A	40	72	
Internal Low Duration Fixed Income Portfolio	654,212,034	5.64	0.80	-0.35	-2.90	-2.90	0.03	N/A	N/A	N/A	-0.06	1.19	03/01/2018
Bloomberg US Gov't 1-3 Yr Bond Index			0.73	-0.82	-3.81	-3.81	-0.46	0.74	0.72	0.66	-0.60	0.84	
Difference			0.07	0.47	0.91	0.91	0.49	N/A	N/A	N/A	0.54	0.35	
IM U.S. Short Duration Fixed Income (SA+CF) Median			1.07	-0.09	-3.37	-3.37	0.15	1.28	1.38	1.25	-0.20	1.41	
Internal Low Duration Fixed Income Portfolio Rank			91	68	30	30	66	N/A	N/A	N/A	40	78	
Transition Low Duration Fixed Income Composite	683,258,087	5.89	2.03	2.27	-1.16	-1.16	N/A	N/A	N/A	N/A	N/A	-0.85	11/01/2021
Transition Fixed Income Custom Index			2.21	1.73	-1.31	-1.31	0.97	1.94	2.30	2.14	1.18	-1.10	
Difference			-0.18	0.54	0.15	0.15	N/A	N/A	N/A	N/A	N/A	0.25	
IM U.S. Short Duration Fixed Income (SA+CF) Median			1.07	-0.09	-3.37	-3.37	0.15	1.28	1.38	1.25	-0.20	-3.02	
Transition Low Duration Fixed Income Composite Rank			3	2	8	8	N/A	N/A	N/A	N/A	N/A	8	
PIMCO Transition Low Duration	683,258,087	5.89	2.03	2.27	-1.16	-1.16	N/A	N/A	N/A	N/A	N/A	-0.85	11/01/2021
PIMCO Low Duration Custom Index			2.21	1.73	-1.05	-1.05	1.11	2.02	2.36	2.18	1.33	-0.76	
Difference			-0.18	0.54	-0.11	-0.11	N/A	N/A	N/A	N/A	N/A	-0.09	
IM U.S. Short Duration Fixed Income (SA+CF) Median			1.07	-0.09	-3.37	-3.37	0.15	1.28	1.38	1.25	-0.20	-3.02	
PIMCO Transition Low Duration Rank			3	2	8	8	N/A	N/A	N/A	N/A	N/A	8	

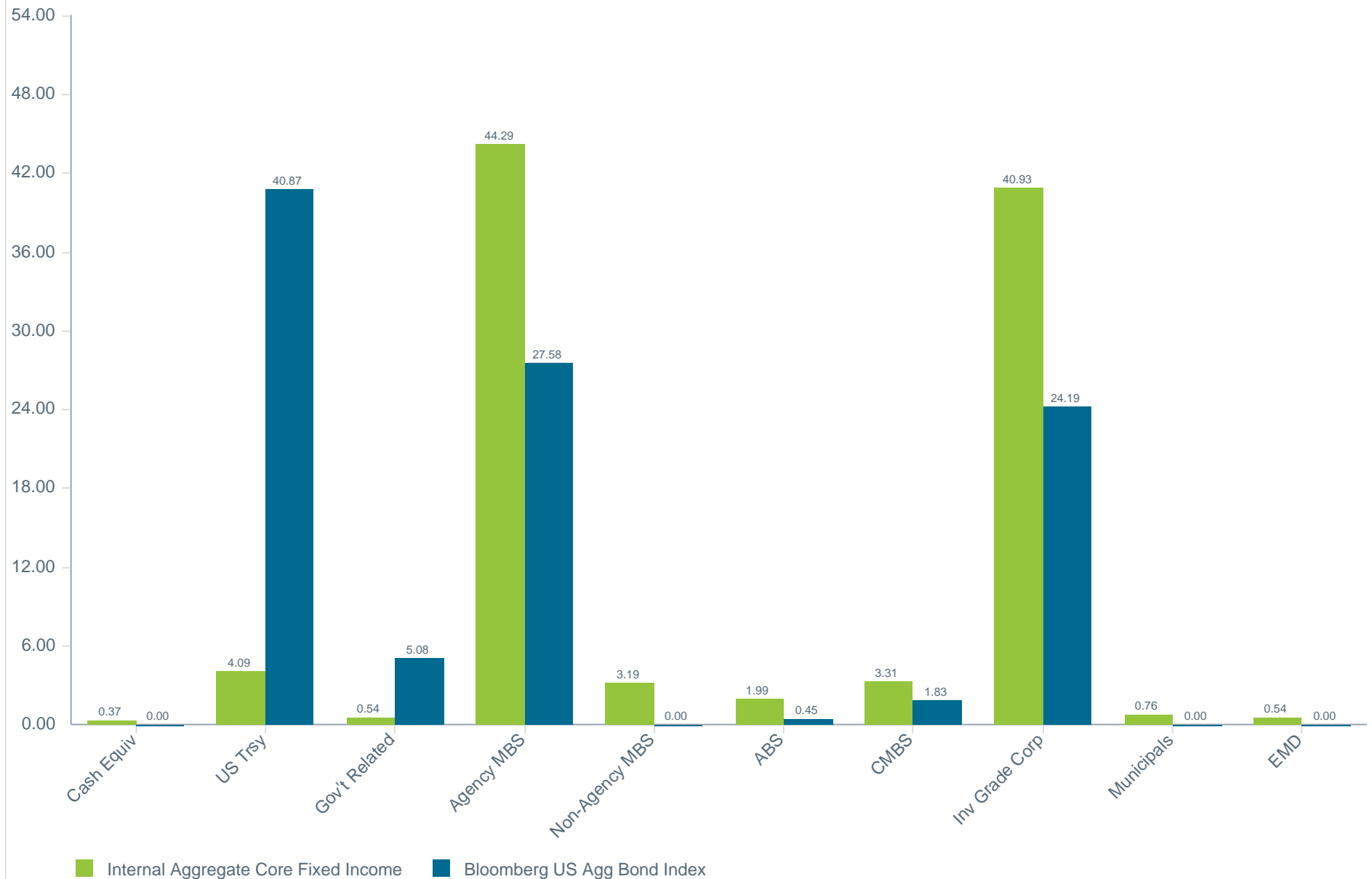
Performance shown is gross of fees. Fiscal year ends on June 30th. Custom index composition can be found in the addendum.

Sector Distribution (%)



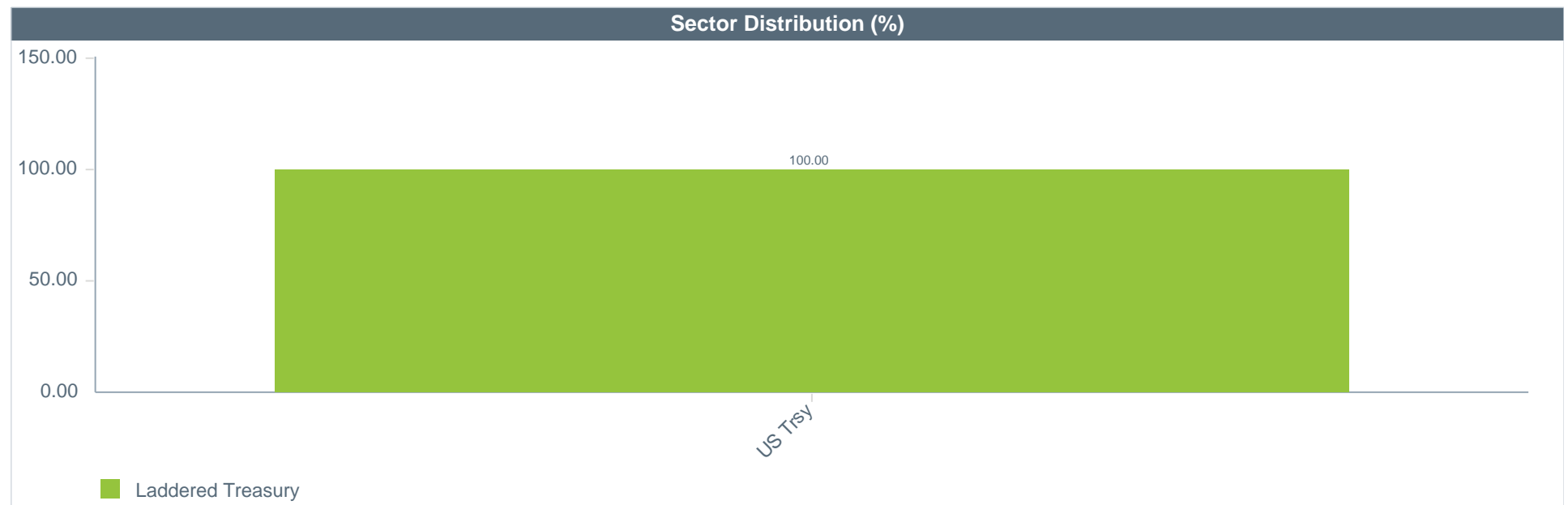
The statistics are calculated based on a weighted average of the underlying managers. Allocation to "Other" consists of Euro/Yankee securities.

Sector Distribution (%)



The statistics are calculated based on a weighted average of the underlying managers.

Portfolio Characteristics	
	Portfolio
Effective Duration	1.71
Convexity	N/A
Avg. Maturity	1.80
Avg. Quality	NR
Yield To Maturity (%)	4.48
Coupon Rate (%)	N/A

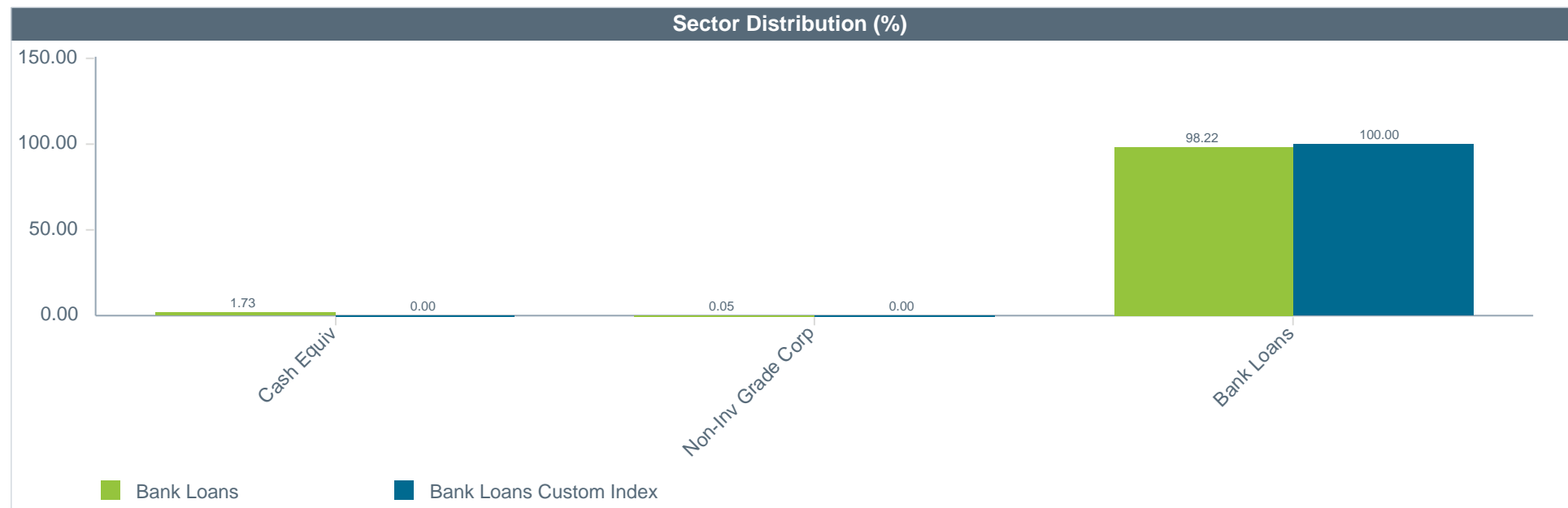


The statistics are calculated based on a weighted average of the underlying managers.

Wyoming State Treasurer's Office
Bank Loans vs. Bank Loans Custom Index
Portfolio Characteristics

As of December 31, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.22	N/A
Avg. Maturity	4.65	4.48
Avg. Quality	B2	B1
Yield To Maturity (%)	10.15	9.99
Coupon Rate (%)	8.25	3.58
Current Yield (%)	8.88	9.99

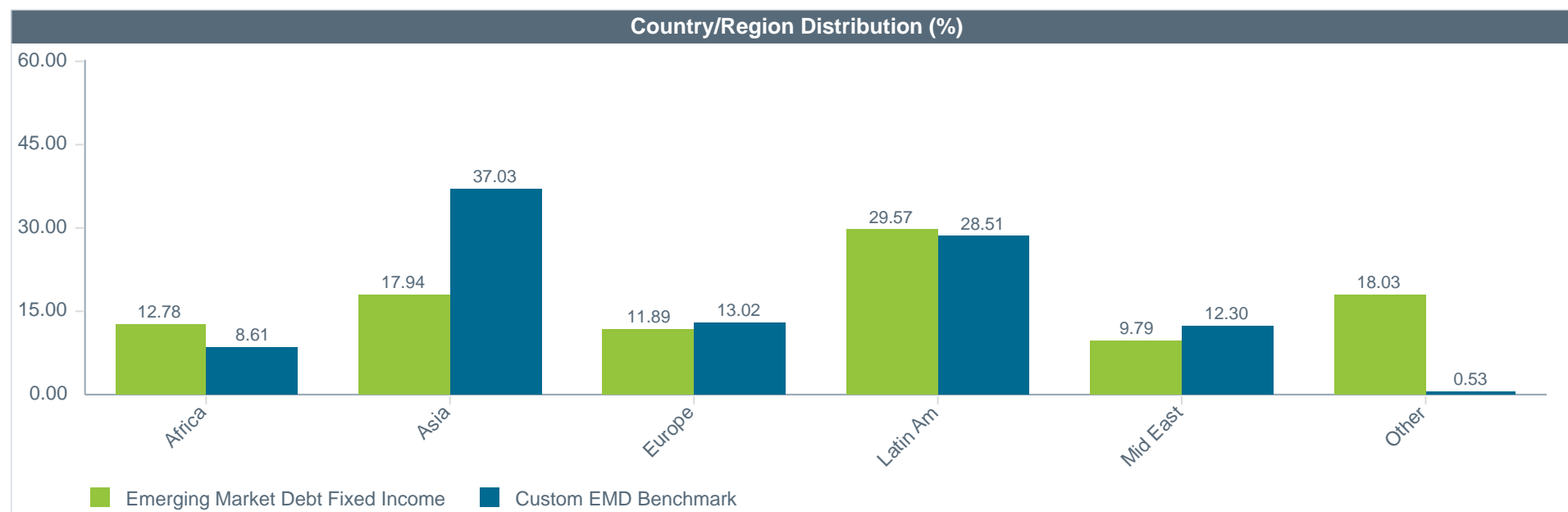


The statistics are calculated based on a weighted average of the underlying managers.

Wyoming State Treasurer's Office
Emerging Market Debt Fixed Income vs. Custom EMD Benchmark
Portfolio Characteristics

As of December 31, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	4.89	5.30
Convexity	N/A	0.59
Avg. Maturity	9.45	9.87
Avg. Quality	Ba1	Ba2
Yield To Maturity (%)	8.87	7.57
Coupon Rate (%)	5.95	4.99
Current Yield (%)	6.54	5.57

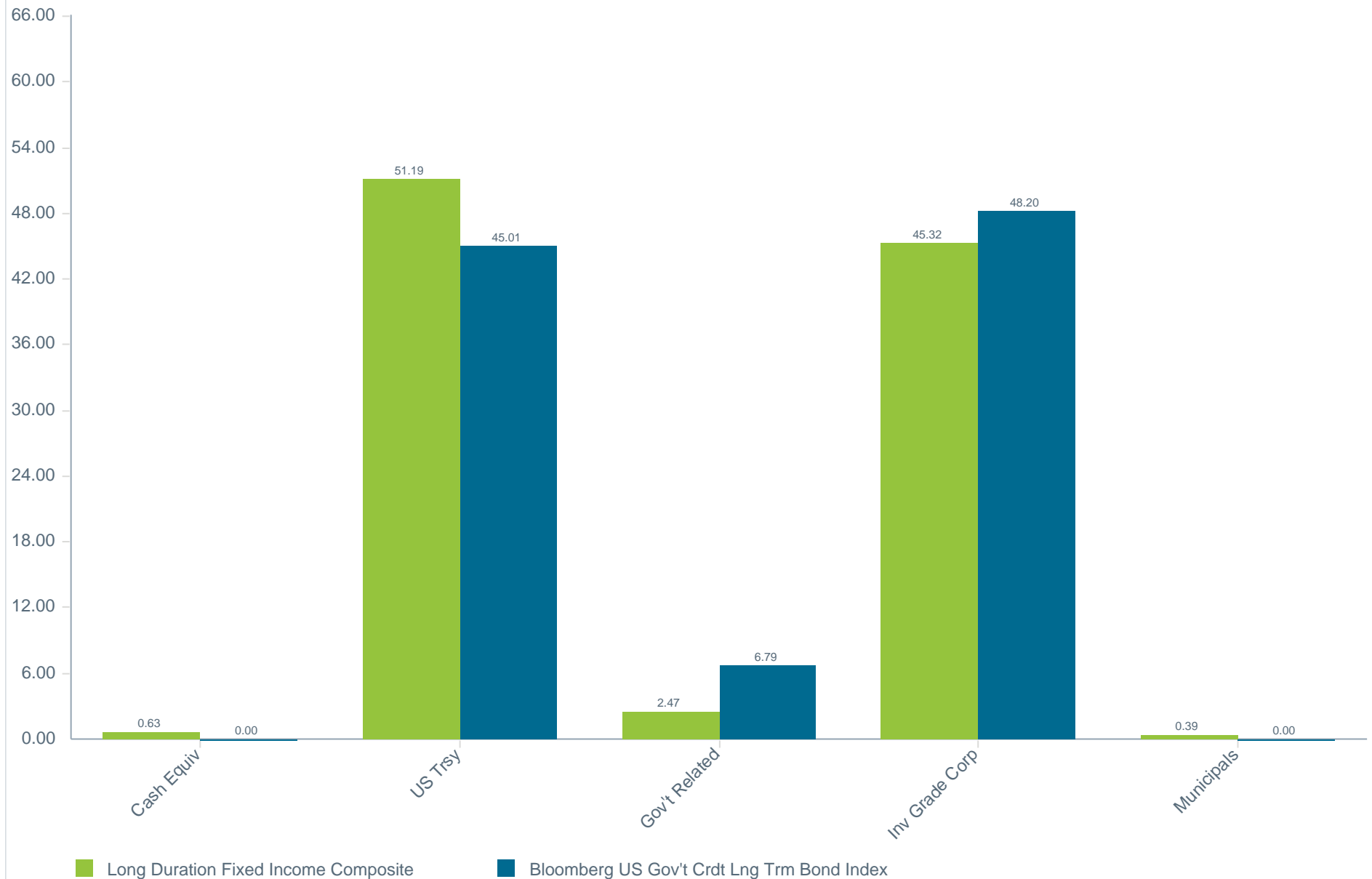


The statistics are calculated based on a weighted average of the underlying managers. Region allocation to "Other" consists of cash, supranational, developed, foreign exchange, futures, margin for derivatives, holdings not specified by country, and and interest rate swaps. The EMD Custom Index consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvf'd Index, 1/3 JPM CEMBI Brd Dvf'd Index, and 1/3 JPM FMBI Gbl Dvf'd Index thereafter.

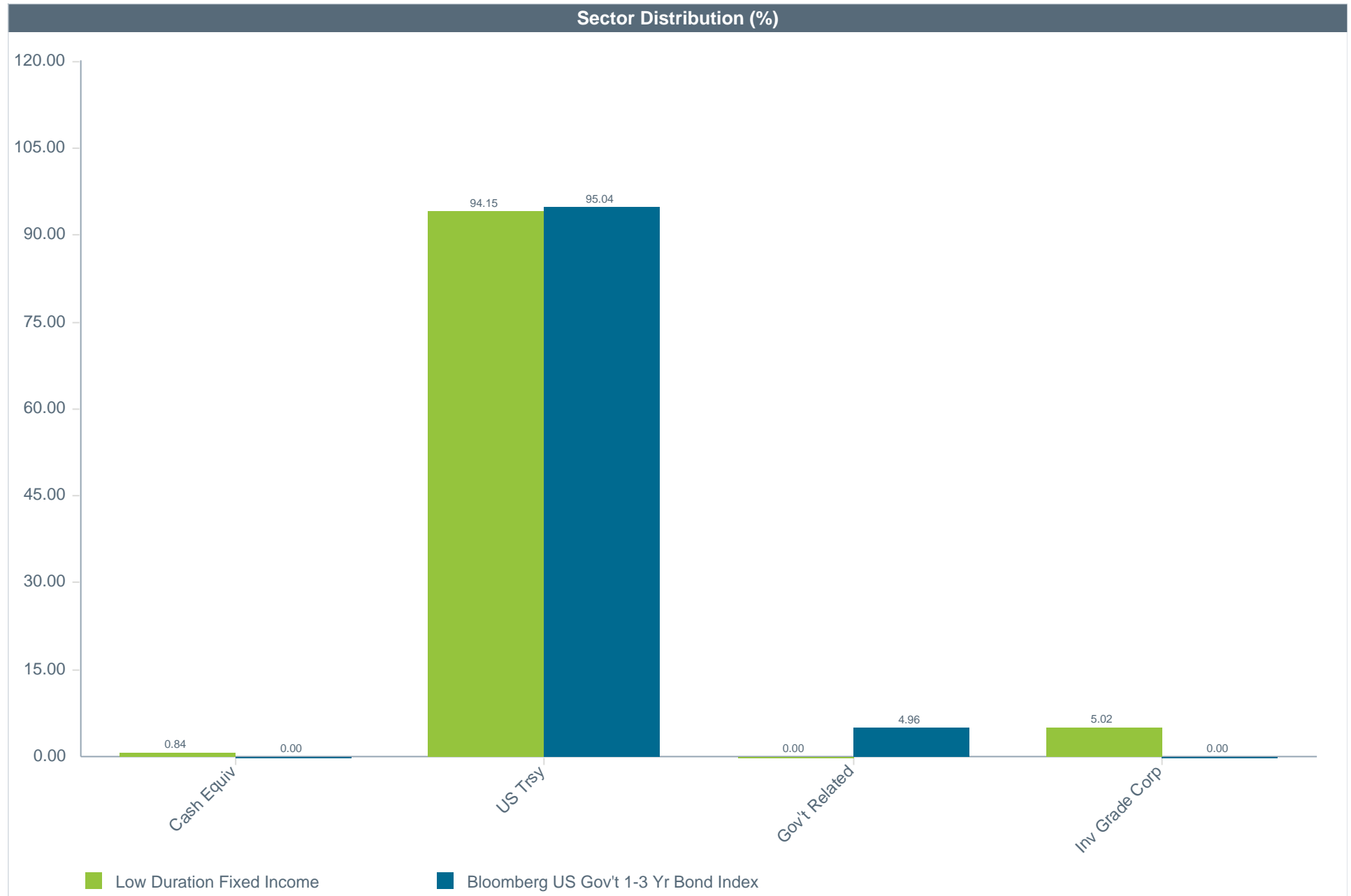
Long Duration Fixed Income Composite vs. Bloomberg US Gov't Crdt Lng Trm Bond Index

Portfolio Characteristics

Sector Distribution (%)

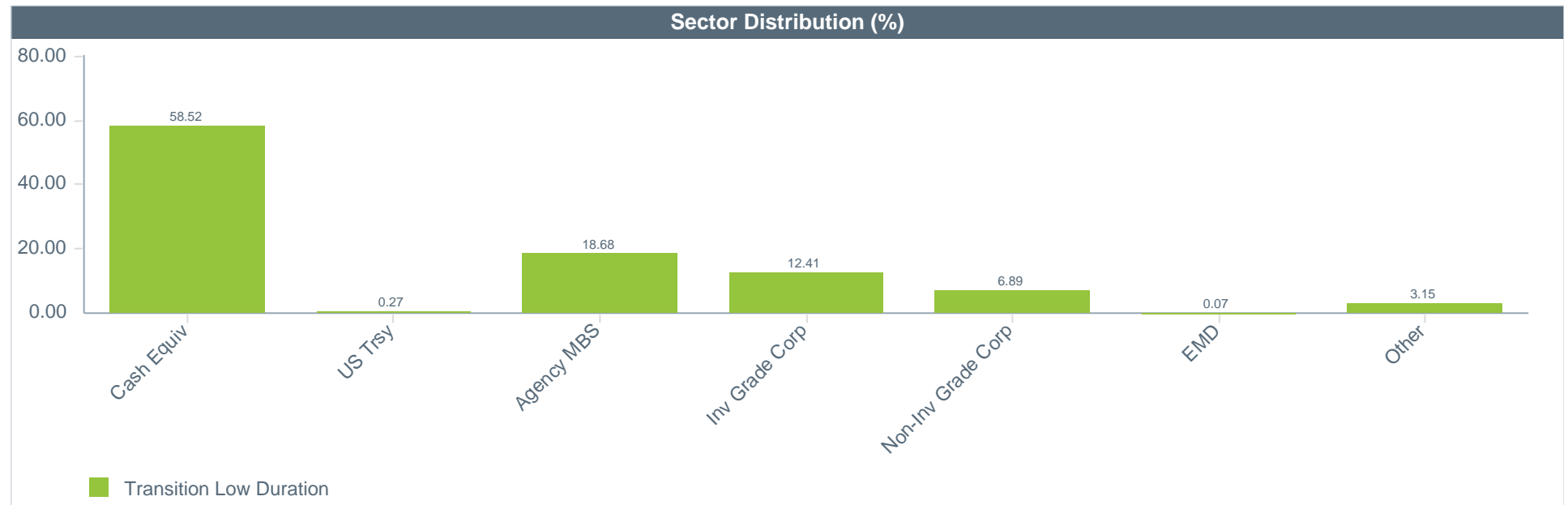


The statistics are calculated based on a weighted average of the underlying managers.



The statistics are calculated based on a weighted average of the underlying managers.

Portfolio Characteristics	
	Portfolio
Effective Duration	0.64
Convexity	-0.19
Avg. Quality	A1
Yield To Maturity (%)	6.16
Coupon Rate (%)	4.06



The statistics are calculated based on a weighted average of the underlying managers.

**Wyoming State Treasurer's Office
Comparative Performance**

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
JP Morgan Cash Composite	0.87	1.37	1.61	1.61	0.68	1.27	1.09	0.80	0.03	1.40	01/01/2006
JP Morgan Cash Custom Index	0.84	1.31	1.46	1.46	0.72	1.30	1.10	0.82	0.05	1.42	
Difference	0.03	0.06	0.15	0.15	-0.04	-0.03	-0.01	-0.02	-0.02	-0.02	
Wyo-Star Cash Composite	0.91	0.78	0.18	0.18	0.40	1.10	0.96	0.73	-0.11	2.90	10/01/1996
Wyo-Star Cash Custom Index	0.89	0.65	-0.07	-0.07	0.35	1.12	0.97	0.75	-0.22	2.38	
Difference	0.02	0.13	0.25	0.25	0.05	-0.02	-0.01	-0.02	0.11	0.52	
WYO STAR II Total Fund	1.58	0.21	-3.12	-3.12	-0.03	N/A	N/A	N/A	-0.39	1.20	01/01/2019
Bloomberg US Corp 1-3 Yr Index	1.40	0.15	-3.32	-3.32	0.07	1.40	1.60	1.51	-0.12	1.36	
Difference	0.18	0.06	0.20	0.20	-0.10	N/A	N/A	N/A	-0.27	-0.16	

Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.

The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.

The Wyo-Star Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. Currently, the primary benchmark for Wyo-Star Cash is the ICE BofAML 3 Mo US T-Bill Index and for Wyo-Star Extd is the JP Morgan Blended Index.

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Comparative Performance

As of December 31, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
JP Morgan Cash Composite	0.87	1.39	1.64	1.64	0.70	1.30	1.14	0.86	0.04	1.47	01/01/2006
JP Morgan Cash Custom Index	0.84	1.31	1.46	1.46	0.72	1.30	1.10	0.82	0.05	1.42	
Difference	0.03	0.08	0.18	0.18	-0.02	0.00	0.04	0.04	-0.01	0.05	
Wyo-Star Cash Composite	0.92	0.80	0.21	0.21	0.44	1.15	1.01	0.79	-0.07	2.94	10/01/1996
Wyo-Star Cash Custom Index	0.89	0.65	-0.07	-0.07	0.35	1.12	0.97	0.75	-0.22	2.38	
Difference	0.03	0.15	0.28	0.28	0.09	0.03	0.04	0.04	0.15	0.56	
WYO STAR II Total Fund	1.58	0.22	-3.09	-3.09	0.02	N/A	N/A	N/A	-0.34	1.25	01/01/2019
Bloomberg US Corp 1-3 Yr Index	1.40	0.15	-3.32	-3.32	0.07	1.40	1.60	1.51	-0.12	1.36	
Difference	0.18	0.07	0.23	0.23	-0.05	N/A	N/A	N/A	-0.22	-0.11	

Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.

The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.

The Wyo-Star Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. Currently, the primary benchmark for Wyo-Star Cash is the ICE BofAML 3 Mo US T-Bill Index and for Wyo-Star Extd is the JP Morgan Blended Index.

Performance shown is gross of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

Wyoming State Treasurer's Office
Investment Values by Fund
December 31, 2022

	Total Investment Value	Fiscal Year Ending 06/30/21 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$23,639,650,166	\$23,752,420,683	24,483,477,157	100.0%
Permanent Mineral Trust	\$8,251,725,968	\$8,834,499,093	\$9,224,910,590	100.0%
US Equity	\$995,339,108	\$1,126,638,384	\$1,237,230,420	13.4%
International Equity	\$1,541,490,906	\$1,488,637,028	\$1,716,613,977	18.6%
MLPs	\$323,585,741	\$378,457,712	\$451,604,806	4.9%
Private Equity	\$613,582,062	\$851,243,367	\$958,251,459	10.4%
Real Estate	\$860,485,442	\$1,260,096,524	\$1,148,142,445	12.4%
Diversified Hedge Funds	\$752,228,041	\$756,724,331	\$767,897,072	8.3%
Infrastructure	\$51,582,275	\$14,086,510	\$52,190,271	0.6%
Fixed Income	\$2,741,136,264	\$2,583,744,764	\$2,521,176,411	27.3%
Private Credit	\$49,879,266	\$0	\$51,963,257	0.6%
Opportunistic	\$60,709,056	\$60,098,004	\$60,883,742	0.7%
Public Purpose Investments	\$136,522,346	\$127,918,133	\$136,522,346	1.5%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$125,185,460	\$186,854,335	\$122,434,384	1.3%
Common School Perm Land Fund	\$4,351,711,757	\$4,372,482,910	\$4,554,175,053	100.0%
US Equity	\$343,792,146	\$391,966,684	\$433,650,708	9.5%
International Equity	\$631,371,663	\$579,983,439	\$679,667,319	14.9%
Preferred Stock	\$267,634,593	\$232,005,147	\$272,790,213	6.0%
MLPs	\$219,526,378	\$250,982,845	\$300,787,071	6.6%
Private Equity	\$0	\$73,003	\$84,702	0.0%
Real Estate	\$520,736,625	\$760,216,330	\$691,345,261	15.2%
Diversified Hedge Funds	\$211,418,145	\$181,025,758	\$195,973,959	4.3%
Infrastructure	\$54,920,639	\$10,271,156	\$55,574,092	1.2%
Fixed Income	\$2,010,676,354	\$1,868,959,356	\$1,831,381,985	40.2%
Private Credit	\$34,541,271	\$0	\$35,984,840	0.8%
Opportunistic	\$16,722,888	\$16,810,632	\$17,047,567	0.4%
Public Purpose Investments	\$18,359,738	\$18,359,738	\$18,359,738	0.4%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$22,011,318	\$61,828,823	\$21,527,597	0.5%
Permanent Land Fund	\$231,642,982	\$243,598,061	\$251,223,884	100.0%
US Equity	\$33,514,787	\$34,732,637	\$34,354,331	13.7%
International Equity	\$43,457,771	\$42,729,048	\$47,514,660	18.9%
MLPs	\$9,000,799	\$10,782,429	\$12,496,603	5.0%
Private Equity	\$22,732,432	\$27,805,931	\$33,017,512	13.1%
Real Estate	\$21,658,050	\$31,799,363	\$28,931,771	11.5%
Diversified Hedge Funds	\$18,426,893	\$18,069,875	\$19,028,436	7.6%
Infrastructure	\$1,177,793	\$332,291	\$1,191,693	0.5%
Fixed Income	\$76,889,757	\$69,042,163	\$69,891,808	27.8%
Private Credit	\$1,334,685	\$0	\$1,389,747	0.6%
Opportunistic	\$2,021,636	\$1,985,367	\$2,010,333	0.8%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$1,428,380	\$6,318,958	\$1,396,990	0.6%
University Permanent Land Fund	\$24,512,054	\$28,284,018	\$28,740,938	100.0%
US Equity	\$1,763,118	\$3,984,895	\$3,935,535	13.7%
International Equity	\$5,193,343	\$4,509,550	\$5,397,847	18.8%
MLPs	\$993,903	\$1,271,739	\$1,425,869	5.0%
Private Equity	\$2,092,592	\$2,981,256	\$3,395,544	11.8%
Real Estate	\$2,736,277	\$4,019,612	\$3,645,749	12.7%
Diversified Hedge Funds	\$2,340,585	\$2,384,469	\$2,419,637	8.4%
Infrastructure	\$140,695	\$38,920	\$142,355	0.5%
Fixed Income	\$8,800,584	\$7,440,529	\$7,913,262	27.5%
Private Credit	\$158,890	\$0	\$165,406	0.6%
Opportunistic	\$163,818	\$171,922	\$174,303	0.6%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$128,250	\$1,481,125	\$125,432	0.4%

Wyoming State Treasurer's Office
Investment Values by Fund
December 31, 2022

	Total Investment Value	Fiscal Year Ending 06/30/21 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$23,639,650,166	\$23,752,420,683	\$24,483,477,157	100.0%
Hathaway Scholarship	\$586,630,602	\$653,421,337	\$675,281,950	100.0%
US Equity	\$67,268,462	\$78,414,543	\$85,695,518	12.7%
International Equity	\$102,876,616	\$105,110,290	\$118,179,670	17.5%
MLPs	\$21,951,341	\$26,382,830	\$31,090,147	4.6%
Private Equity	\$73,964,450	\$94,032,740	\$109,407,286	16.2%
Real Estate	\$65,569,540	\$95,638,924	\$87,420,376	12.9%
Diversified Hedge Funds	\$55,943,136	\$56,422,644	\$57,223,334	8.5%
Infrastructure	\$3,313,688	\$1,024,739	\$3,352,942	0.5%
Fixed Income	\$185,680,852	\$184,852,362	\$172,600,386	25.6%
Private Credit	\$3,719,752	\$0	\$3,875,179	0.6%
Opportunistic	\$3,817,305	\$3,914,645	\$3,967,152	0.6%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$2,525,461	\$7,627,618	\$2,469,961	0.4%
Higher Education	\$126,359,845	\$131,534,781	\$132,506,830	100.0%
US Equity	\$10,293,688	\$11,948,884	\$12,860,543	9.7%
International Equity	\$19,158,525	\$16,983,623	\$20,089,924	15.2%
Preferred Stock	\$7,493,243	\$7,124,249	\$7,587,777	5.7%
MLPs	\$6,647,451	\$6,395,247	\$8,909,529	6.7%
Private Equity	\$0	\$2,755	\$3,197	0.0%
Real Estate	\$14,929,585	\$22,077,990	\$19,973,588	15.1%
Diversified Hedge Funds	\$5,611,035	\$5,047,316	\$5,057,879	3.8%
Infrastructure	\$1,432,317	\$270,862	\$1,449,002	1.1%
Fixed Income	\$57,782,870	\$57,675,799	\$53,545,135	40.4%
Private Credit	\$619,346	\$0	\$651,570	0.5%
Opportunistic	\$436,851	\$460,306	\$466,713	0.4%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$1,954,935	\$3,547,750	\$1,911,973	1.4%
Workers Compensation Fund	\$2,578,037,853	\$2,364,310,695	\$2,346,360,840	100.0%
US Equity	\$140,947,189	\$122,528,306	\$131,287,433	5.6%
International Equity	\$185,592,488	\$180,637,851	\$201,800,604	8.6%
MLPs	\$83,267,149	\$93,408,036	\$107,813,042	4.6%
Private Equity	\$0	\$47,700	\$55,344	0.0%
Real Estate	\$191,133,560	\$274,605,165	\$251,033,587	10.7%
Infrastructure	\$33,272,381	\$483,760	\$33,809,641	1.4%
Fixed Income	\$1,910,612,905	\$1,510,369,777	\$1,586,736,918	67.6%
Private Credit	\$12,912,085	\$0	\$13,458,892	0.6%
Opportunistic	\$16,818,159	\$16,744,875	\$16,959,961	0.7%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$3,481,937	\$165,485,226	\$3,405,418	0.1%
Pool A	\$398,795,889	\$259,889,129	\$386,030,588	100.0%
US Equity	\$27,807,064	\$17,300,136	\$28,833,873	7.5%
International Equity	\$39,428,313	\$23,886,240	\$41,552,321	10.8%
Preferred Stock	\$38,610,908	\$16,929,850	\$29,198,649	7.6%
MLPs	\$15,560,360	\$10,683,352	\$19,676,875	5.1%
Private Equity	\$0	\$28,500	\$33,068	0.0%
Real Estate	\$21,021,982	\$26,491,516	\$26,222,238	6.8%
Diversified Hedge Funds	\$11,653,145	\$9,884,212	\$10,580,577	2.7%
Fixed Income	\$217,952,949	\$135,123,916	\$203,653,920	52.8%
Private Credit	\$1,588,468	\$0	\$1,659,564	0.4%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$25,172,699	\$19,561,409	\$24,619,504	6.4%
LSRA	\$1,954,639,658	\$1,703,270,812	\$1,861,191,761	100.0%
US Equity	\$192,487,038	\$64,539,626	\$179,959,512	9.7%
International Equity	\$173,822,352	\$66,107,749	\$188,753,836	10.1%
MLPs	\$73,666,789	\$26,314,155	\$79,715,193	4.3%
Private Equity	\$0	\$21,304	\$24,718	0.0%
Diversified Hedge Funds	\$57,655,487	\$47,430,374	\$59,753,371	3.2%
Fixed Income	\$1,440,653,924	\$908,018,002	\$1,336,990,461	71.8%
Opportunistic	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$16,354,068	\$590,839,603	\$15,994,670	0.9%
State Agency Pool	\$5,135,593,558	\$5,161,129,847	\$5,023,054,723	100.0%
Fixed Income	\$3,797,979,038	\$3,851,436,948	\$3,819,738,935	76.0%
Public Purpose Investments	\$62,872,997	\$59,300,000	\$65,300,000	1.3%
Cash Equivalents	\$1,274,741,522	\$1,250,392,899	\$1,138,015,788	22.7%

Wyoming State Treasurer's Office
Investment Values by Manager
December 31, 2022

	Total Investment Value	Fiscal Year Ending 06/30/21 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$23,639,650,166	\$23,752,420,683	\$24,483,477,157	100.0%
US Equity	\$1,813,212,600	\$1,852,054,095	\$2,147,807,874	8.8%
State Street All Cap	\$1,280,884,700	\$1,435,978,583	\$1,628,262,954	
UW Portfolio Management Program	\$1,000,000	\$1,703,125	\$1,713,044	
Wyoming Internal Domestic Equity	\$31,154	\$30,554,039	\$31,226	
Wyoming Internal Domestic Equity - QT	\$83,493,371	\$33,838,046	\$82,632,857	
Van Berkomp	\$203,447,070	\$172,489,998	\$209,083,273	
State Street Small Cap	\$0	\$0	\$0	
BlackRock Small Cap	\$79,170,785	\$79,942,823	\$65,735,460	
Wyoming Internal Small Cap - QT	\$87,701,567	\$50,886,650	\$85,931,939	
Wyoming Internal Small Cap	\$53,339,954	\$46,660,831	\$51,160,829	
SPDR S&P 500 ETF Trust	\$24,144,000	\$0	\$23,256,292	
International Equity	\$2,742,348,977	\$2,508,584,818	\$3,019,570,158	12.3%
Northern Trust	\$1,370,011,325	\$1,103,096,420	\$1,411,276,551	
Harding Loevner	\$628,925,677	\$618,493,247	\$625,069,673	
Arrowstreet	\$688,800,975	\$786,995,151	\$924,943,837	
Vanguard FTSE All World Ex US ETF	\$54,611,000	\$0	\$58,280,097	
Mixed Assets	\$1,067,938,654	\$1,060,737,590	\$1,323,095,773	5.4%
Cohen & Steers	\$313,738,744	\$256,059,245	\$309,576,639	
Harvest	\$408,660,084	\$407,468,142	\$545,525,935	
Harvest Passive	\$345,539,827	\$397,210,203	\$467,993,199	
Private Equity	\$712,371,535	\$976,236,555	\$1,104,272,829	4.5%
Access Venture Partners II	\$2,205,145	\$1,496,701	\$483,711	
Accel-KKR Growth IV	\$5,450,929	\$1,085,567	\$5,641,528	
Cheyenne Capital Fund, L.P.	\$76,270,650	\$112,031,295	\$108,211,019	
Hamilton Lane Nowood Fund, L.P.	\$109,722,741	\$136,361,234	\$126,496,902	
BlackRock LTPC	\$275,911,891	\$420,960,844	\$488,423,491	
Valor PE	\$41,236,966	\$55,682,992	\$62,033,436	
GTCR	\$42,950,246	\$32,439,310	\$49,333,025	
Nautic	\$13,799,262	\$9,268,193	\$16,339,179	
Veritas	\$10,777,200	\$7,889,338	\$12,615,704	
Veritas Capital VIII	\$12,410,530	\$0	\$11,981,455	
Stepstone V	\$20,689,680	\$20,621,723	\$22,318,266	
Dragoneer	\$5,659,556	\$4,168,001	\$3,169,513	
Neuberger Berman Sauger	\$50,659,239	\$174,231,357	\$152,598,100	
Ashbridge	\$44,627,500	\$0	\$44,627,500	
Real Estate	\$1,698,230,982	\$2,474,945,426	\$2,256,715,015	9.2%
Clarion Lion	\$694,716,078	\$1,085,599,837	\$994,227,964	
Morgan Stanley Prime	\$360,000,000	\$505,654,256	\$438,430,697	
UBS Trumbull	\$146,818,175	\$207,981,825	\$184,409,784	
M&G	\$26,797,270	\$3,561,251	\$1,596,701	
Northwood	\$117,029,251	\$209,302,731	\$196,288,589	
SC Capital	\$99,592,288	\$113,811,808	\$109,131,093	
Realterm	\$249,999,982	\$340,526,119	\$324,337,094	
WestRiver	\$3,277,938	\$8,507,598	\$8,293,093	
Diversified Hedge Funds	\$1,115,276,467	\$1,076,988,978	\$1,117,934,265	4.6%
PAAMCO - Jackalope	\$6,433,236	\$2,808,094	\$2,843,101	
Grosvenor Diversified Hedge Funds	\$454,141,087	\$456,607,047	\$447,064,702	
Internal Diversified Hedge Funds	\$654,702,144	\$617,573,837	\$668,026,462	
Infrastructure	\$145,839,789	\$26,508,238	\$147,709,997	0.6%
Macquarie	\$120,839,789	\$26,508,238	\$122,931,094	
MGIF	\$25,000,000	\$0	\$24,778,903	

Wyoming State Treasurer's Office
Investment Values by Manager
December 31, 2022

	Total Investment Value	Fiscal Year Ending 06/30/21 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$23,639,650,166	\$23,752,420,683	\$24,483,477,157	100.0%
Fixed Income	\$12,583,871,331	\$11,176,663,615	\$11,603,629,220	47.4%
PIMCO	\$1,038,703,759	\$852,414,692	\$880,823,108	
Payden & Rygel	\$642,391,735	\$440,628,759	\$563,129,435	
JPM MBS	\$826,322,738	\$550,150,926	\$749,890,657	
Credit Suisse	\$412,182,951	\$447,836,812	\$387,973,098	
Octagon	\$695,204,995	\$662,435,090	\$670,987,875	
KKR	\$489,148,087	\$327,407,664	\$472,913,262	
Grosvenor Silvery Lupine Fund	\$9,886,805	\$32,340,789	\$12,969,822	
Investec	\$0	\$0	\$0	
Global Evolution	\$135,429,615	\$99,045,882	\$115,231,090	
Eaton Vance EMD	\$207,704,960	\$162,844,496	\$190,589,066	
Global Evolution Hard	\$177,836,372	\$129,876,631	\$137,541,217	
Finisterre	\$245,190,365	\$149,340,216	\$230,971,001	
Goldman Sachs	\$214,303,675	\$189,128,747	\$196,473,219	
Wellington	\$109,877,413	\$85,220,173	\$86,193,802	
Internal Long Duration Govt Portfolio	\$360,222,572	\$256,530,959	\$288,204,507	
Logan Circle	\$413,673,689	\$318,415,828	\$356,885,313	
Internal Int. Duration Govt Portfolio	\$1,280,872,369	\$823,200,417	\$1,111,870,890	
Internal Low Duration Govt Portfolio	\$689,952,814	\$640,631,003	\$654,212,034	
Pimco Low	\$697,080,111	\$1,172,742,930	\$683,258,087	
Wyoming Internal Ladder Portfolio	\$3,937,876,008	\$3,836,471,599	\$3,813,501,993	
IShares Core US Agg Bond ETF	\$10,300	\$0	\$9,744	
Private Credit	\$104,753,763	\$100,185,751	\$109,148,455	0.4%
Atalaya	\$63,750,000	\$0	\$65,403,302	
BlackRock GCO II	\$41,003,763	\$0	\$43,745,153	
Opportunistic	\$100,732,713	\$100,185,751	\$101,509,771	0.4%
Grosvenor D	\$100,689,713	\$100,185,751	\$101,471,349	
Wyoming Internal Opportunistic Portfolio	\$43,000	\$0	\$38,422	
Public Purpose Investments	\$220,182,084	\$205,577,871	\$220,182,084	0.9%
Cash & Cash Equivalents	\$1,334,891,271	\$2,293,937,746	\$1,331,901,717	5.4%
Epoch	\$0	\$0	\$0	
Internal Equity Russell 2000	\$0	\$0	\$0	
Fisher Investments	\$0	\$0	\$0	
Cornerstone	\$13,959	\$0	\$0	
Heitman	\$0	\$0	\$0	
TA Realty	\$26,120	\$0	\$0	
Allianz Global Investors	\$0	\$0	\$0	
C.S. McKee	\$8,953,177	\$0	\$0	
JP Morgan Core	\$0	\$0	\$0	
Neuberger Berman Credit	\$0	\$0	\$0	
Seix	\$0	\$0	\$0	
State Street TIPS	\$1,798,617	\$0	\$0	
State Street Low Duration	\$0	\$0	\$0	
Stone Harbor	\$150,719	\$0	\$0	
JP Morgan Cash Composite	\$1,323,948,678	\$2,293,937,746	\$1,331,901,717	

Investment Manager Profiles



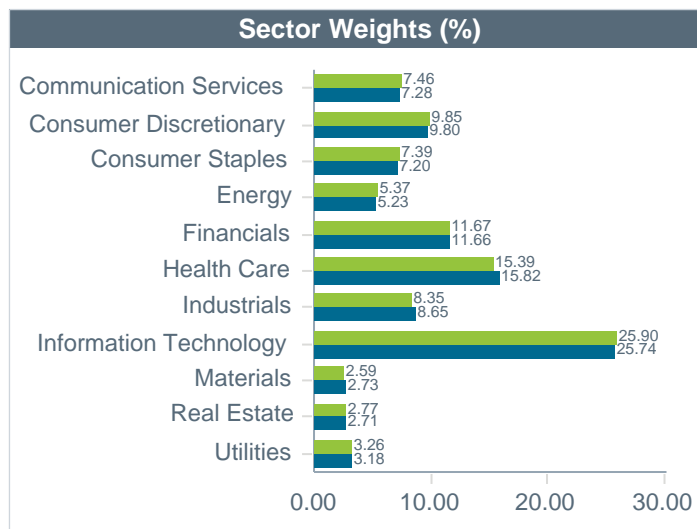
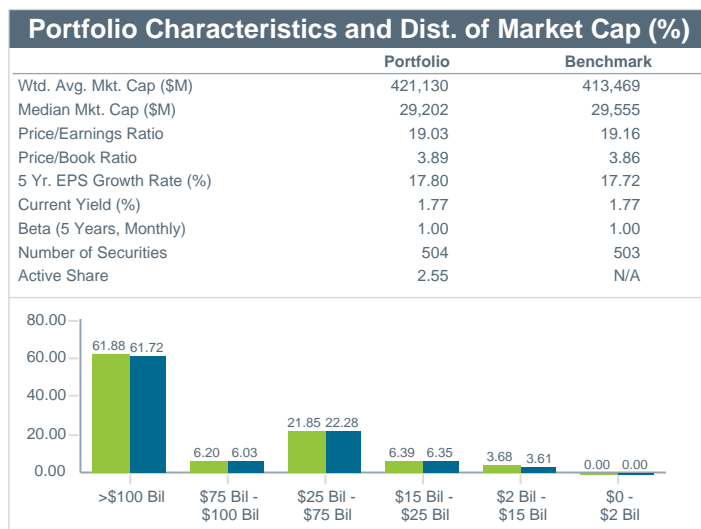
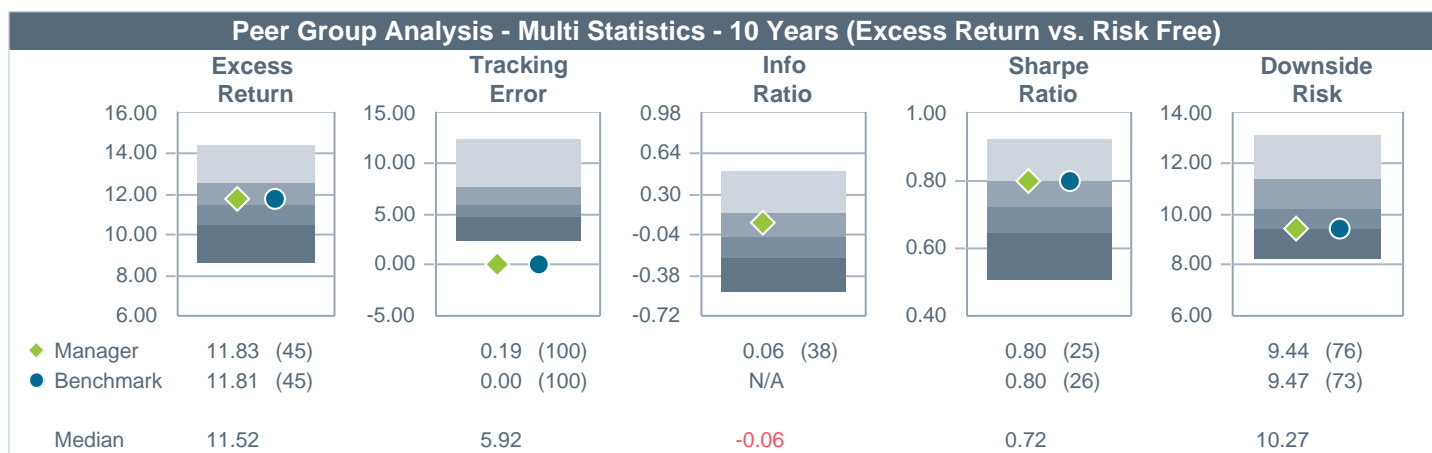
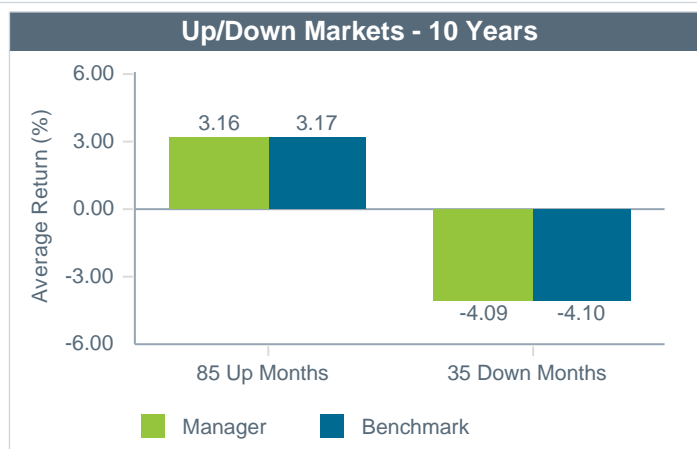
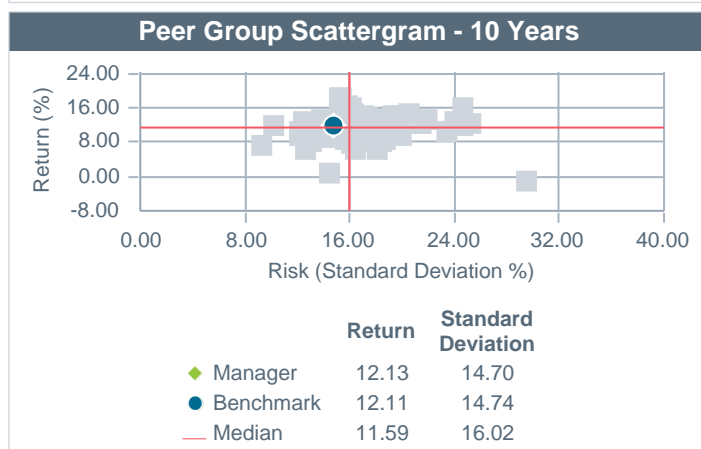
Manager: State Street All Cap

As of December 31, 2022

Benchmark: State Street All Cap Custom Index

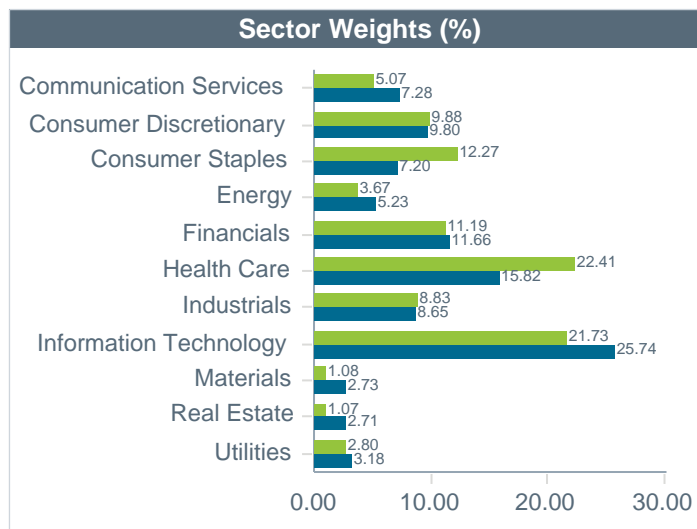
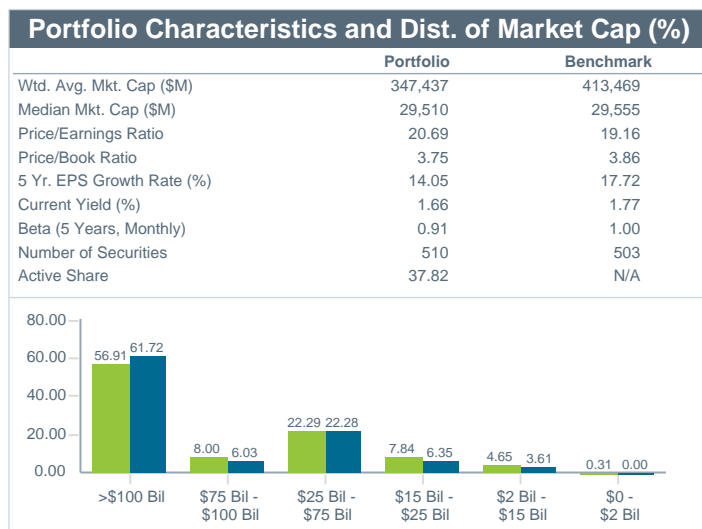
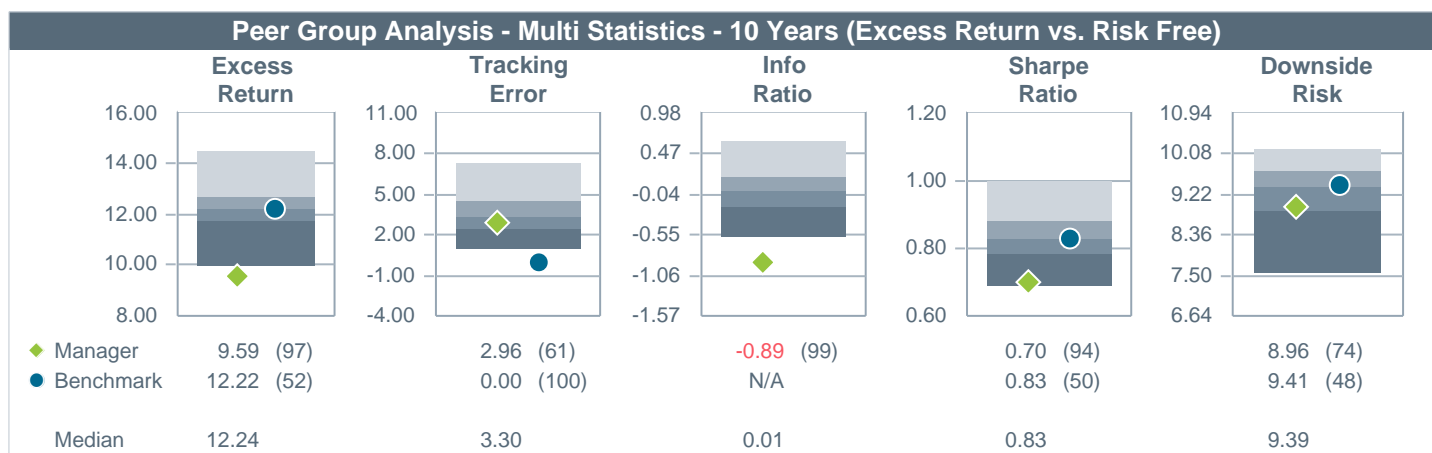
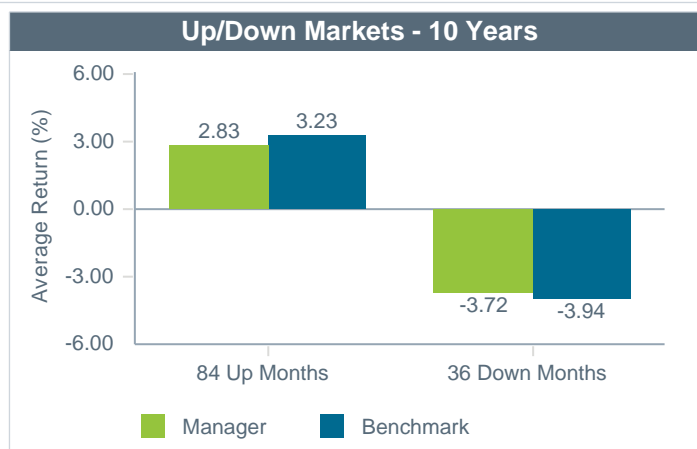
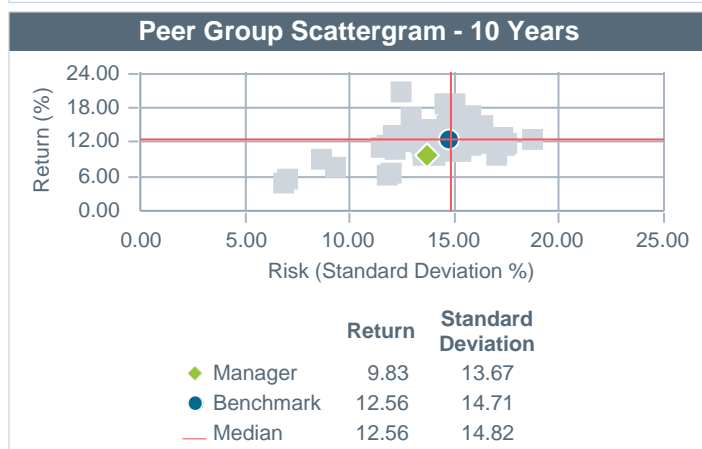
Peer Group: IM U.S. All Cap Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	7.57	-18.10	7.41	8.89	11.07	12.13	28.69	17.58	30.34	-5.25	19.79
Benchmark	7.56	-18.11	7.43	8.80	11.02	12.11	28.71	17.65	30.11	-5.50	19.85
Difference	0.01	0.01	-0.02	0.09	0.05	0.02	-0.02	-0.07	0.23	0.25	-0.06
Peer Group Median	9.35	-16.64	7.10	8.31	10.60	11.52	25.28	15.43	28.74	-5.80	19.69
Rank	66	60	46	39	36	38	27	46	42	46	50
Population	208	206	198	192	186	171	220	249	269	281	294



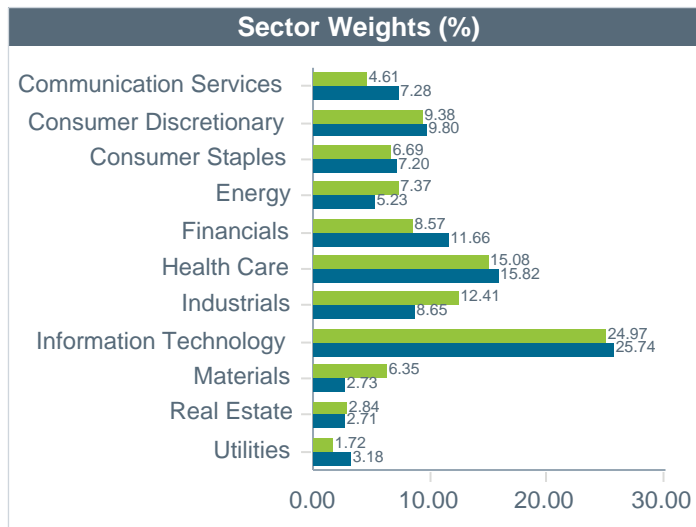
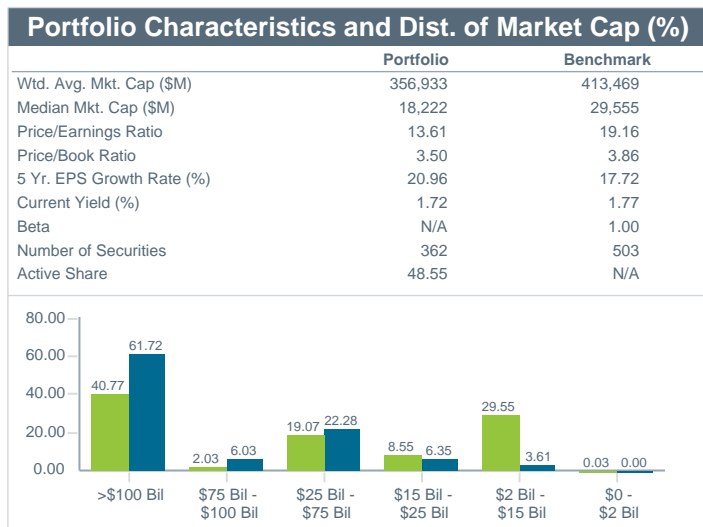
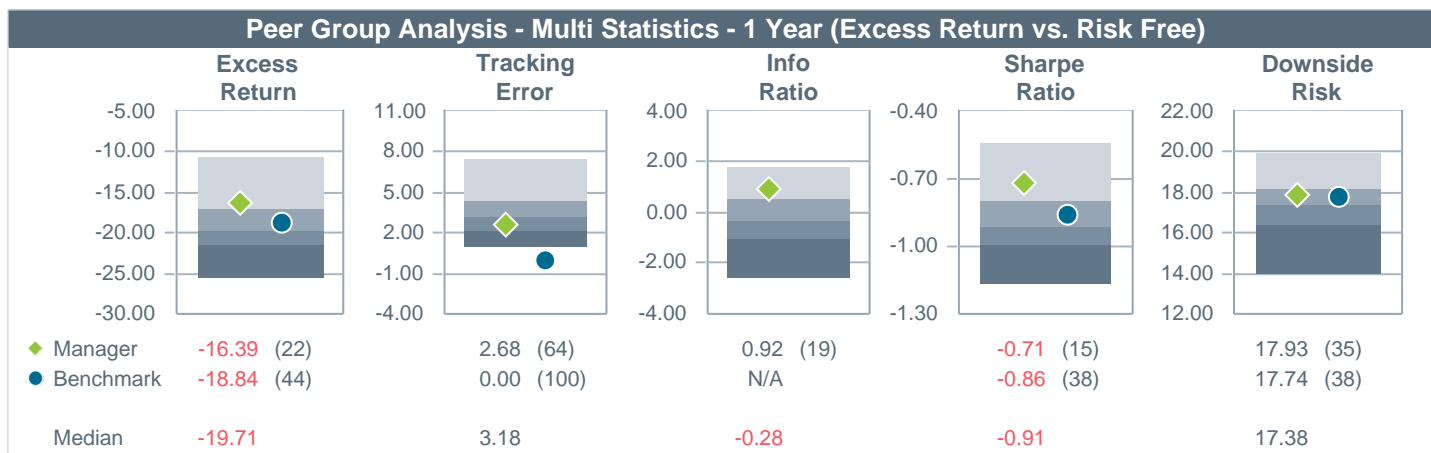
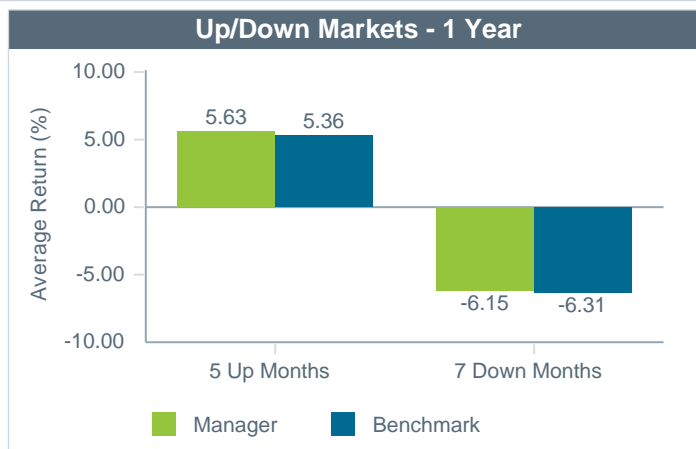
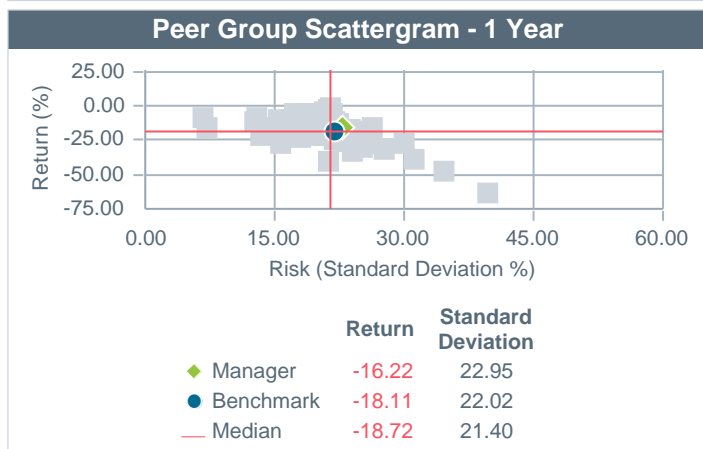
Performance shown is gross of fees. Performance prior to client inception consists of the State Street All Cap Custom Index. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	4.29	-18.28	4.94	5.99	8.82	9.83	23.24	14.73	25.88	-8.04	21.83
Benchmark	7.56	-18.11	7.66	9.42	11.48	12.56	28.71	18.40	31.49	-4.38	21.83
Difference	-3.27	-0.17	-2.72	-3.43	-2.66	-2.73	-5.47	-3.67	-5.61	-3.66	0.00
Peer Group Median	7.91	-16.49	7.63	9.20	11.32	12.56	27.71	17.54	30.03	-5.07	22.08
Rank	96	68	94	95	95	96	80	63	81	85	55
Population	206	204	197	190	186	162	212	229	256	277	303



Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

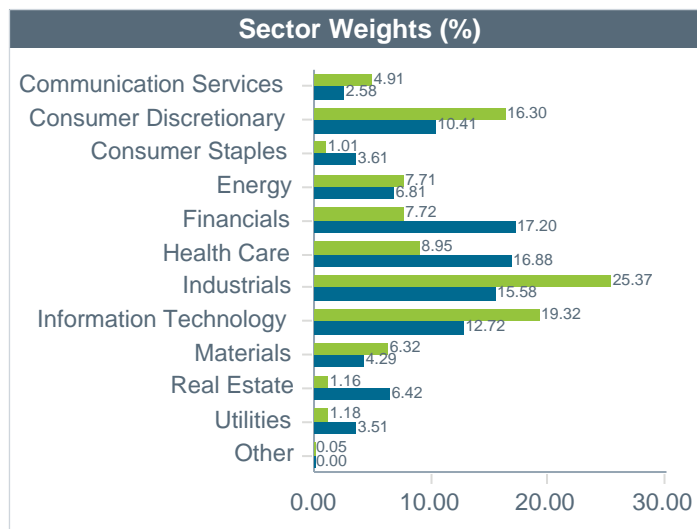
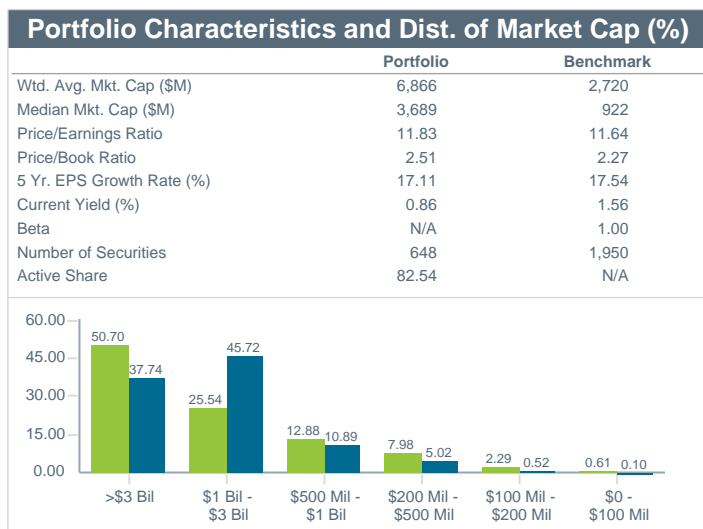
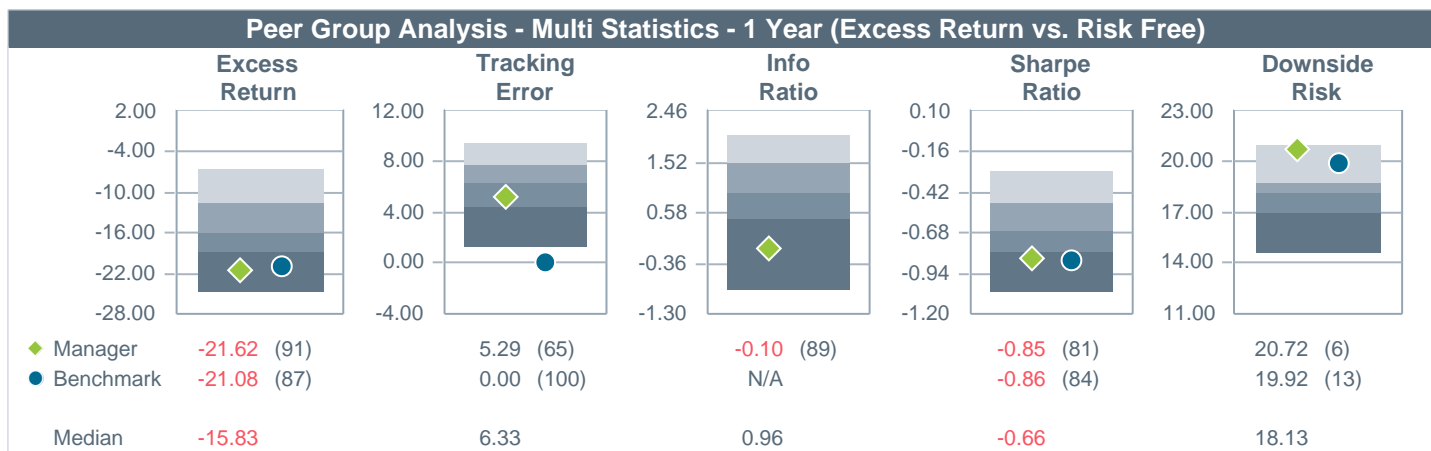
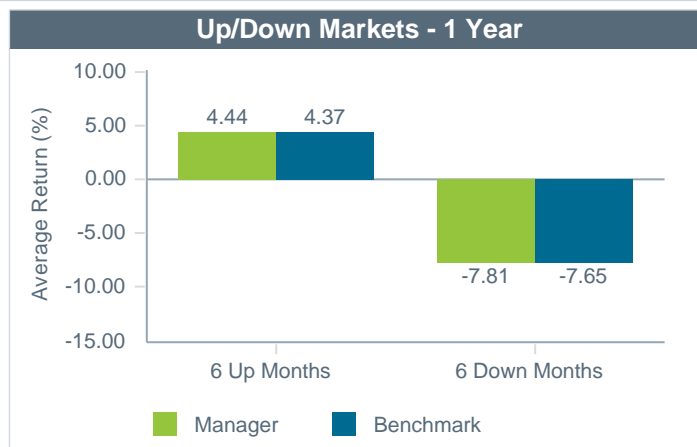
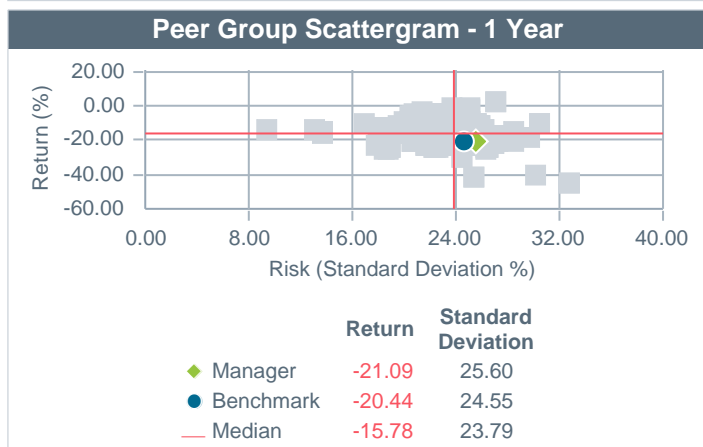
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	8.33	-16.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	7.56	-18.11	7.66	9.42	11.48	12.56	28.71	18.40	31.49	-4.38	21.83
Difference	0.77	1.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	7.83	-18.72	6.95	8.77	10.64	11.69	26.95	18.39	30.64	-5.45	21.45
Rank	42	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	656	632	552	497	444	396	605	584	582	579	558



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Manager: Internal Small Cap Equity Quantamental
As of December 31, 2022
Benchmark: Russell 2000 Index
Peer Group: IM U.S. Small Cap Core Equity (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	13.61	-21.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	6.23	-20.44	3.10	4.13	7.90	9.01	14.82	19.96	25.53	-11.01	14.65
Difference	7.38	-0.65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	9.65	-15.78	5.20	4.78	8.03	8.97	25.12	9.89	23.94	-12.71	12.09
Rank	4	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	684	679	652	613	524	414	701	720	740	775	773

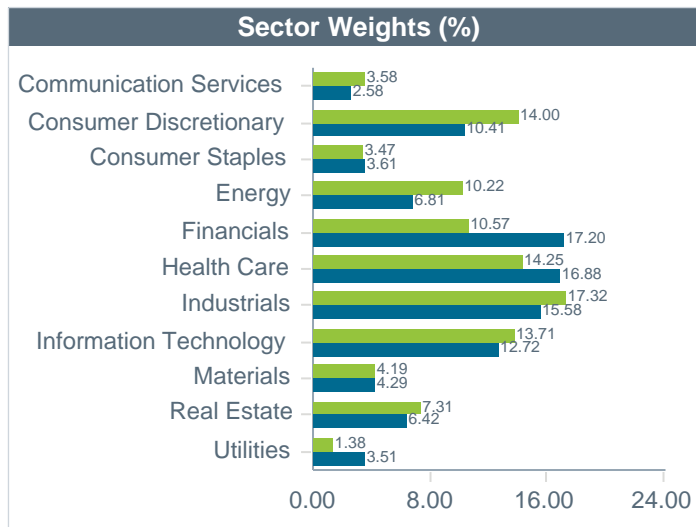
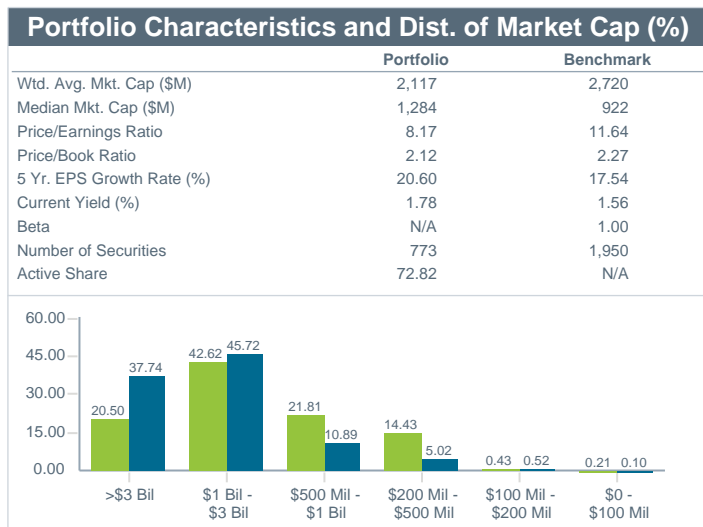
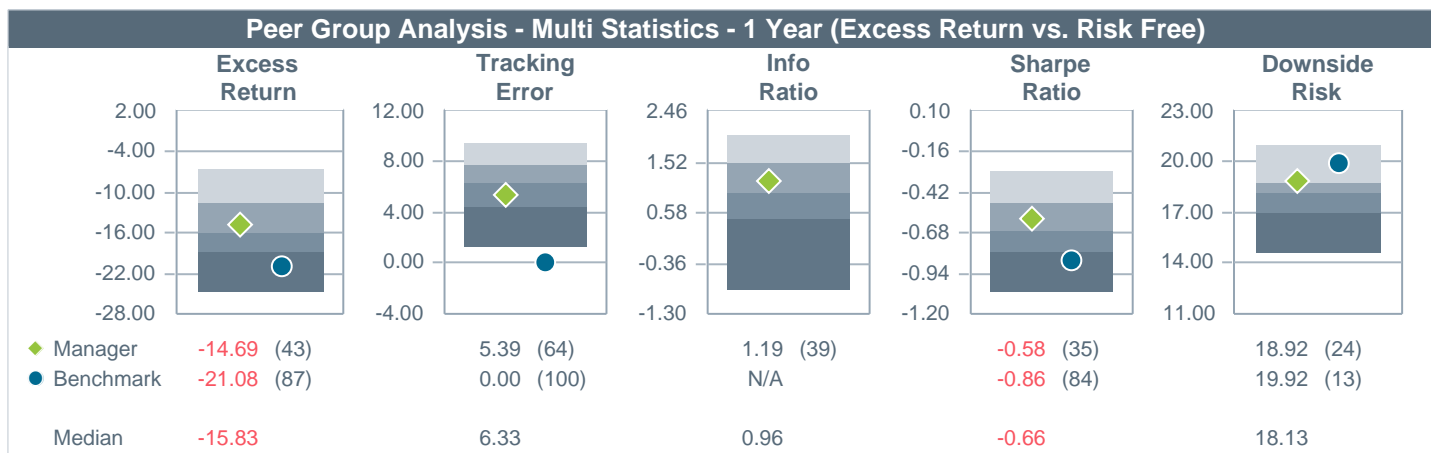
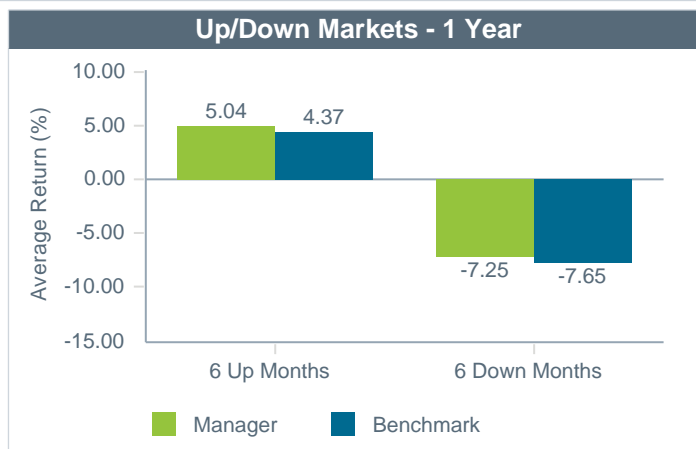
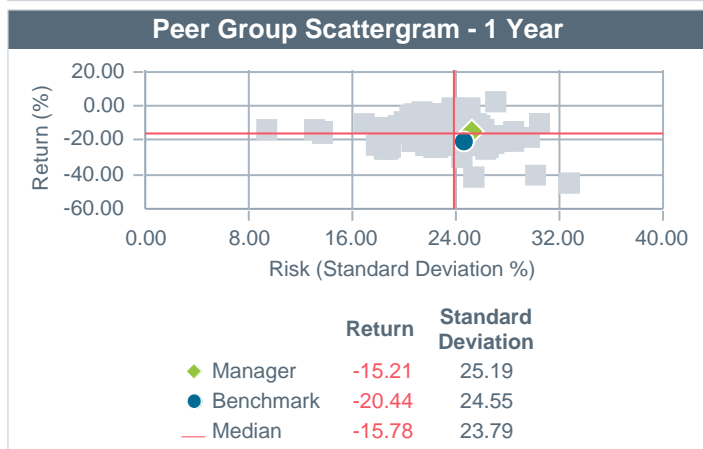


Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Manager: Internal Small Cap Equity Quantitative
As of December 31, 2022
Benchmark: Russell 2000 Index

Peer Group: IM U.S. Small Cap Core Equity (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	9.56	-15.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	6.23	-20.44	3.10	4.13	7.90	9.01	14.82	19.96	25.53	-11.01	14.65
Difference	3.33	5.23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	9.65	-15.78	5.20	4.78	8.03	8.97	25.12	9.89	23.94	-12.71	12.09
Rank	52	46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	684	679	652	613	524	414	701	720	740	775	773



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

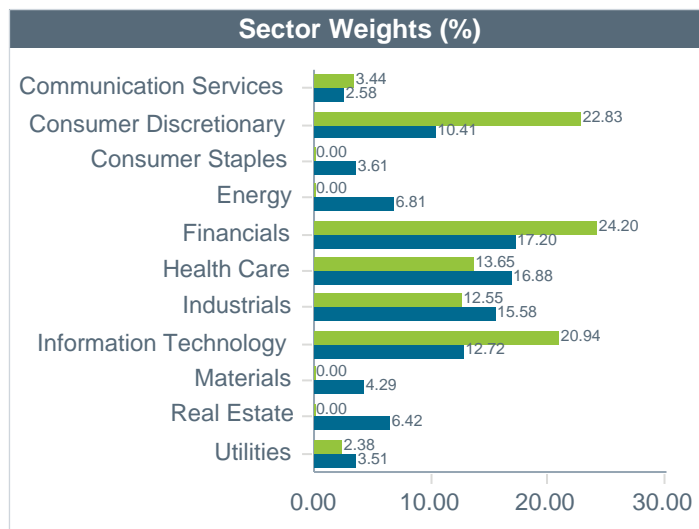
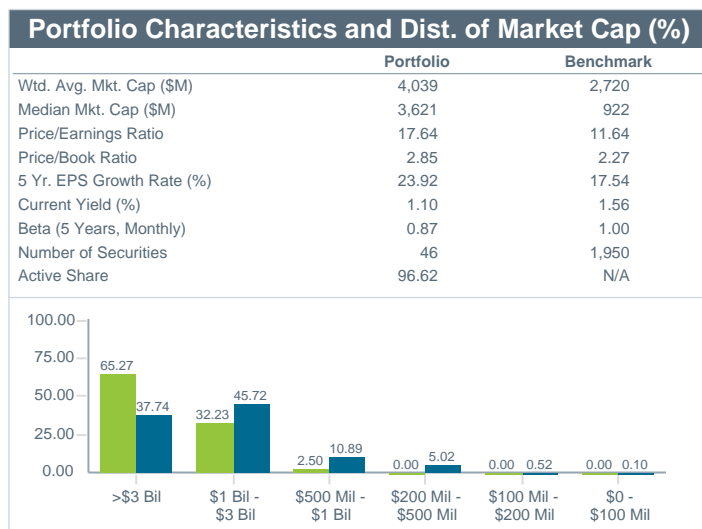
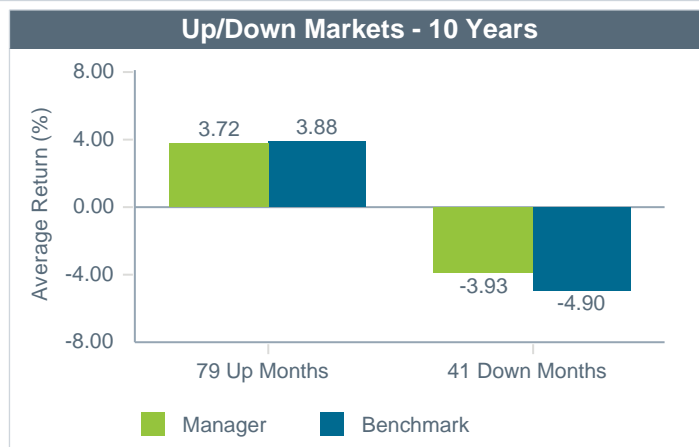
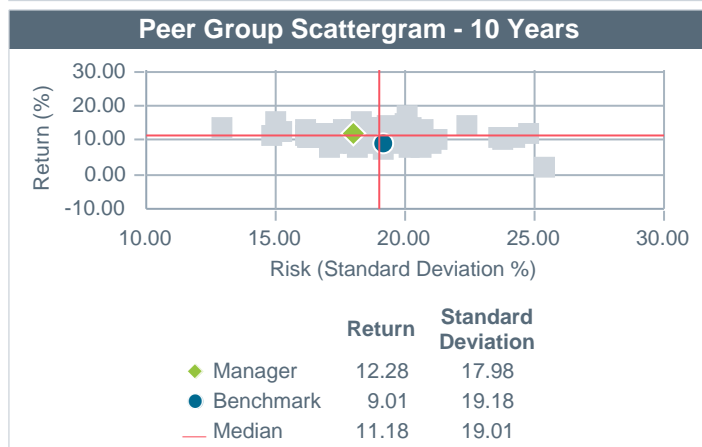
Manager: Van Berkom

As of December 31, 2022

Benchmark: Russell 2000 Index

Peer Group: IM U.S. Small Cap Core Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	13.65	-12.00	3.91	7.27	11.06	12.28	16.73	9.22	29.96	-2.61	16.57
Benchmark	6.23	-20.44	3.10	4.13	7.90	9.01	14.82	19.96	25.53	-11.01	14.65
Difference	7.42	8.44	0.81	3.14	3.16	3.27	1.91	-10.74	4.43	8.40	1.92
Peer Group Median	9.08	-16.18	6.59	7.25	10.02	11.15	24.10	18.71	25.88	-10.11	15.10
Rank	2	15	91	50	30	24	86	84	23	8	37
Population	140	139	133	130	123	110	152	158	168	188	191



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

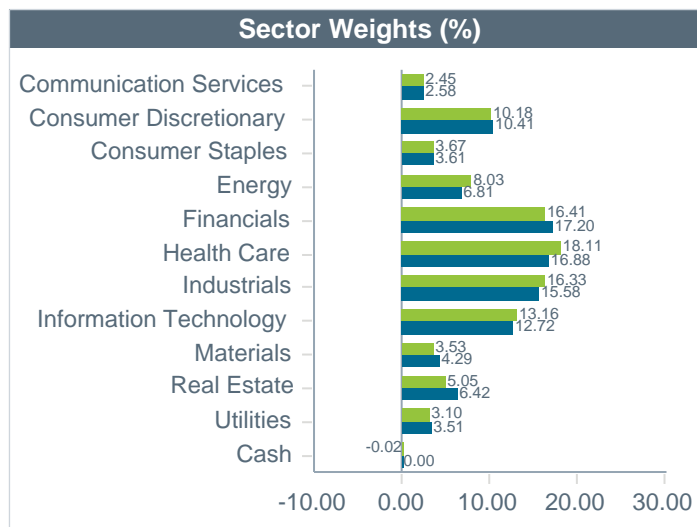
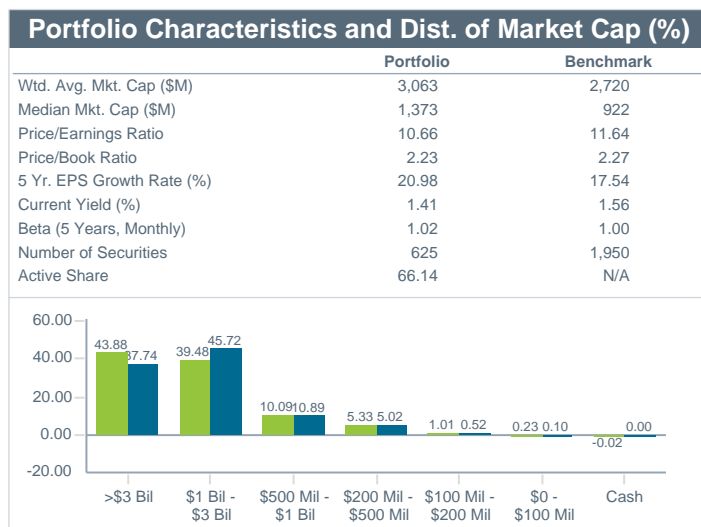
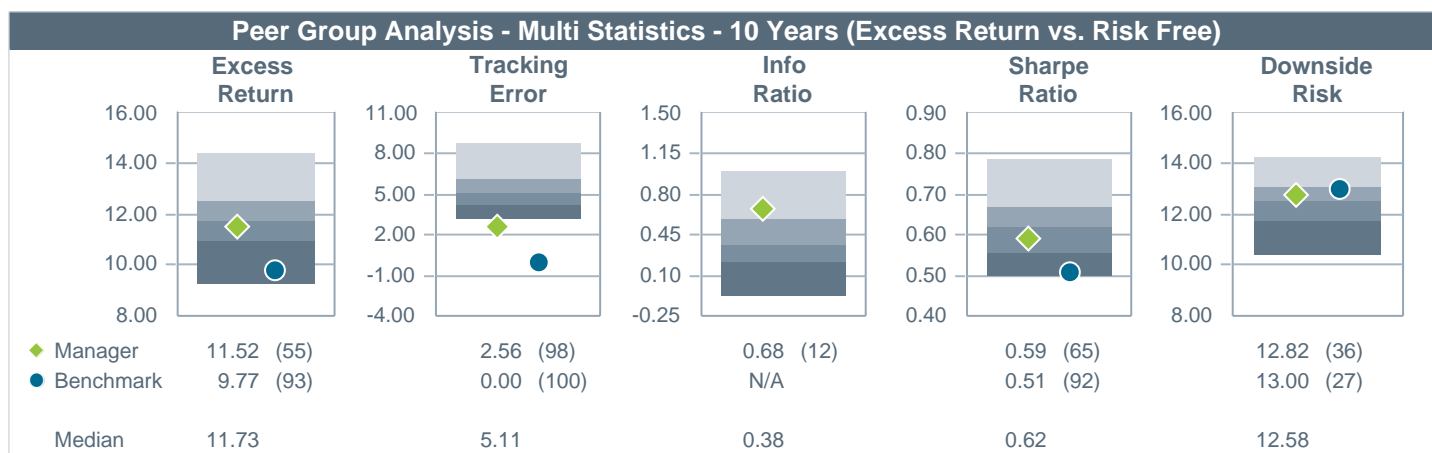
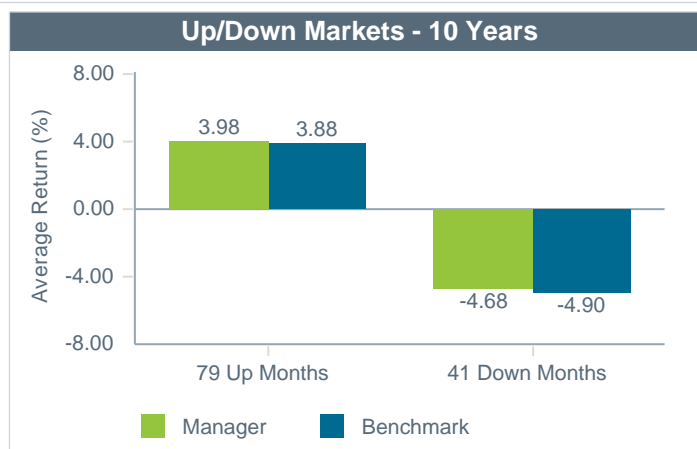
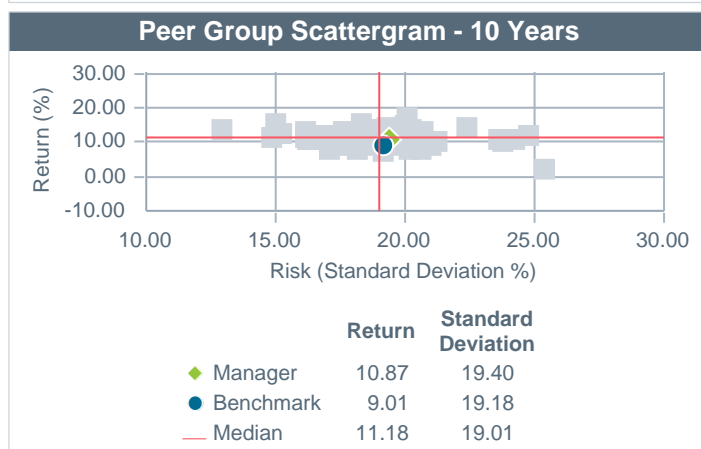
Manager: BlackRock Small Cap

As of December 31, 2022

Benchmark: Russell 2000 Index

Peer Group: IM U.S. Small Cap Core Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	8.07	-18.56	4.90	6.80	9.72	10.87	15.95	22.26	32.64	-9.26	11.44
Benchmark	6.23	-20.44	3.10	4.13	7.90	9.01	14.82	19.96	25.53	-11.01	14.65
Difference	1.84	1.88	1.80	2.67	1.82	1.86	1.13	2.30	7.11	1.75	-3.21
Peer Group Median	9.08	-16.18	6.59	7.25	10.02	11.15	24.10	18.71	25.88	-10.11	15.10
Rank	60	70	80	57	54	58	89	32	13	40	81
Population	140	139	133	130	123	110	152	158	168	188	191



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.



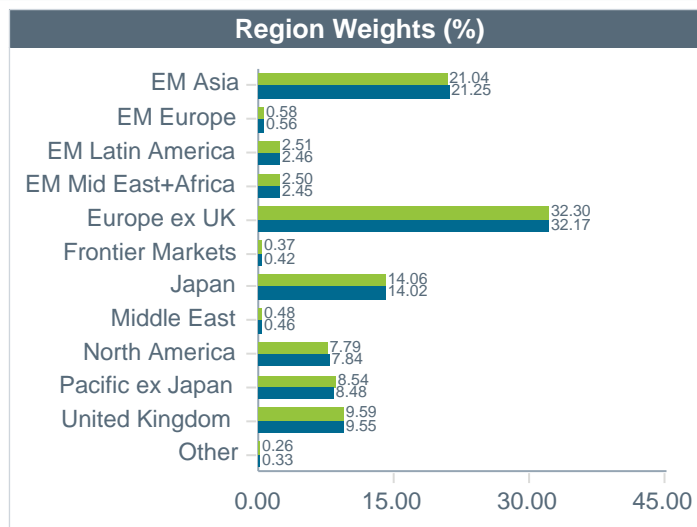
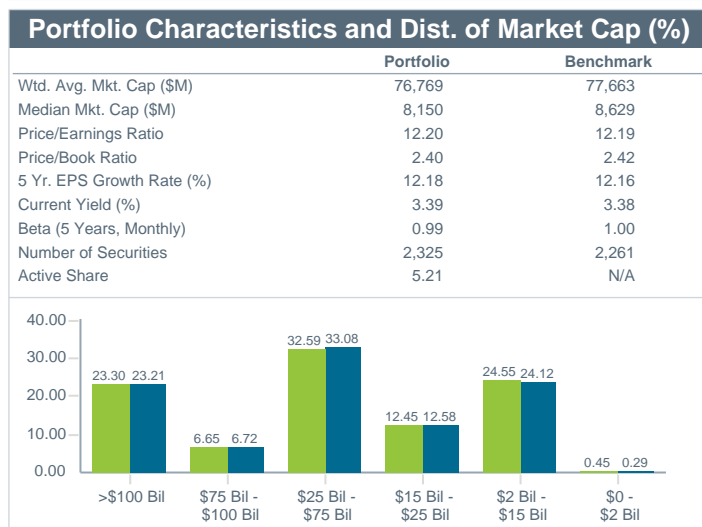
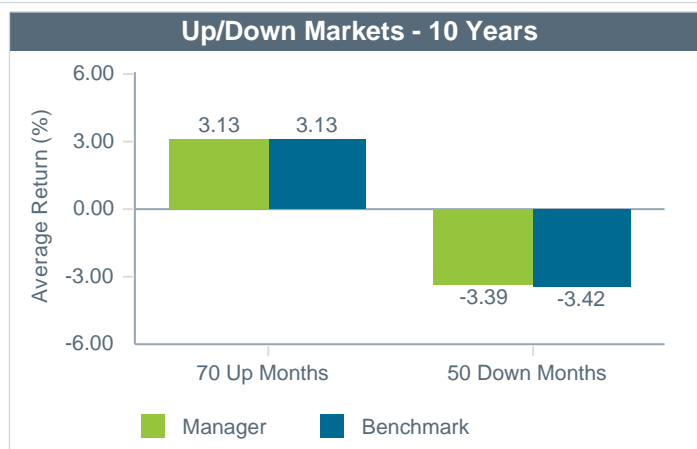
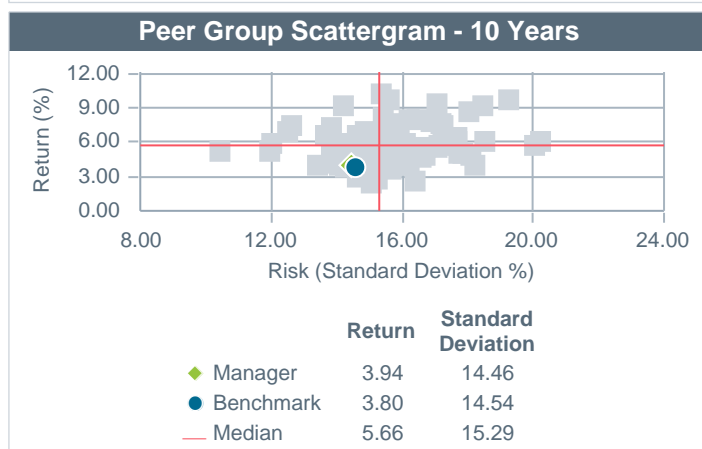
Manager: Northern Trust

As of December 31, 2022

Benchmark: MSCI ACW Ex US Index (USD) (Net)

Peer Group: IM All ACWI Ex US (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	14.23	-15.86	0.15	1.04	4.96	3.94	7.86	10.69	21.66	-13.81	27.51
Benchmark	14.28	-16.00	0.07	0.88	4.80	3.80	7.82	10.65	21.51	-14.20	27.19
Difference	-0.05	0.14	0.08	0.16	0.16	0.14	0.04	0.04	0.15	0.39	0.32
Peer Group Median	14.99	-17.08	1.18	2.23	5.59	5.66	9.37	14.71	24.92	-14.61	28.71
Rank	67	44	71	75	68	92	66	60	69	40	62
Population	143	142	141	141	141	130	149	161	168	178	188



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Region allocation to other consists of Luxembourg.

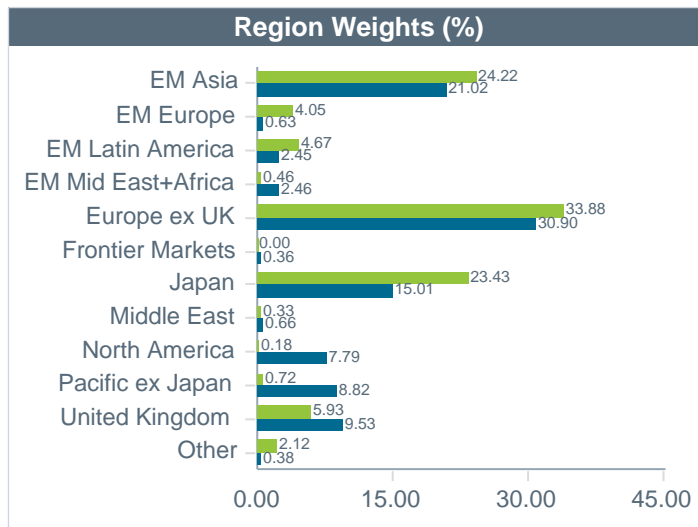
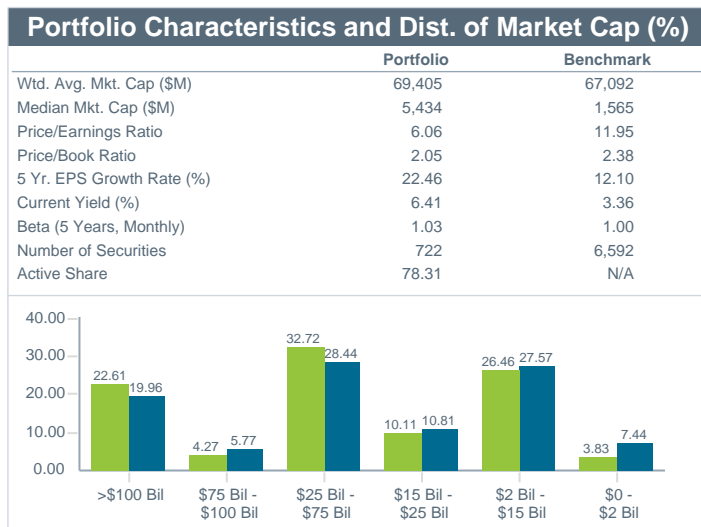
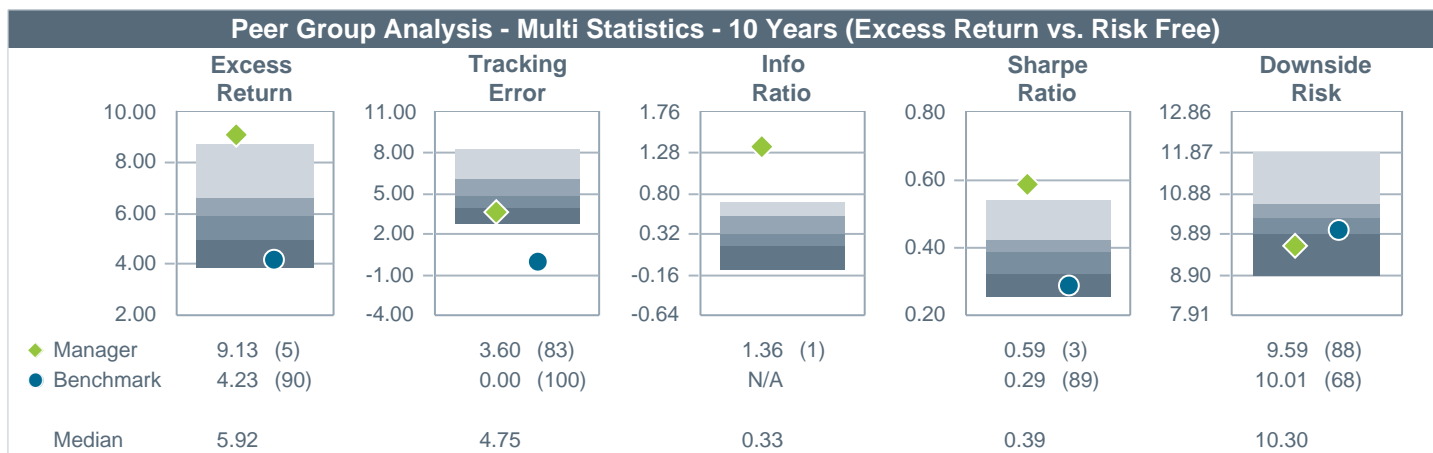
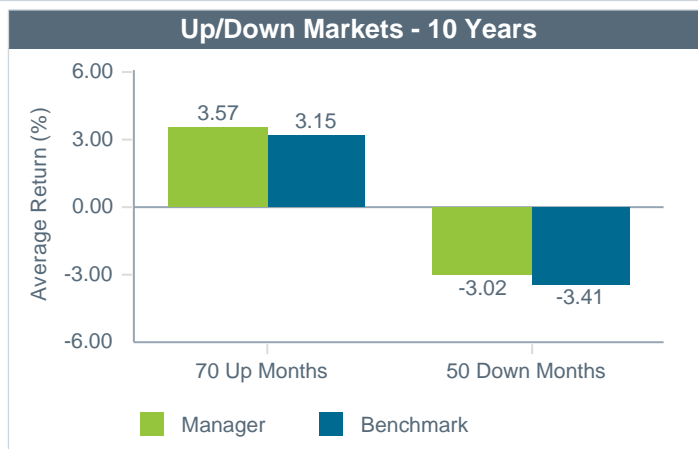
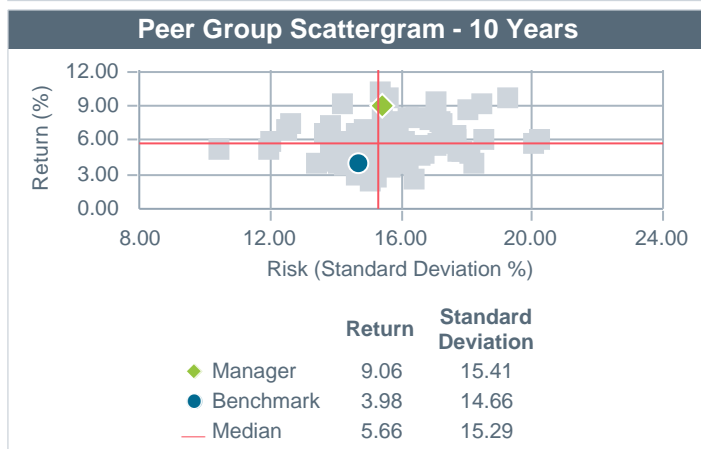
Manager: Arrowstreet

As of December 31, 2022

Benchmark: MSCI ACW Ex US IM Index (USD) (Net)

Peer Group: IM All ACWI Ex US (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	15.13	-10.10	8.23	6.16	9.45	9.06	14.38	23.28	23.43	-13.84	29.12
Benchmark	14.15	-16.58	0.20	0.85	4.84	3.98	8.53	11.12	21.63	-14.76	27.81
Difference	0.98	6.48	8.03	5.31	4.61	5.08	5.85	12.16	1.80	0.92	1.31
Peer Group Median	14.99	-17.08	1.18	2.23	5.59	5.66	9.37	14.71	24.92	-14.61	28.71
Rank	47	16	1	4	5	5	12	22	57	41	48
Population	143	142	141	141	141	130	149	161	168	178	188



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

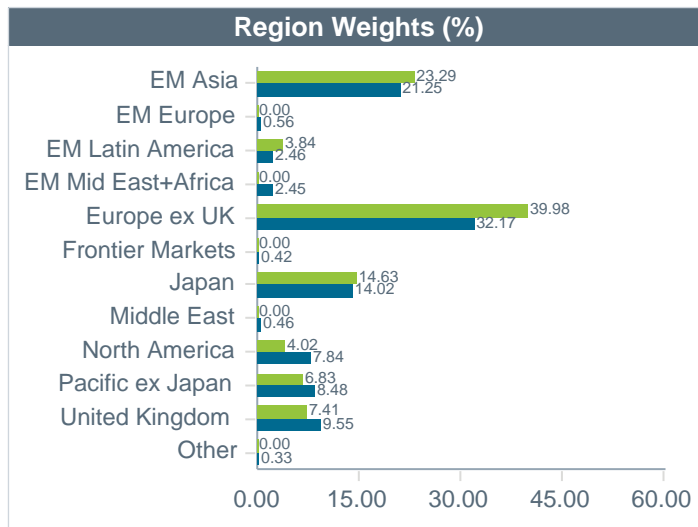
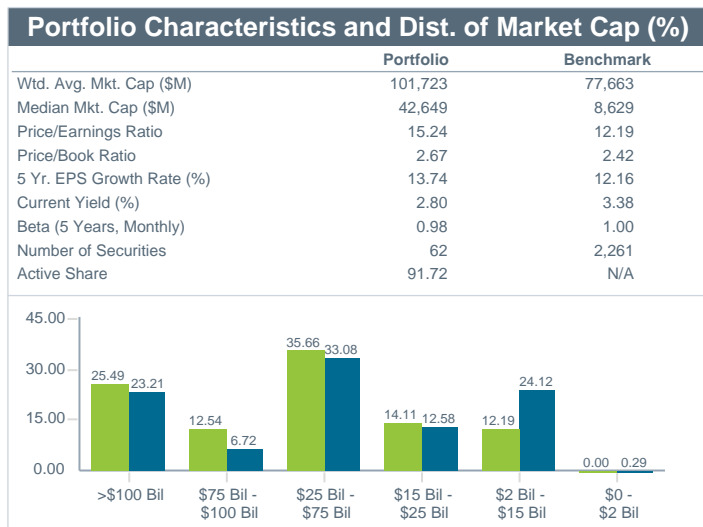
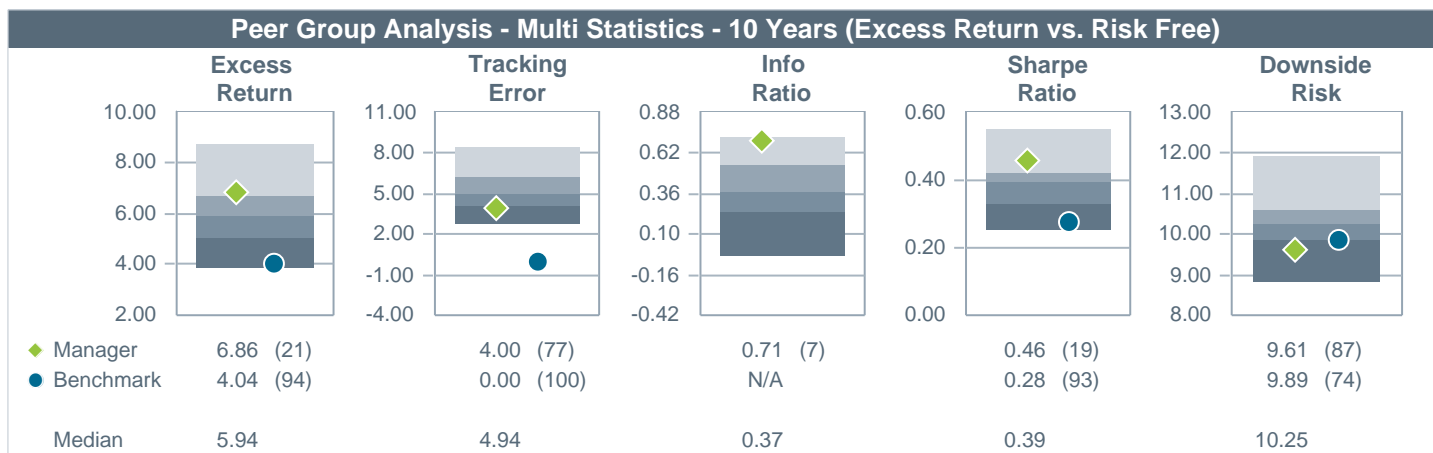
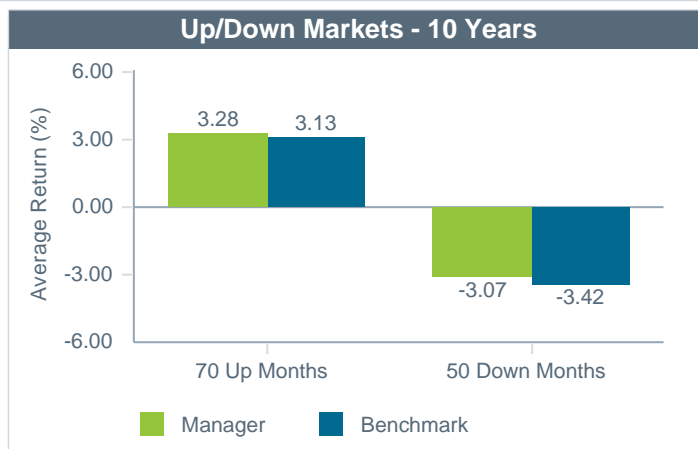
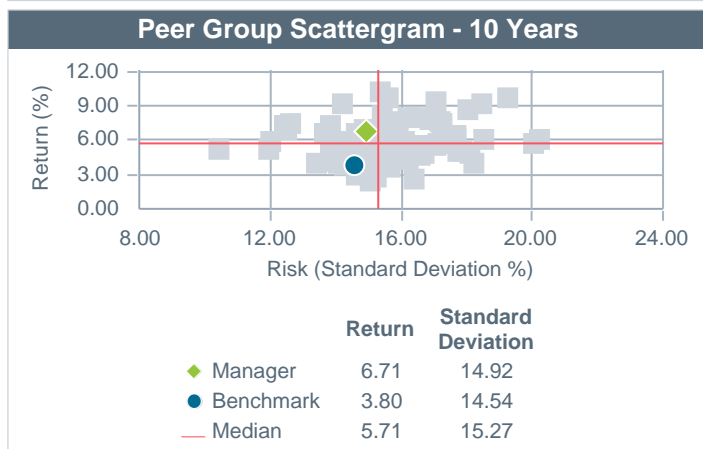
Manager: Harding Loevner

As of December 31, 2022

Benchmark: MSCI ACW Ex US Index (USD) (Net)

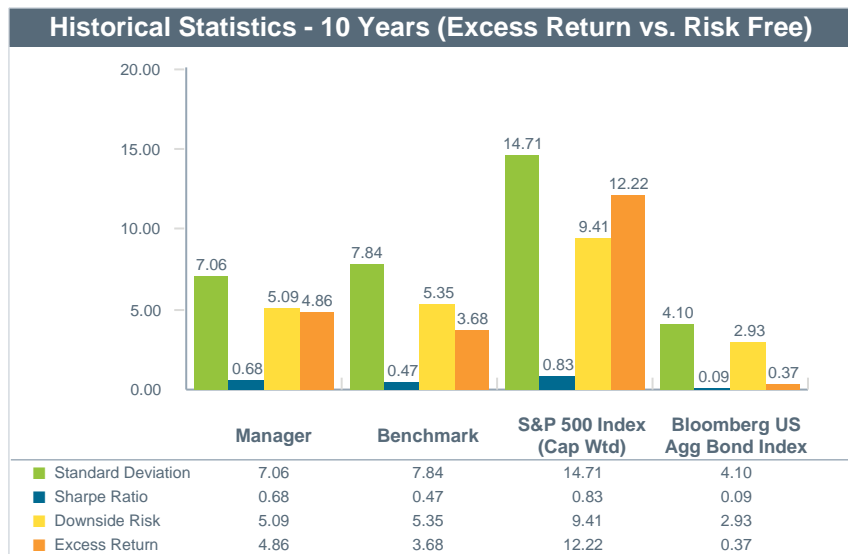
Peer Group: IM All ACWI Ex US (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	14.09	-16.94	2.94	3.63	7.51	6.71	8.65	20.86	26.27	-13.24	30.86
Benchmark	14.28	-16.00	0.07	0.88	4.80	3.80	7.82	10.65	21.51	-14.20	27.19
Difference	-0.19	-0.94	2.87	2.75	2.71	2.91	0.83	10.21	4.76	0.96	3.67
Peer Group Median	14.99	-17.08	1.18	2.23	5.59	5.66	9.37	14.71	24.92	-14.61	28.71
Rank	69	50	20	17	13	17	58	31	43	33	37
Population	143	142	141	141	141	130	149	161	168	178	188



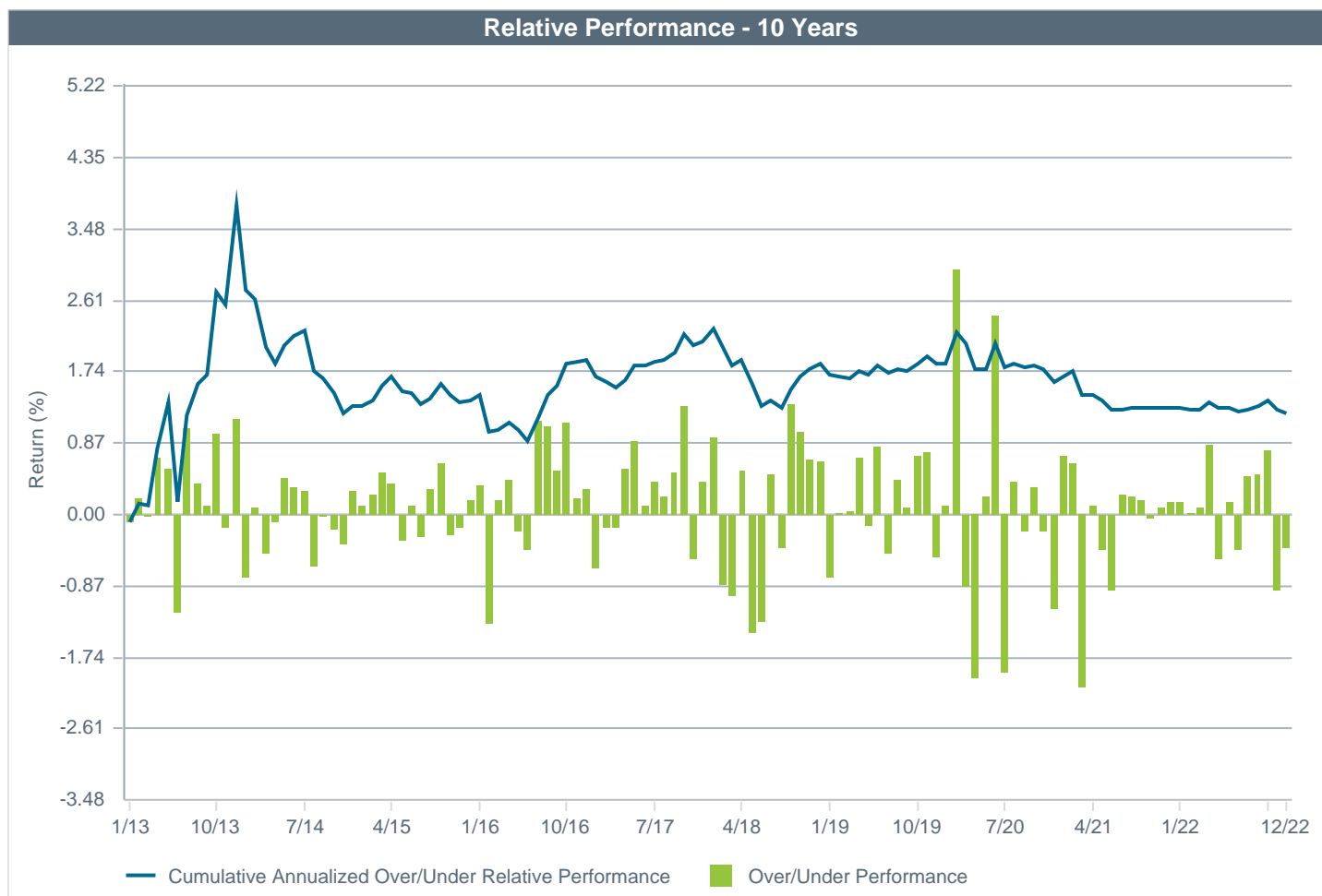
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	2.53	-11.41	-0.01	2.88	4.54	5.50	4.48	8.01	19.68	-3.68	12.31
Benchmark	3.10	-12.04	0.13	2.49	3.33	4.21	5.71	7.97	17.64	-4.25	9.11
Difference	-0.57	0.63	-0.14	0.39	1.21	1.29	-1.23	0.04	2.04	0.57	3.20



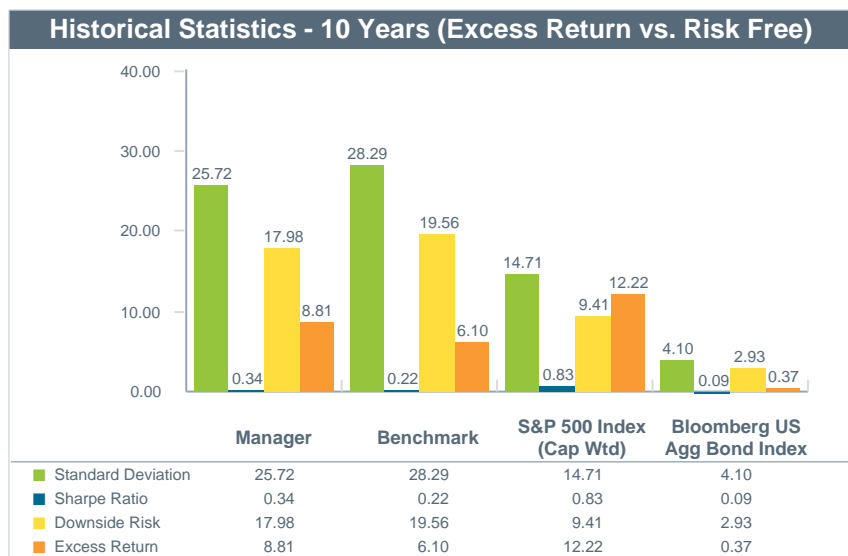
Actual Correlation - 10 Years

	Actual Correlation
Preferred Stock Custom Index	0.97
S&P 500 Index (Cap Wtd)	0.82
Russell 2000 Index	0.75
MSCI EAFE Index (USD) (Net)	0.79
MSCI Emg Mkts Index (USD) (Net)	0.76
Bloomberg US Agg Bond Index	0.47
Bloomberg US Trsy US TIPS Index	0.53
NCREIF ODCE Index (AWA) (Gross)	-0.32
Wilshire US REIT Index	0.74
HFRI FOF Comp Index	0.83
Bloomberg Cmnty Index (TR)	0.34
ICE BofAML 3 Mo US T-Bill Index	-0.14
Cons Price Index (Unadjusted)	-0.21



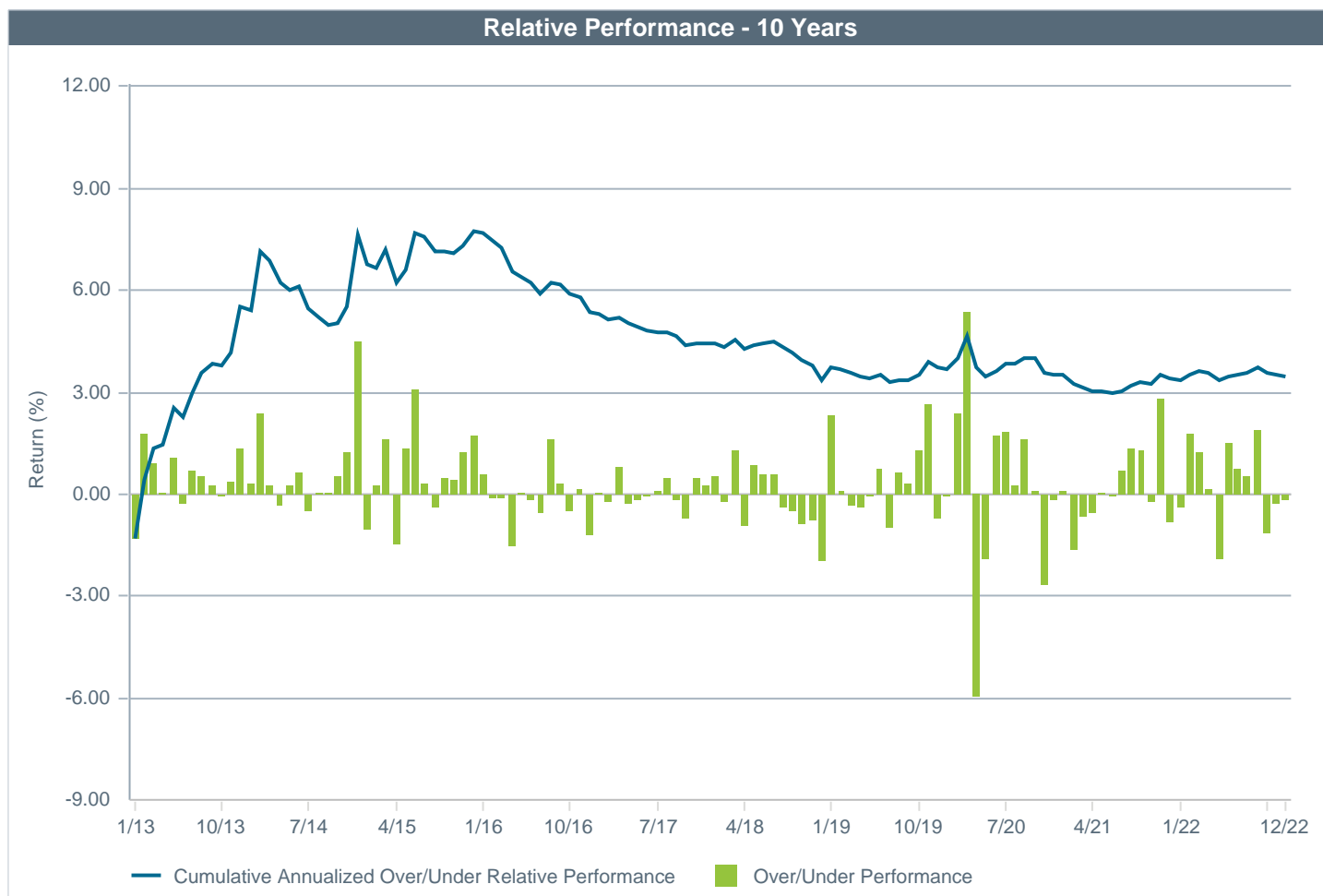
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on quarterly periodicity.

	Performance										
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	7.51	31.24	12.50	7.08	7.04	6.20	42.64	-23.94	13.82	-13.12	-4.98
Benchmark	9.27	26.26	9.39	4.45	5.26	2.65	39.33	-25.60	7.55	-11.67	-5.58
Difference	-1.76	4.98	3.11	2.63	1.78	3.55	3.31	1.66	6.27	-1.45	0.60



Actual Correlation - 10 Years

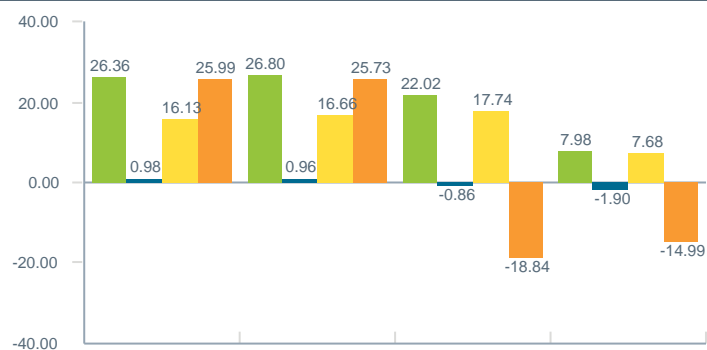
	Actual Correlation
MLP Custom Index	0.99
S&P 500 Index (Cap Wtd)	0.69
Russell 2000 Index	0.73
MSCI EAFE Index (USD) (Net)	0.62
MSCI Emg Mkts Index (USD) (Net)	0.54
Bloomberg US Agg Bond Index	-0.15
Bloomberg US Trsy US TIPS Index	0.11
NCREIF ODCE Index (AWA) (Gross)	-0.03
Wilshire US REIT Index	0.58
HFRI FOF Comp Index	0.70
Bloomberg Cmtty Index (TR)	0.70
ICE BofAML 3 Mo US T-Bill Index	-0.24
Cons Price Index (Unadjusted)	0.28



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	9.14	26.76	N/A	N/A	N/A	N/A	40.02	N/A	N/A	N/A	N/A
Benchmark	9.27	26.26	9.39	4.45	5.26	2.65	39.33	-25.60	7.55	-11.67	-5.58
Difference	-0.13	0.50	N/A	N/A	N/A	N/A	0.69	N/A	N/A	N/A	N/A

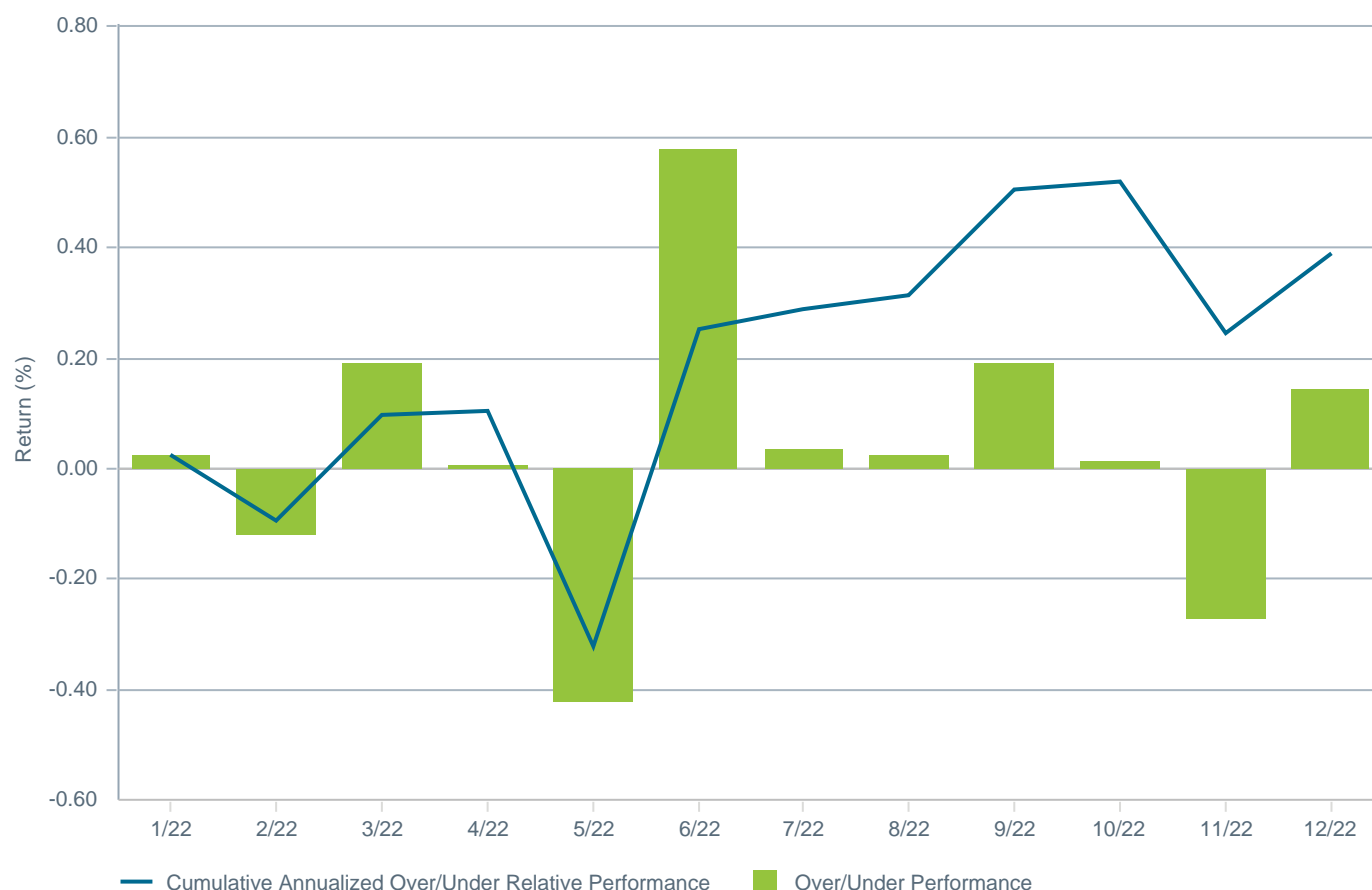
Historical Statistics - 1 Year (Excess Return vs. Risk Free)



Actual Correlation - 1 Year

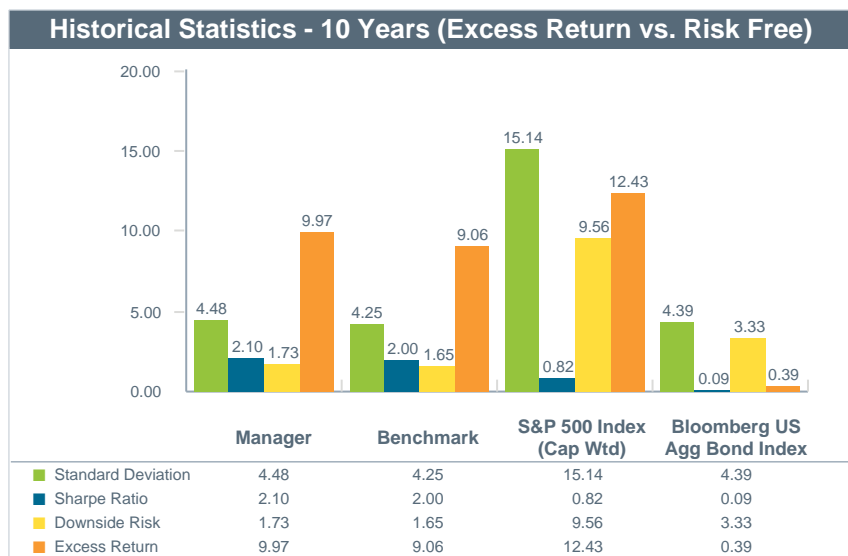
	Actual Correlation
MLP Custom Index	1.00
S&P 500 Index (Cap Wtd)	0.56
Russell 2000 Index	0.44
MSCI EAFE Index (USD) (Net)	0.37
MSCI Emg Mkts Index (USD) (Net)	0.33
Bloomberg US Agg Bond Index	-0.01
Bloomberg US Trsy US TIPS Index	0.48
NCREIF ODCE Index (AWA) (Gross)	0.13
Wilshire US REIT Index	0.71
HFRI FOF Comp Index	0.23
Bloomberg Cmnty Index (TR)	0.91
ICE BofAML 3 Mo US T-Bill Index	-0.01
Cons Price Index (Unadjusted)	0.02
MLP Custom Index	1.00

Relative Performance - 1 Year



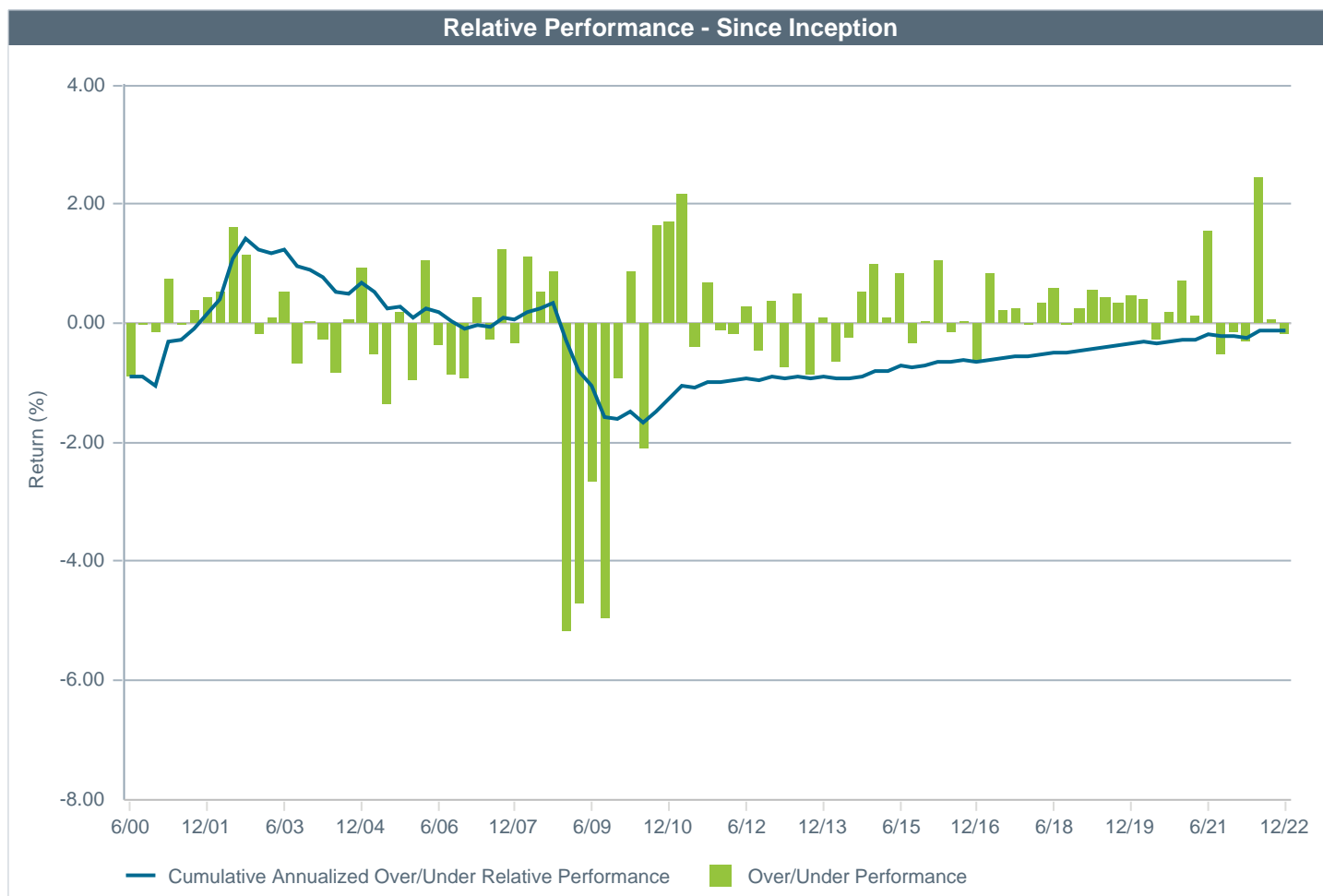
Performance shown is gross of fees and client specific. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-5.15	9.62	11.41	10.22	9.88	11.06	23.38	2.24	7.26	9.66	8.99
Benchmark	-4.97	7.47	9.93	8.68	8.54	10.10	22.17	1.19	5.34	8.35	7.62
Difference	-0.18	2.15	1.48	1.54	1.34	0.96	1.21	1.05	1.92	1.31	1.37



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.96
S&P 500 Index (Cap Wtd)	-0.27
Russell 2000 Index	-0.30
MSCI EAFE Index (USD) (Net)	-0.39
MSCI Emg Mkts Index (USD) (Net)	-0.36
Bloomberg US Agg Bond Index	-0.39
Bloomberg US Trsy US TIPS Index	-0.30
Wilshire US REIT Index	-0.04
HFRI FOF Comp Index	-0.29
Bloomberg Cmdty Index (TR)	0.04
ICE BofAML 3 Mo US T-Bill Index	-0.53
Cons Price Index (Unadjusted)	0.46



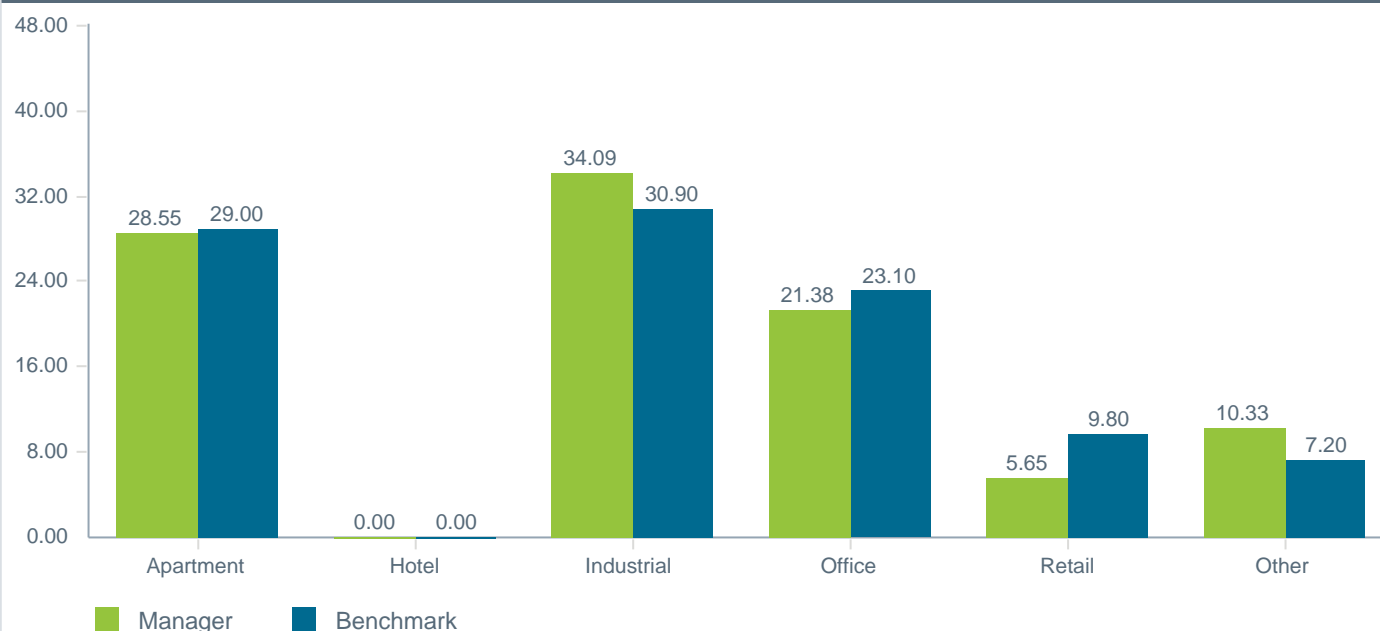
Investment Strategy

The Fund pursues a diversified core real estate strategy and seeks to provide its investors with a reliable total investment gross return of approximately 8% to 10% over a market cycle and to outperform the NCREIF ODCE. The Fund manages a portfolio of institutional quality real estate assets diversified across the four major property types (office, industrial, retail and multi-family) and across major metropolitan areas. The Fund operates with moderate leverage and may invest up to 15% of its gross assets in higher risk, non-core type real estate investment opportunities.

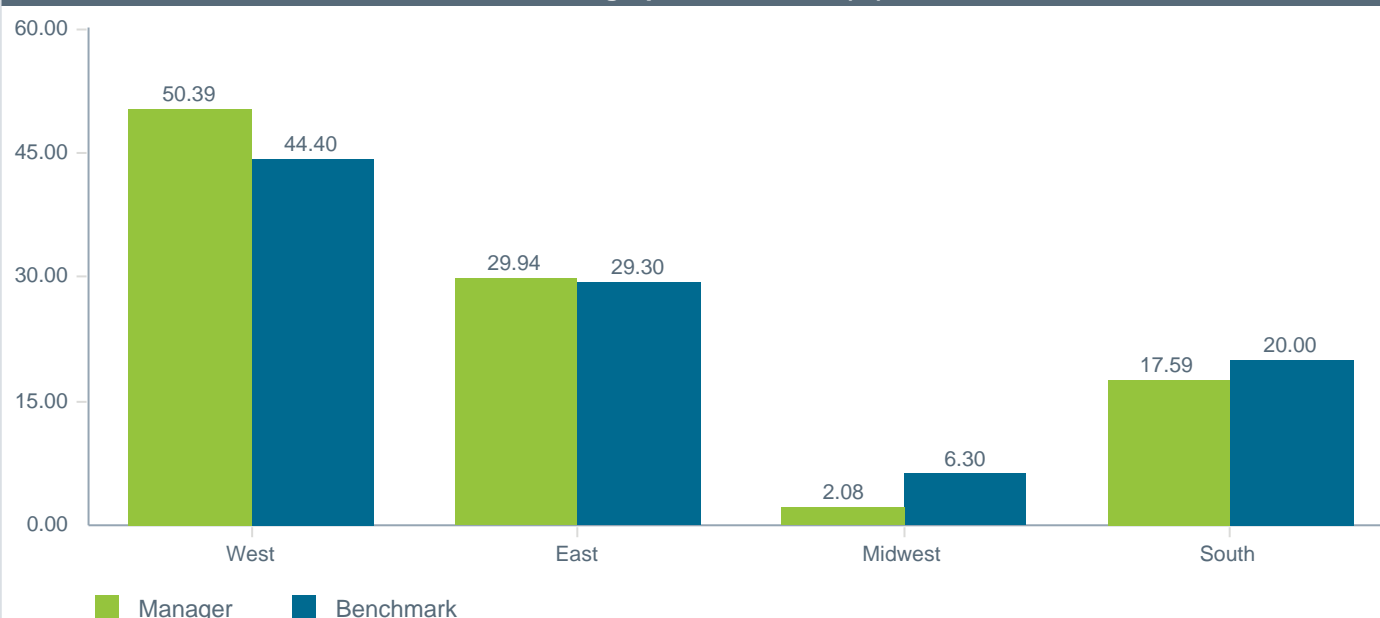
Investment Profile

Fund Inception	2000
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (mm) \$	23,974
Fund Leverage %	20.40
Portfolio Occupancy %	92.80
Cash Reserve %	1.40
Number of Investments	186
Number of Limited Partners	567

Property Type Allocation (%)

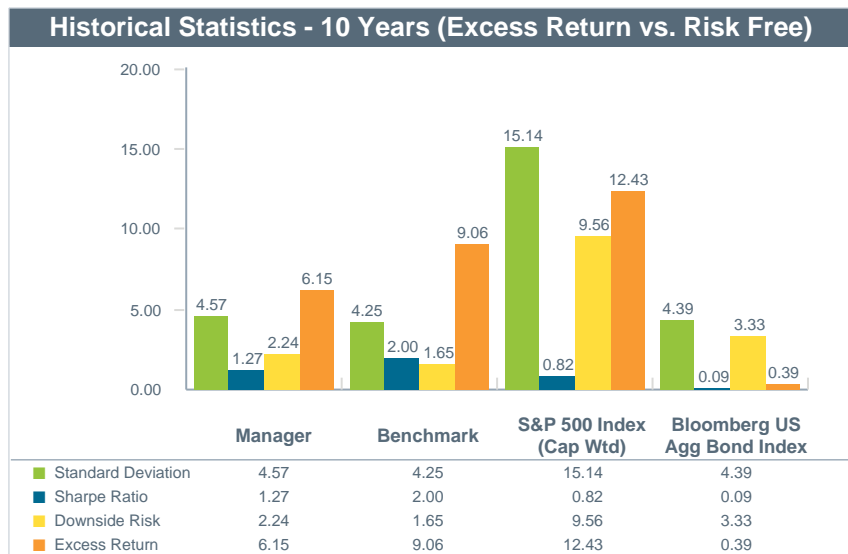


Geographic Allocation (%)



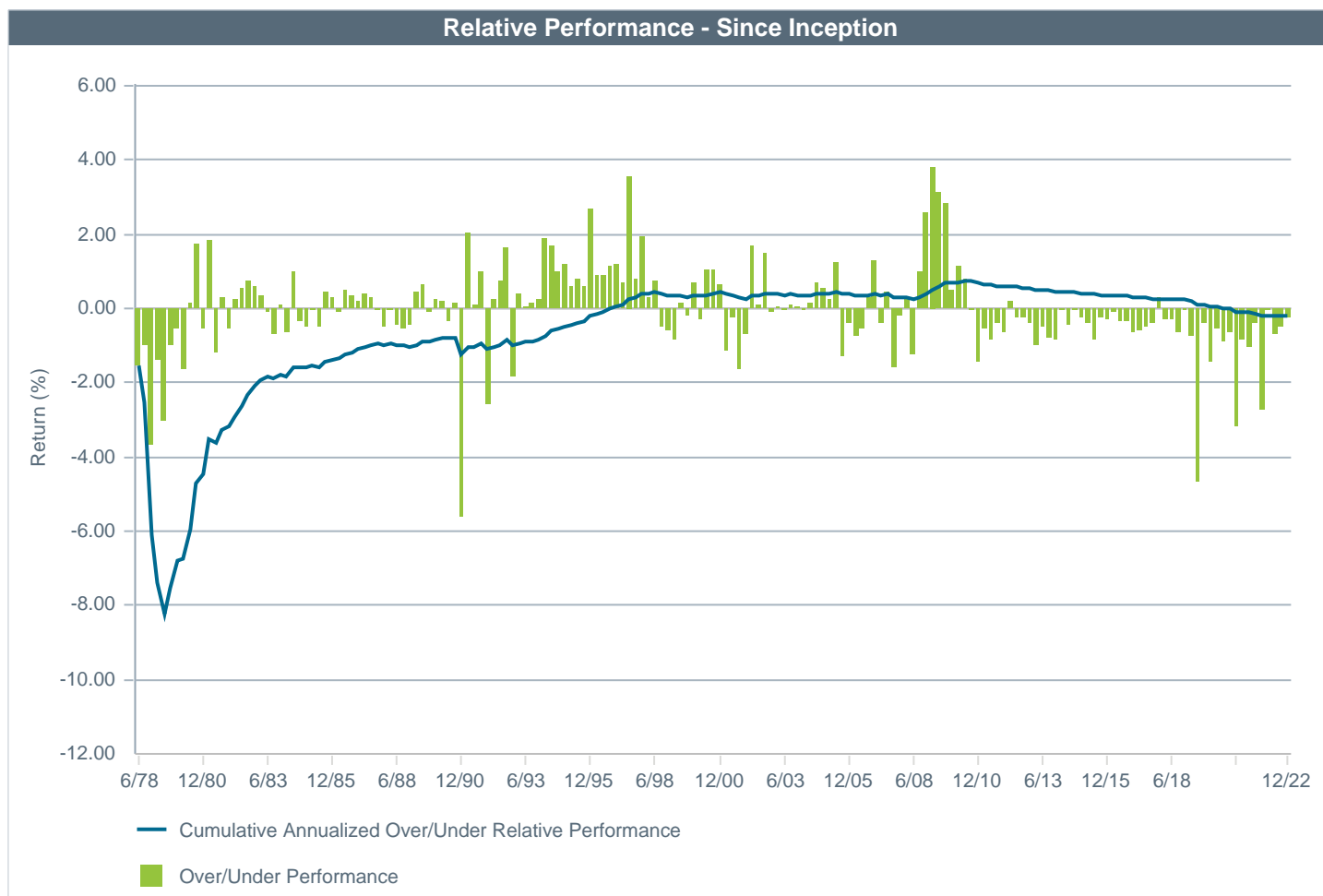
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists of lab-office properties and self-storage. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-5.21	5.91	5.72	4.35	5.03	6.99	16.24	-4.04	-2.10	6.99	6.30
Benchmark	-4.97	7.47	9.93	8.68	8.54	10.10	22.17	1.19	5.34	8.35	7.62
Difference	-0.24	-1.56	-4.21	-4.33	-3.51	-3.11	-5.93	-5.23	-7.44	-1.36	-1.32



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.92
S&P 500 Index (Cap Wtd)	-0.31
Russell 2000 Index	-0.37
MSCI EAFE Index (USD) (Net)	-0.43
MSCI Emg Mkts Index (USD) (Net)	-0.44
Bloomberg US Agg Bond Index	-0.41
Bloomberg US Trsy US TIPS Index	-0.34
Wilshire US REIT Index	-0.06
HFRI FOF Comp Index	-0.37
Bloomberg Cmtty Index (TR)	0.04
ICE BofAML 3 Mo US T-Bill Index	-0.57
Cons Price Index (Unadjusted)	0.34



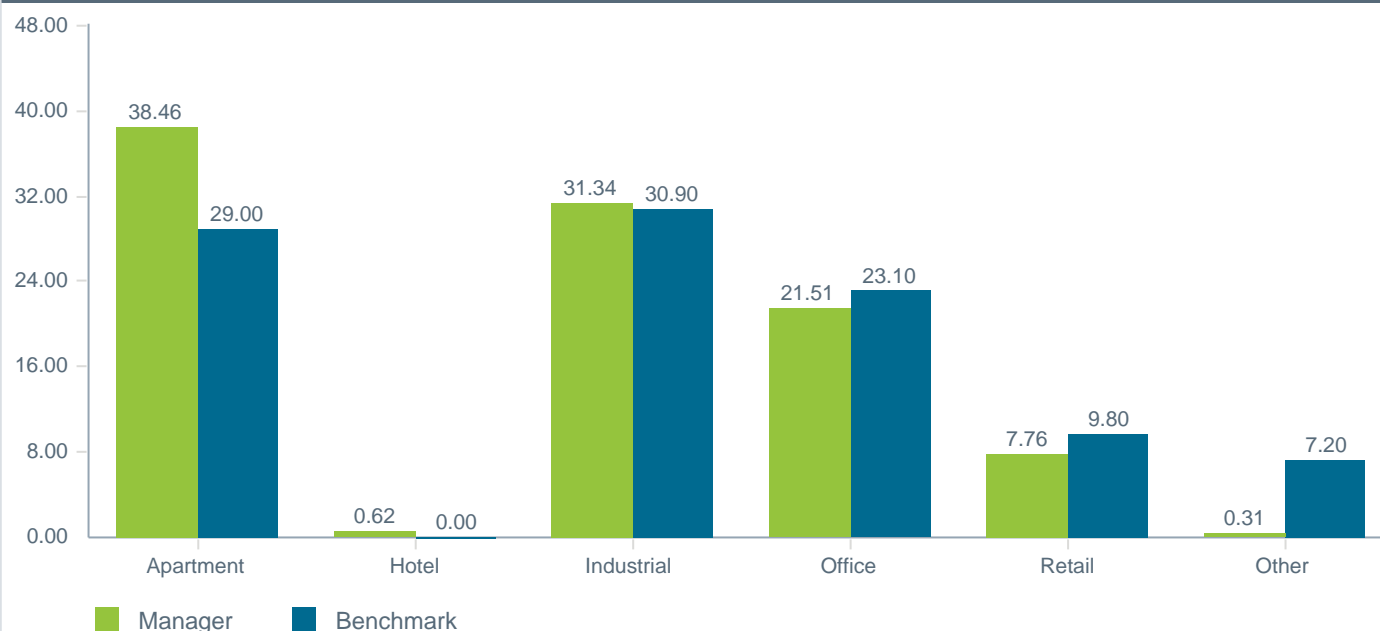
Investment Strategy

The Fund pursues a diversified core real estate strategy that seeks to produce attractive risk-adjusted returns by focusing on selective acquisitions, diversification, active portfolio management, and asset management. The Fund invests in well-leased, stabilized assets in major US metropolitan markets and receives the majority of its return from the income component. Diversification for the Fund is consistently pursued on many levels, including geographic region, property type, and economic sector. The Fund has historically maintained a leverage ratio significantly lower than the NCREIF ODCE Index and invests 5-15% of its gross assets in value-added type real estate investment opportunities.

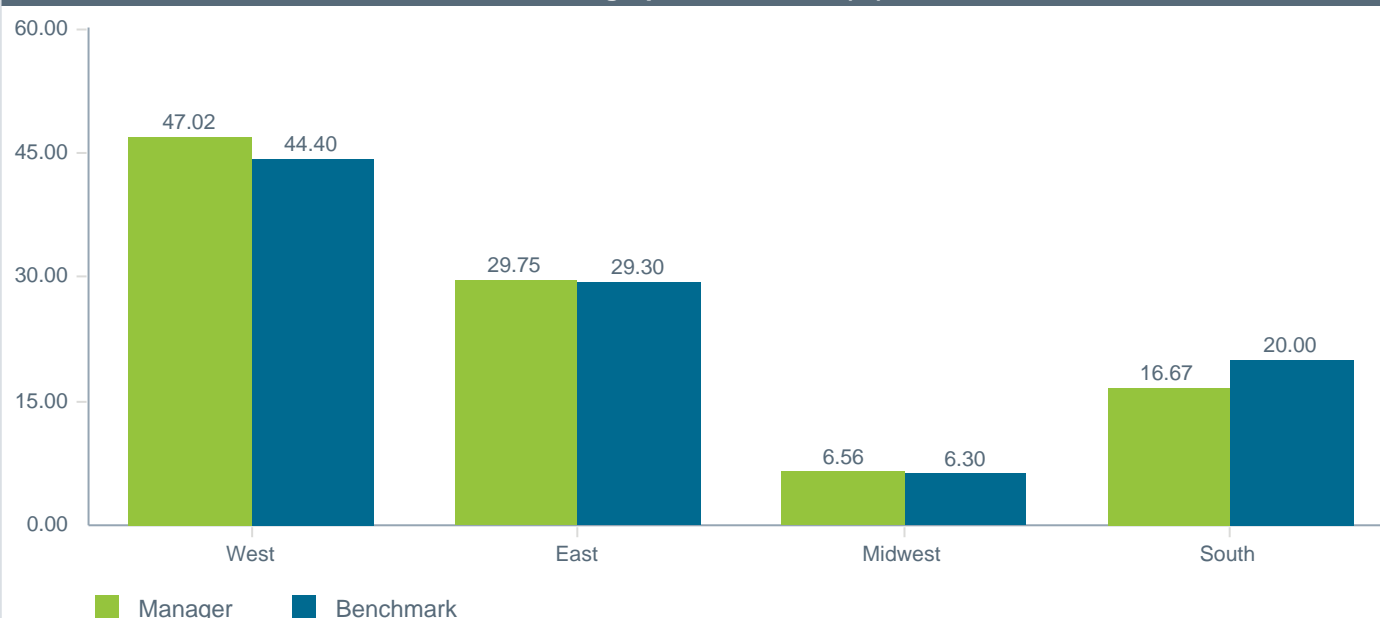
Investment Profile

Fund Inception	1978
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (mm) \$	17,839
Fund Leverage %	17.90
Portfolio Occupancy %	92.30
Cash Reserve %	1.30
Number of Investments	145
Number of Limited Partners	439

Property Type Allocation (%)

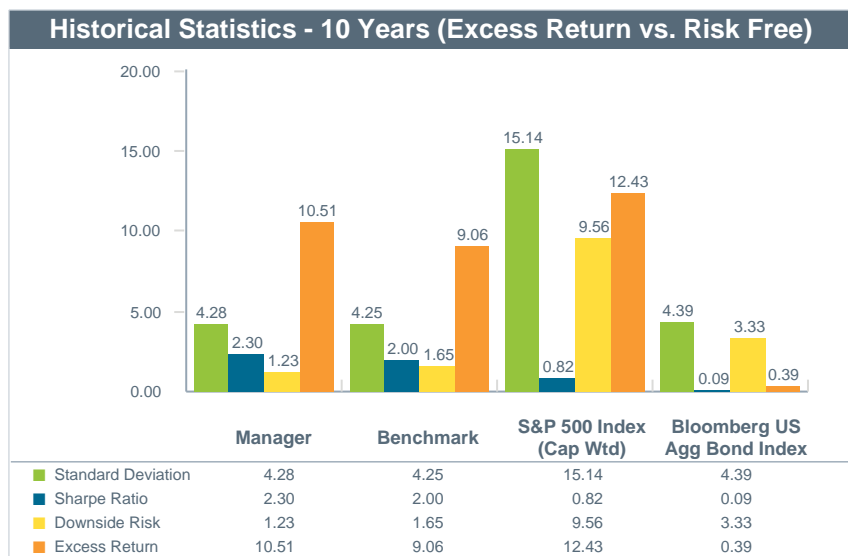


Geographic Allocation (%)



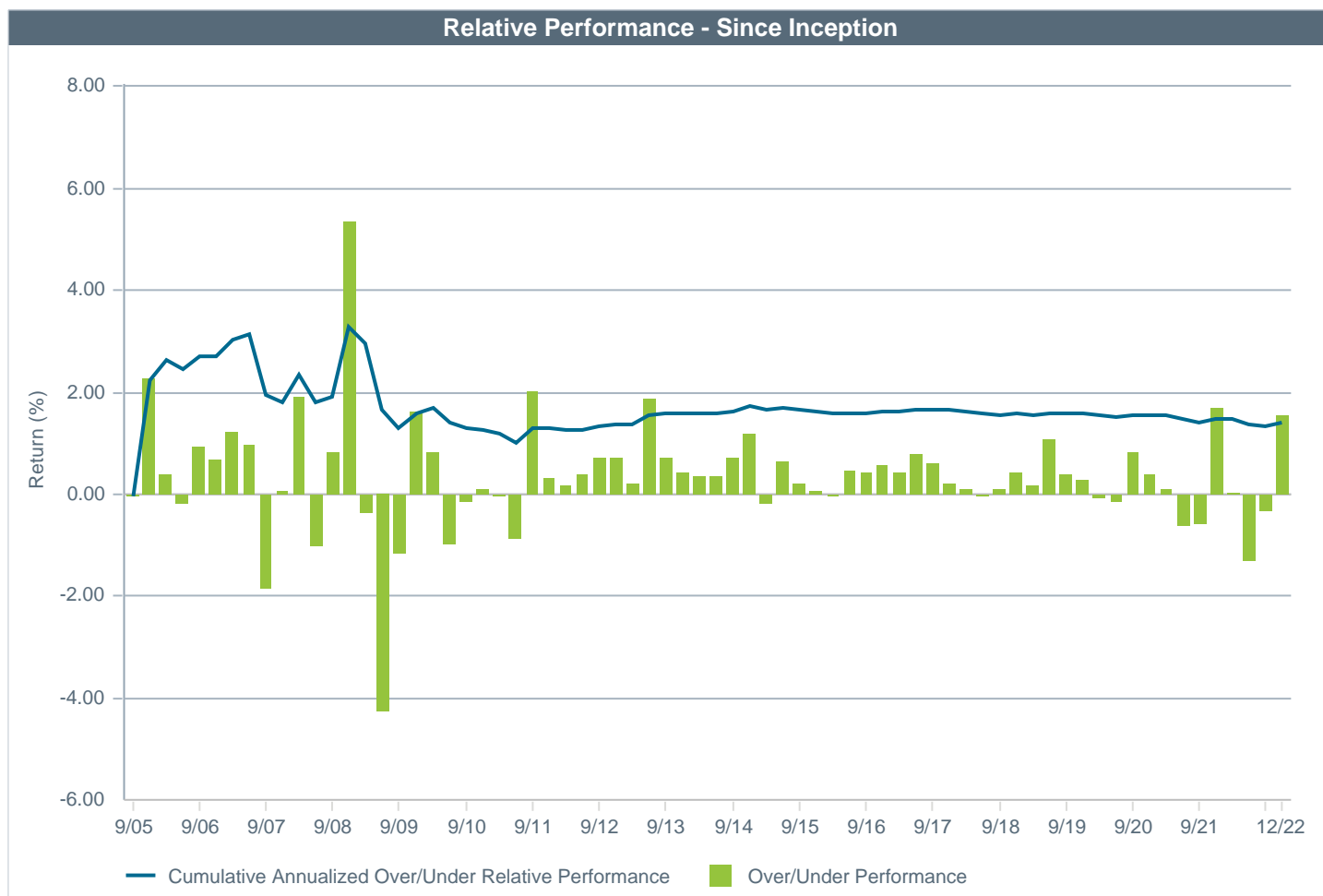
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists of self-storage. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

	Performance										
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-3.50	7.38	10.47	9.55	9.71	11.66	22.87	2.18	7.40	8.99	9.84
Benchmark	-4.97	7.47	9.93	8.68	8.54	10.10	22.17	1.19	5.34	8.35	7.62
Difference	1.47	-0.09	0.54	0.87	1.17	1.56	0.70	0.99	2.06	0.64	2.22



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.96
S&P 500 Index (Cap Wtd)	-0.12
Russell 2000 Index	-0.20
MSCI EAFE Index (USD) (Net)	-0.25
MSCI Emg Mkts Index (USD) (Net)	-0.32
Bloomberg US Agg Bond Index	-0.33
Bloomberg US Trsy US TIPS Index	-0.27
Wilshire US REIT Index	0.08
HFRI FOF Comp Index	-0.22
Bloomberg Cmnty Index (TR)	0.05
ICE BofA 3 Mo US T-Bill Index	-0.56
Cons Price Index (Unadjusted)	0.30



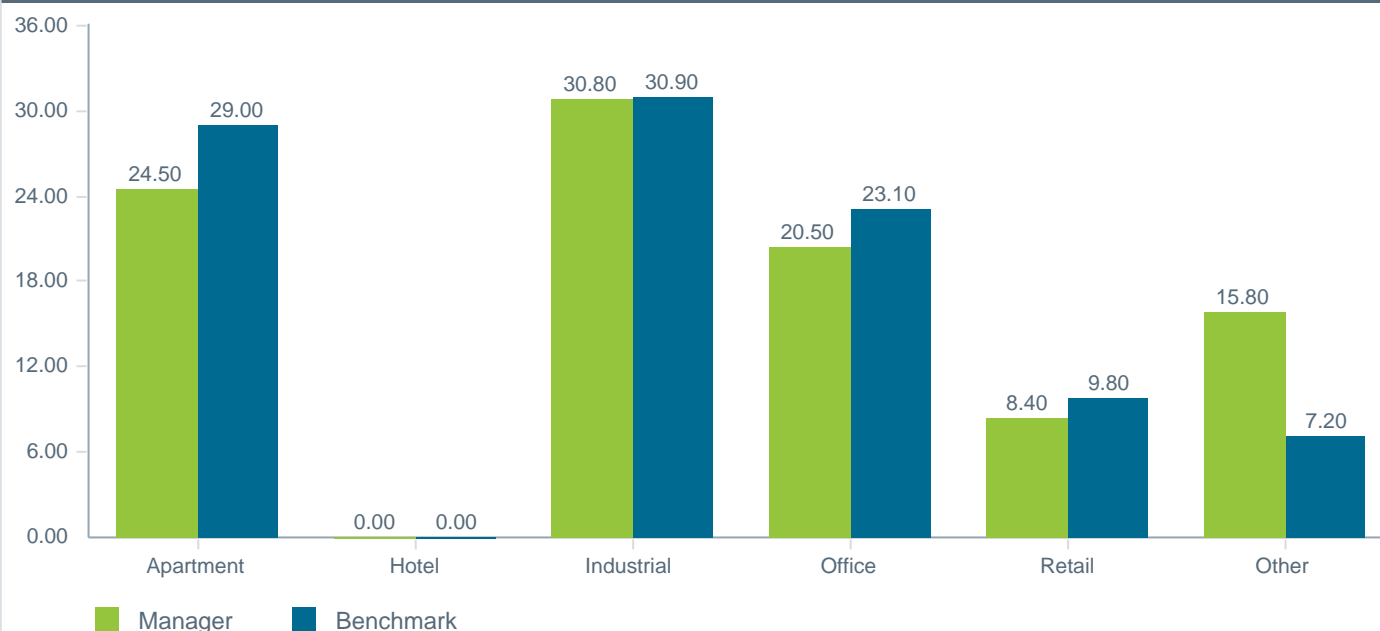
Investment Strategy

The Fund pursues a diversified core real estate strategy that invests in assets with stable, highly predictable cash flow returns. The Fund targets high quality office, Class A multifamily, warehouse distribution, and top-tier super regional malls in addition to storage facilities in targeted primary markets. The Fund favors investing in major metropolitan markets and secondary markets expected to achieve above-average economic performance and believes that those cities offer better liquidity, more diverse tenant bases, and stronger resilience to market cycles. It operates with leverage of 50% or less and may invest up to 15% of its gross assets in higher-risk, value-added real estate investment opportunities.

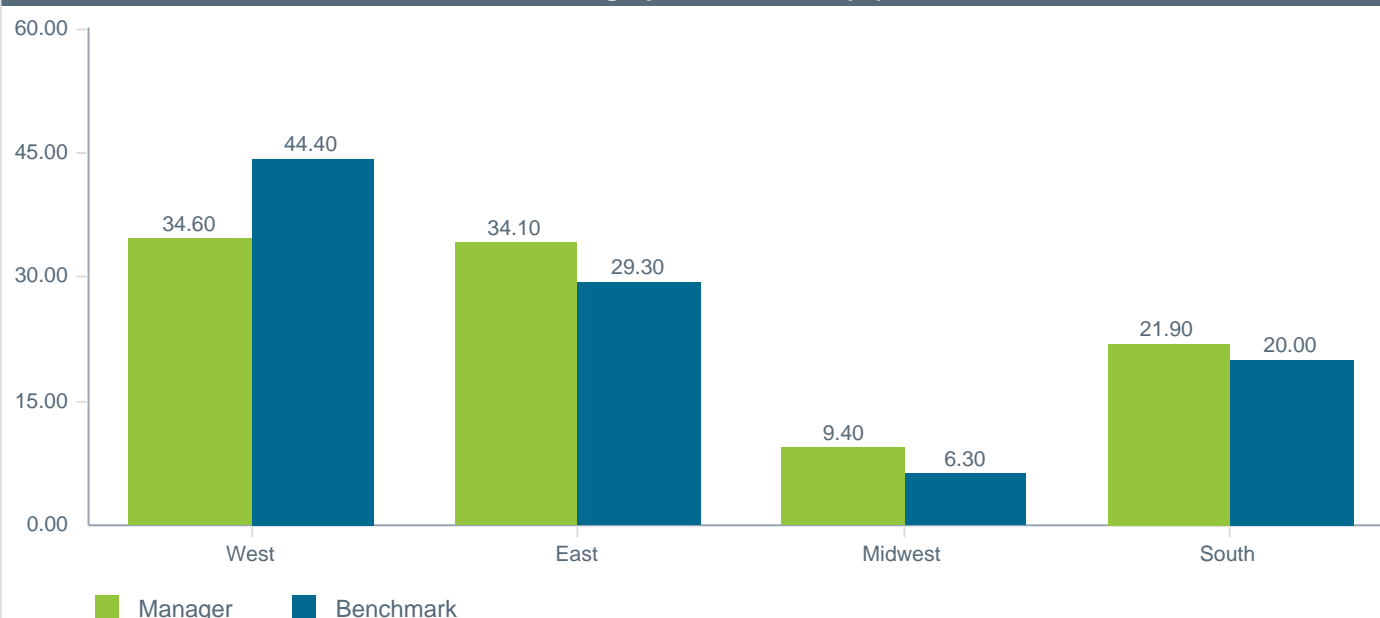
Investment Profile

Fund Inception	1973
Legal Structure	LLC
Fund Structure	Open-End
Gross Real Estate Assets (mm) \$	45,948
Fund Leverage %	18.20
Portfolio Occupancy %	94.50
Cash Reserve %	1.20
Number of Investments	547
Number of Limited Partners	449

Property Type Allocation (%)



Geographic Allocation (%)



Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists of self-storage, health care, student housing, land held for potential development, and hotel. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

Investment Strategy

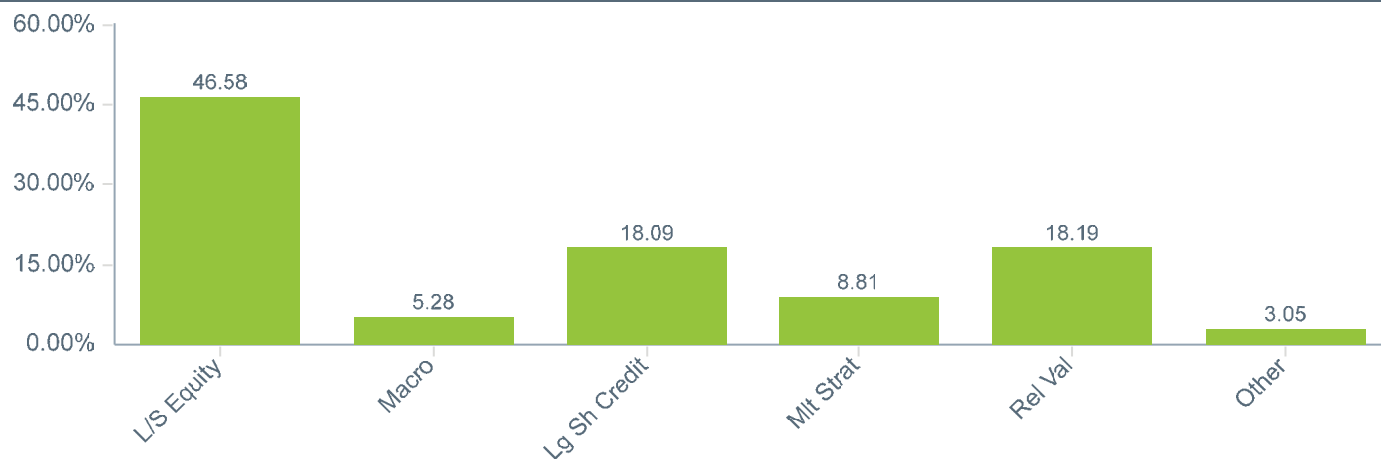
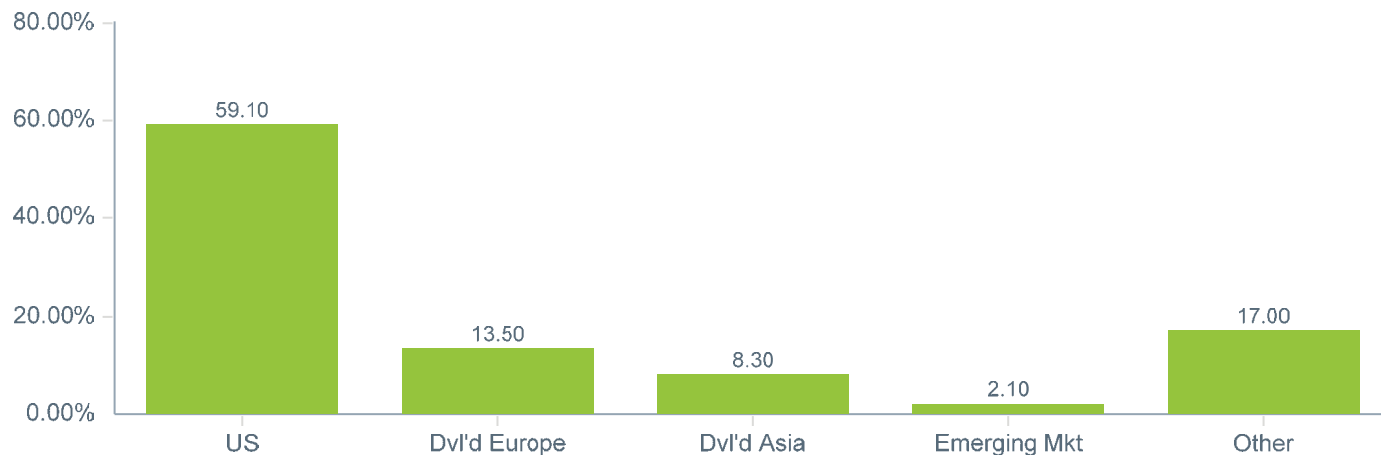
The Fund's investment objectives are to generate superior absolute and risk adjusted rates of return with low performance volatility and low correlation with the global equity and fixed-income markets over a full market cycle. The Fund is also designed to preserve capital in challenging market environments. It does this through investment in a diversified pool of hedge fund strategies.

Firm Statistics

Year Firm Established	1971
Firm AUM (\$M) (\$)	24,518
Percentage Employee Owned %	78.00

Fund Statistics

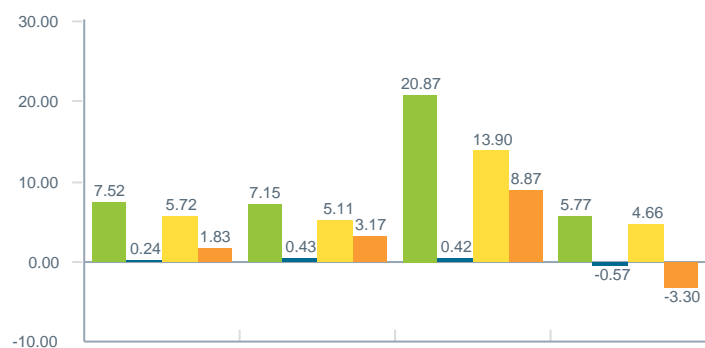
Fund Inception	2018
Fund Size(\$M) (\$)	447
Number of Underlying Managers	25
Maximum Weighting of an Underlying Manager %	9.51
Current Leverage (Assets/Equity)	3.10
Annual Manager Turnover %	40.00
Annual Management Fee %	0.60
Performance Fee %	5
Hurdle %	T-bills+2%
Initial Lock-Up Periods	N/A
Redemption Frequency	N/A
Notification Period	N/A

Strategy Allocation (%)**Geographic Allocation (%)**

Strategy allocation to other consists of cash, expenses, management fees, and net receivable. Geographic allocation to other consists of cash or funds where geographic data are unavailable. Fund statistics shown are provided by the investment manager and are as of the most recently available quarter end.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	1.73	-7.31	2.29	N/A	N/A	N/A	5.25	9.70	5.67	N/A	N/A
Benchmark	1.73	-5.31	3.69	3.01	3.31	3.50	6.17	10.88	8.39	-4.02	7.77
Difference	0.00	-2.00	-1.40	N/A	N/A	N/A	-0.92	-1.18	-2.72	N/A	N/A

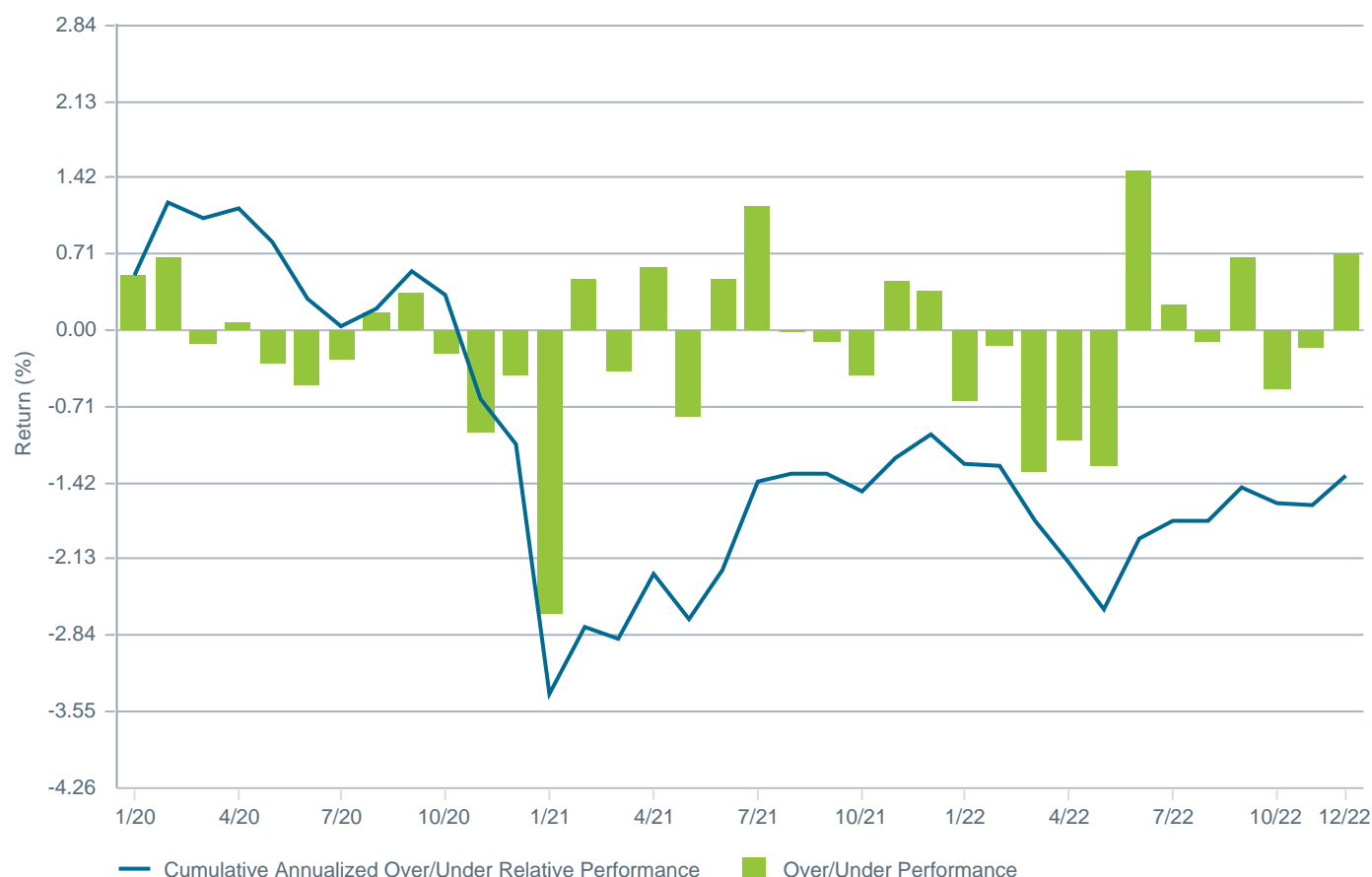
Historical Statistics - 3 Years (Excess Return vs. Risk Free)



Actual Correlation - 3 Years

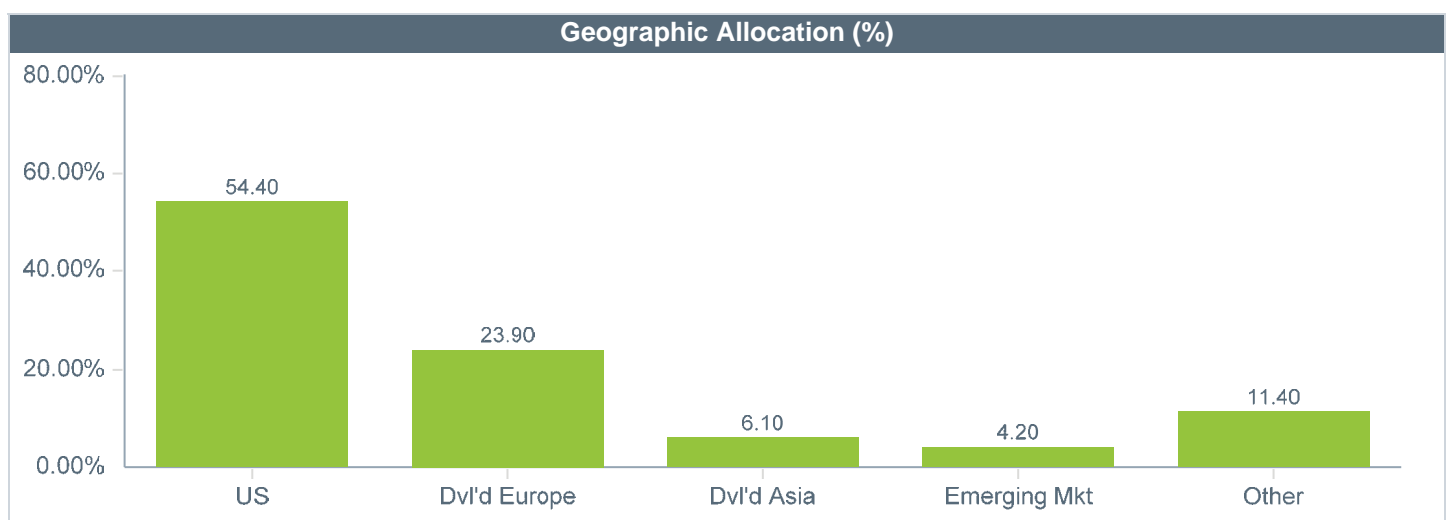
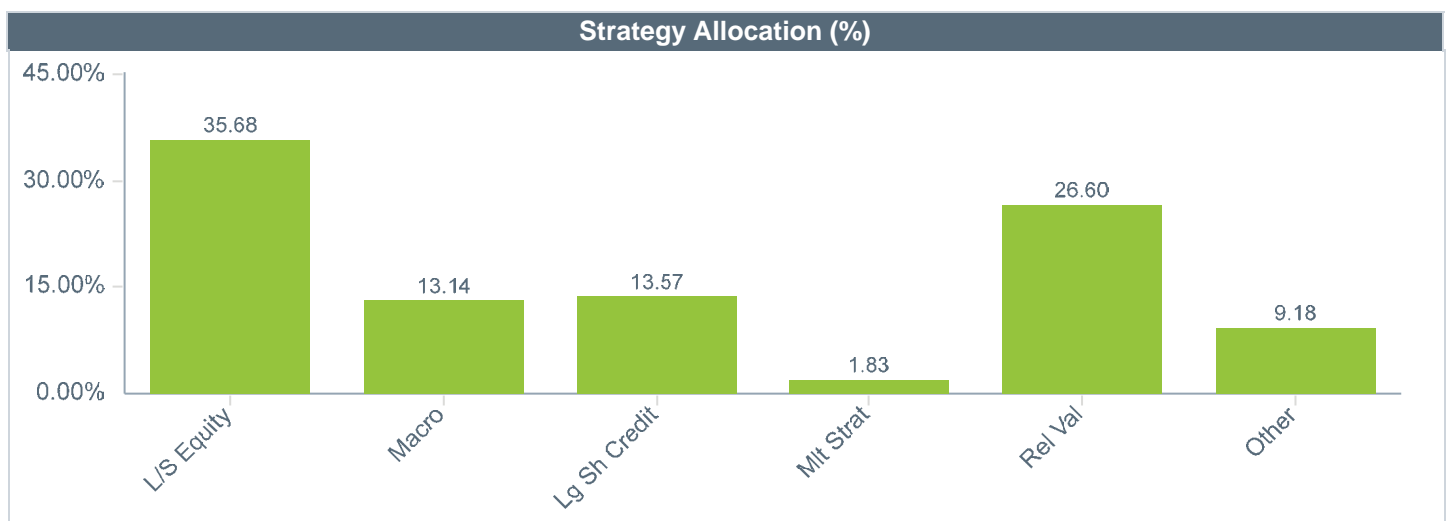
	Actual Correlation
HFRI FOF Comp Index	0.97
S&P 500 Index (Cap Wtd)	0.90
Russell 2000 Index	0.89
MSCI EAFE Index (USD) (Net)	0.86
MSCI Emg Mkts Index (USD) (Net)	0.88
Bloomberg US Agg Bond Index	0.42
Bloomberg US Trsy US TIPS Index	0.57
NCREIF ODCE Index (AWA) (Gross)	-0.33
Wilshire US REIT Index	0.76
Bloomberg Cmnty Index (TR)	0.42
ICE BofAML 3 Mo US T-Bill Index	-0.31
Cons Price Index (Unadjusted)	-0.47

Relative Performance - 3 Years



Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

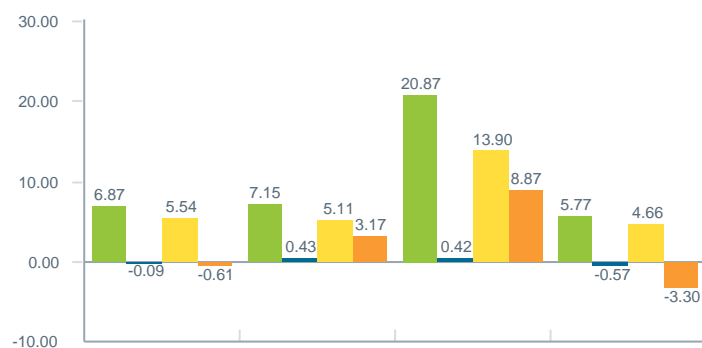
Investment Strategy	Firm Statistics
Silvery Lupine Fund Class C is a direct hedge funds portfolio managed by the Wyoming State Treasury's Office.	Year Firm Established
	1971
	Firm AUM (\$M) (\$)
	24,518
	Percentage Employee Owned %
	78.00
Fund Statistics	
Fund Inception	2018
Fund Size(\$M) (\$)	664
Number of Underlying Managers	18
Maximum Weighting of an Underlying Manager %	N/A
Current Leverage (Assets/Equity)	4.70
Annual Manager Turnover %	0.00
Annual Management Fee %	0
Performance Fee %	N/A
Hurdle %	N/A
Initial Lock-Up Periods	N/A
Redemption Frequency	N/A
Notification Period	N/A



Strategy allocation to other consists of cash, expenses, and net receivable. Geographic allocation to other consists of cash or funds where geographic data are unavailable. Fund statistics shown are provided by GCM and are as of the most recently available quarter end.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	0.43	-10.41	-0.13	N/A	N/A	N/A	5.05	5.83	6.08	N/A	N/A
Benchmark	1.73	-5.31	3.69	3.01	3.31	3.50	6.17	10.88	8.39	-4.02	7.77
Difference	-1.30	-5.10	-3.82	N/A	N/A	N/A	-1.12	-5.05	-2.31	N/A	N/A

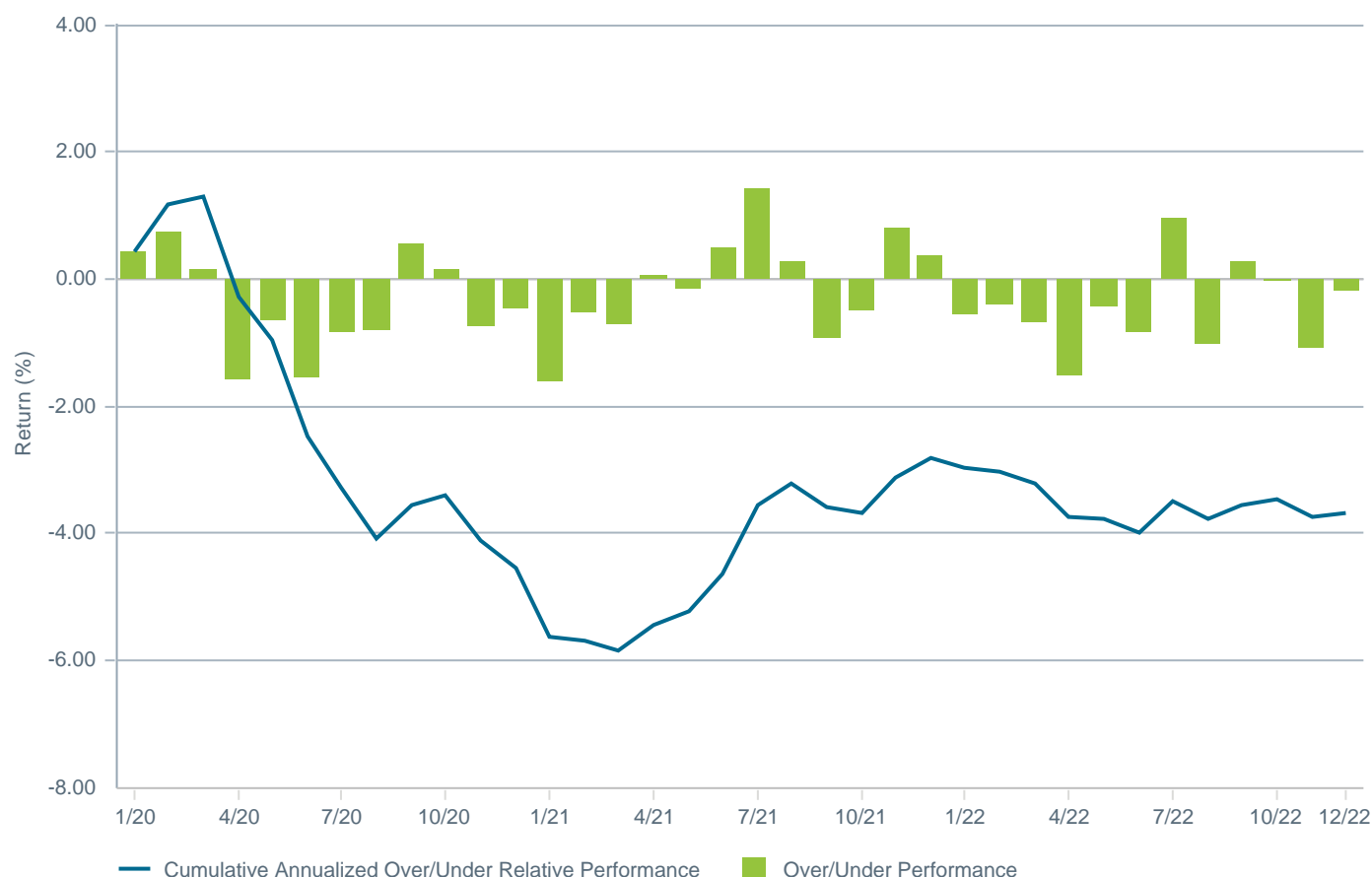
Historical Statistics - 3 Years (Excess Return vs. Risk Free)



Actual Correlation - 3 Years

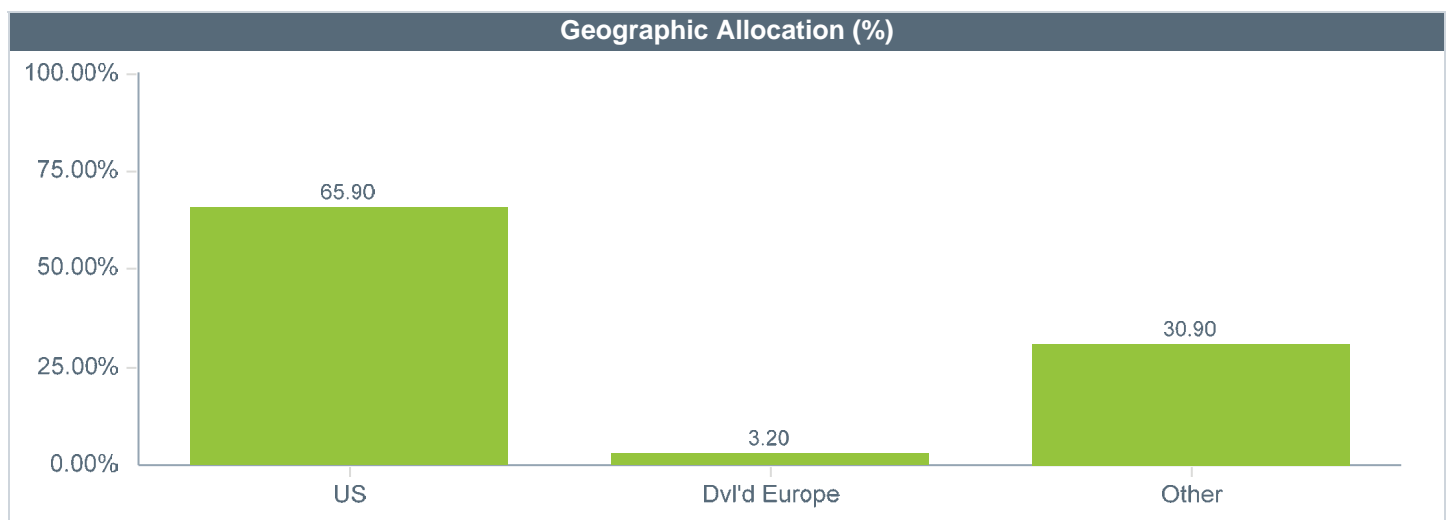
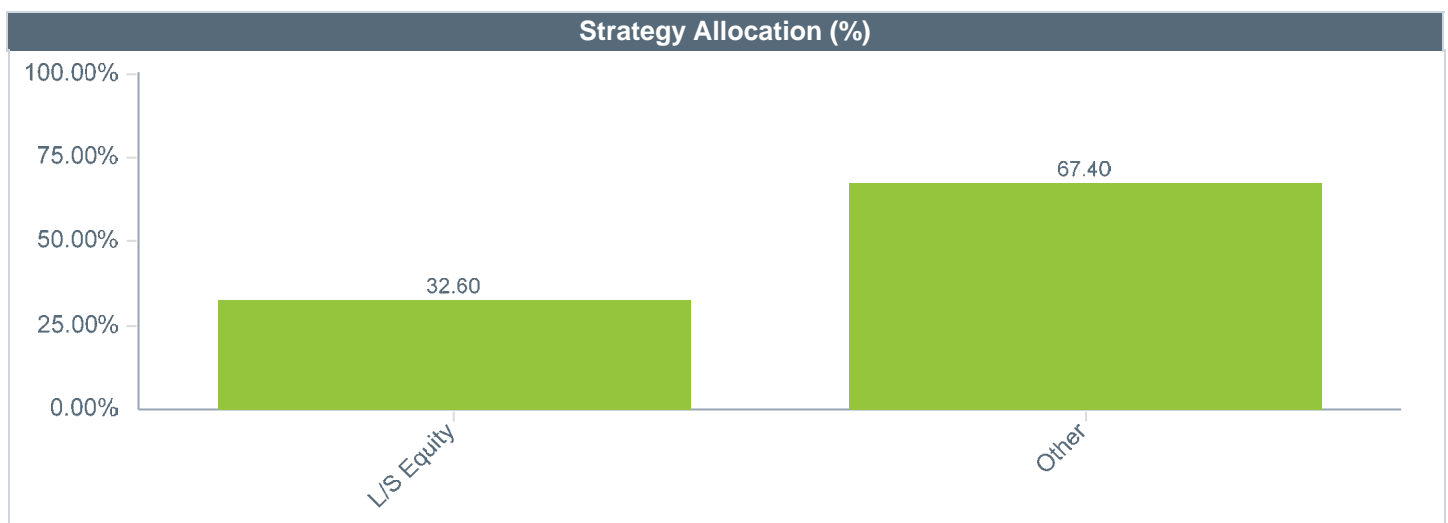
	Actual Correlation
HFRI FOF Comp Index	0.94
S&P 500 Index (Cap Wtd)	0.89
Russell 2000 Index	0.88
MSCI EAFE Index (USD) (Net)	0.85
MSCI Emg Mkts Index (USD) (Net)	0.85
Bloomberg US Agg Bond Index	0.40
Bloomberg US Trsy US TIPS Index	0.58
NCREIF ODCE Index (AWA) (Gross)	-0.22
Wilshire US REIT Index	0.81
Bloomberg Cmnty Index (TR)	0.47
ICE BofAML 3 Mo US T-Bill Index	-0.34
Cons Price Index (Unadjusted)	-0.43

Relative Performance - 3 Years



Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

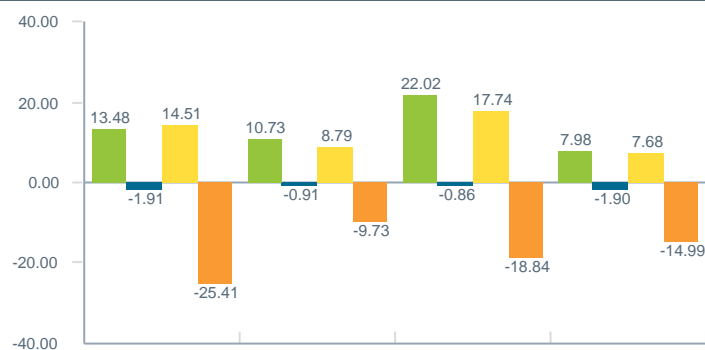
Investment Strategy		Firm Statistics	
Grosvenor Silvery Lupine Fund Class D is the opportunistic investment portfolio of the State Treasurer's Office.		Year Firm Established	1971
		Firm AUM (\$M) (\$)	24,518
		Percentage Employee Owned %	78.00
		Fund Statistics	
		Fund Inception	2020
		Fund Size(\$M) (\$)	95
		Number of Underlying Managers	N/A
		Maximum Weighting of an Underlying Manager %	N/A
		Current Leverage (Assets/Equity)	0.80
		Annual Manager Turnover %	N/A
		Annual Management Fee %	0.30
		Performance Fee %	10
		Hurdle %	custom
		Initial Lock-Up Periods	N/A
		Redemption Frequency	N/A
		Notification Period	N/A



Strategy allocation to other consists of cash, expenses, fees, SPV, and net receivable. Geographic allocation to other consists of cash or funds where geographic data are unavailable. Fund statistics shown are provided by GCM and are as of the most recently available quarter end.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	0.92	-22.26	N/A	N/A	N/A	N/A	30.17	N/A	N/A	N/A	N/A
Benchmark	5.02	-8.51	N/A	N/A	N/A	N/A	9.35	N/A	N/A	N/A	N/A
Difference	-4.10	-13.75	N/A	N/A	N/A	N/A	20.82	N/A	N/A	N/A	N/A

Historical Statistics - 1 Year (Excess Return vs. Risk Free)



Actual Correlation - 1 Year

	Actual Correlation
Grosvenor Class D Custom Benchmark	0.07
S&P 500 Index (Cap Wtd)	0.06
Russell 2000 Index	0.18
MSCI EAFE Index (USD) (Net)	0.17
MSCI Emg Mkts Index (USD) (Net)	0.05
Bloomberg US Agg Bond Index	0.14
Bloomberg US Trsy US TIPS Index	0.11
Wilshire US REIT Index	-0.15
Bloomberg Cmtty Index (TR)	-0.24
ICE BofAML 3 Mo US T-Bill Index	0.48
Cons Price Index (Unadjusted)	-0.67

Relative Performance - 1 Year



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity.

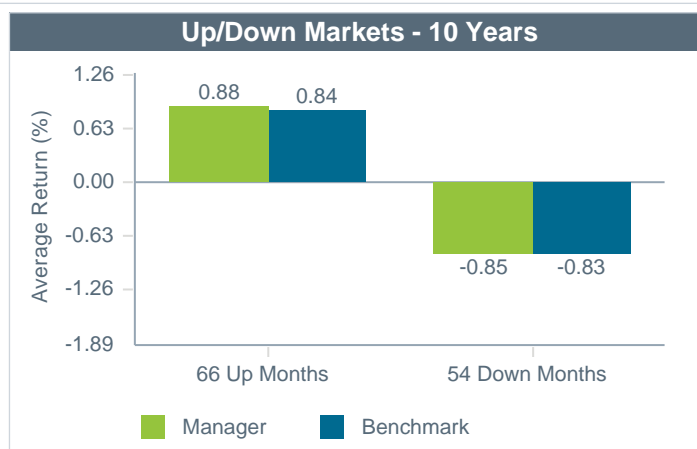
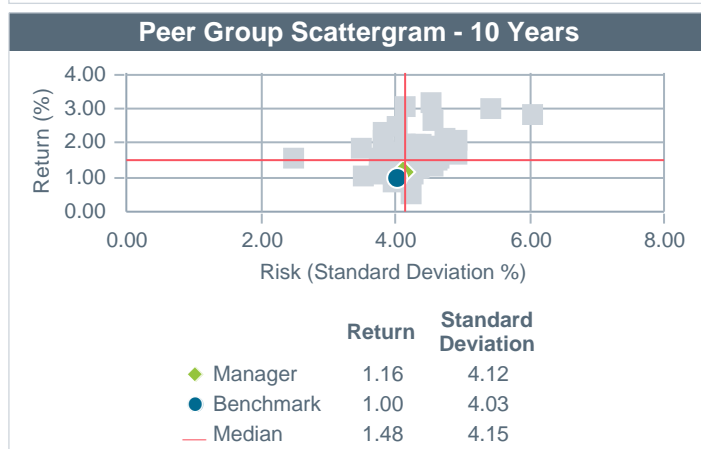
Manager: PIMCO Core

As of December 31, 2022

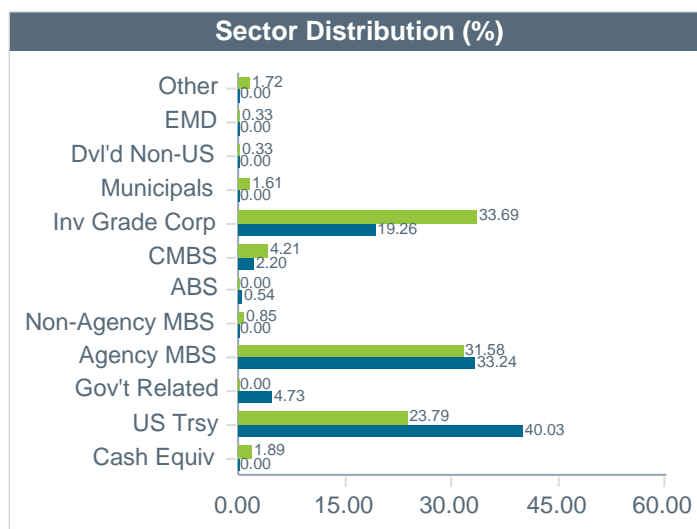
Benchmark: PIMCO Custom Index

Peer Group: IM U.S. Broad Market Core Fixed Income (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	1.77	-13.56	-2.52	0.07	1.13	1.16	-1.62	8.93	7.71	0.58	4.27
Benchmark	1.87	-13.03	-2.56	-0.08	0.81	1.00	-1.63	8.14	7.30	0.32	3.54
Difference	-0.10	-0.53	0.04	0.15	0.32	0.16	0.01	0.79	0.41	0.26	0.73
Peer Group Median	1.80	-12.96	-2.20	0.44	1.36	1.48	-1.23	8.51	9.18	0.06	4.01
Rank	53	81	73	85	75	81	80	34	95	15	33
Population	140	140	140	137	135	130	147	155	157	164	169



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	6.11	4.50
Spread Duration	4.27	4.47
Avg. Maturity	8.12	5.44
Avg. Quality	Aa2	Aa1/Aa2
Yield To Maturity (%)	5.28	4.63
Coupon Rate (%)	3.30	2.49
Current Yield (%)	3.69	N/A
Holdings Count	257	9,868

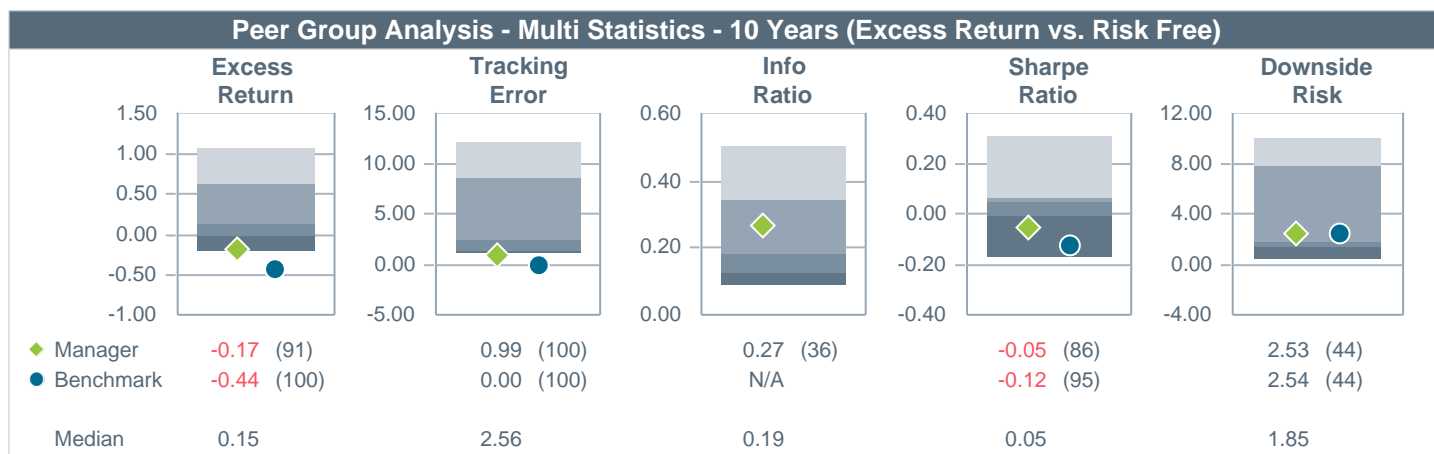
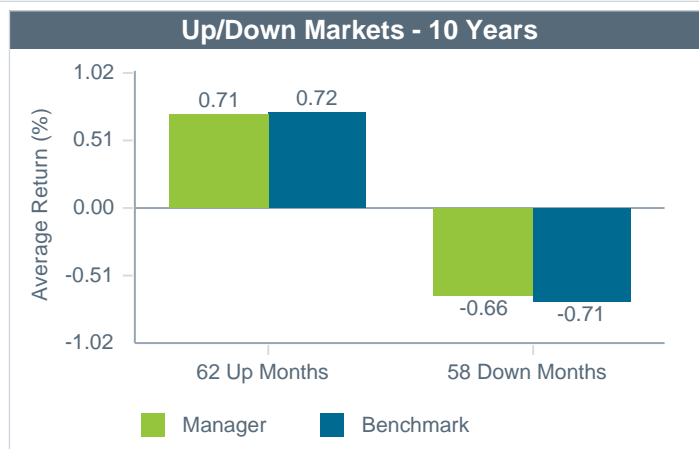
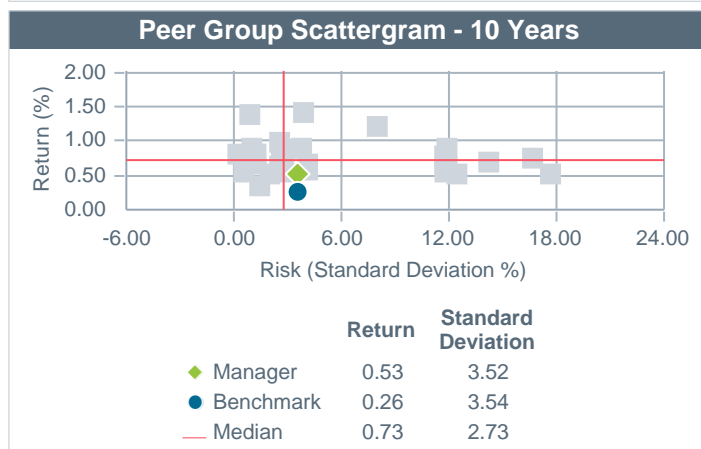


Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Sector allocation to "Other" consists of Euro/Yankee securities.

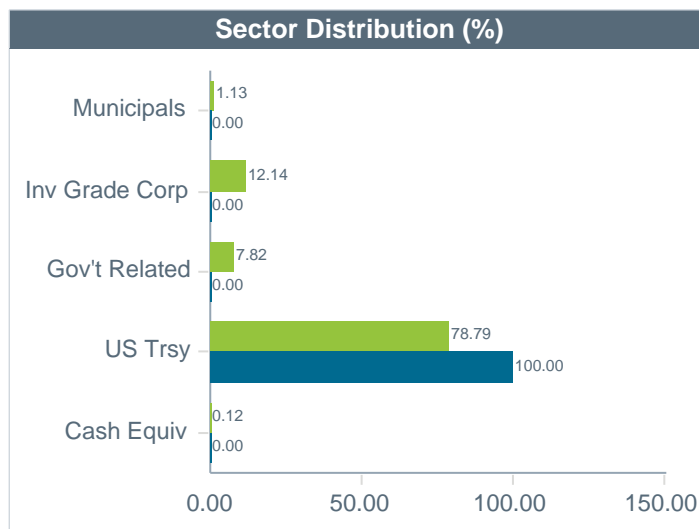
Manager: Internal Intermediate Gov't Fixed Income Portfolio
As of December 31, 2022
Benchmark: Internal Int Govt Fixed Income Portfolio Index

Peer Group: IM U.S. Government Bonds (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	0.67	-11.93	-2.49	-0.26	0.21	0.53	-2.40	7.85	4.53	1.85	1.84
Benchmark	0.72	-12.46	-2.62	-0.39	0.03	0.26	-2.32	8.00	4.70	1.43	1.14
Difference	-0.05	0.53	0.13	0.13	0.18	0.27	-0.08	-0.15	-0.17	0.42	0.70
Peer Group Median	0.70	-8.59	-1.59	0.28	0.67	0.73	-1.83	6.27	5.35	1.32	1.44
Rank	59	57	58	61	64	93	58	44	69	11	48
Population	39	39	39	39	37	33	43	48	50	56	55



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	N/A	6.09
Spread Duration	N/A	6.09
Avg. Maturity	N/A	7.66
Avg. Quality	N/A	Aaa
Yield To Maturity (%)	N/A	4.18
Coupon Rate (%)	N/A	2.00
Current Yield (%)	N/A	N/A
Holdings Count	N/A	276



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. The Internal Intermediate Govt Fixed Income Portfolio Index consists of the Bloomberg US Treasury Index as of 12/1/2019. November 2019 performance consists of the Internal Intermediate Govt Fixed Income Portfolio. Prior to November 2019, the index consists of Bloomberg US Gov't Int Term Bond Index. Prior to December 2009, the index consisted of the Bloomberg US Gov't Crdt Bond Index.



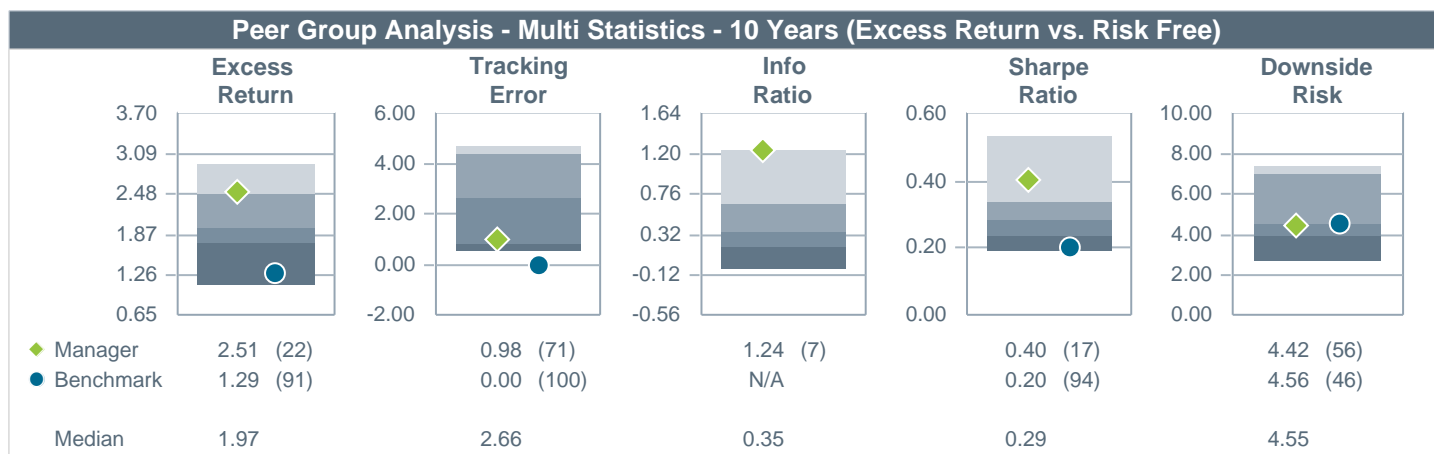
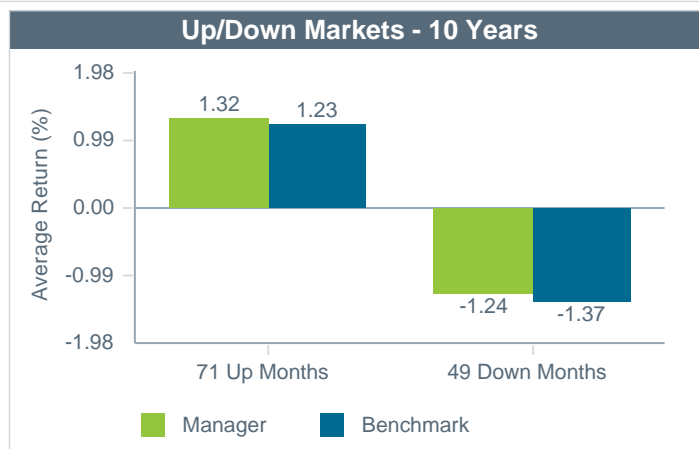
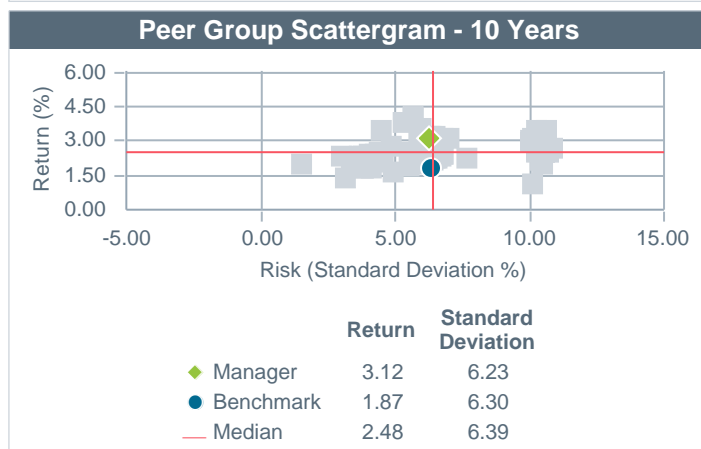
Manager: Payden & Rygel

As of December 31, 2022

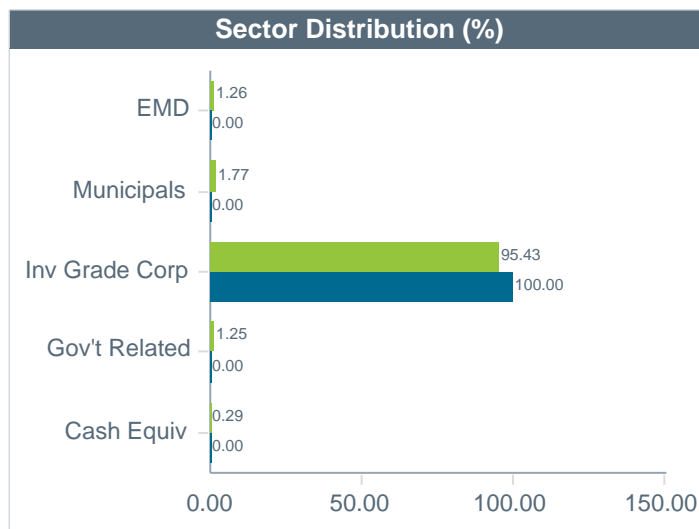
Benchmark: Payden & Rygel Custom Index

Peer Group: IM U.S. Corporate Bonds (SA+CF)

	Performance										
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	3.31	-15.84	-2.73	0.64	2.79	3.12	-0.94	10.37	14.96	-2.41	9.23
Benchmark	3.63	-15.76	-3.16	0.28	1.95	1.87	-1.04	8.94	14.54	-2.51	6.42
Difference	-0.32	-0.08	0.43	0.36	0.84	1.25	0.10	1.43	0.42	0.10	2.81
Peer Group Median	3.49	-15.93	-2.34	0.85	2.61	2.48	-0.53	11.27	15.06	-2.35	7.22
Rank	63	49	64	63	45	14	69	66	52	52	31
Population	120	120	118	114	107	99	128	136	138	141	137



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	6.89	7.10
Spread Duration	7.09	7.22
Avg. Maturity	10.40	10.94
Avg. Quality	A3	A3/Baa1
Yield To Maturity (%)	5.48	5.42
Coupon Rate (%)	3.96	3.72
Current Yield (%)	4.23	N/A
Holdings Count	258	7,344



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

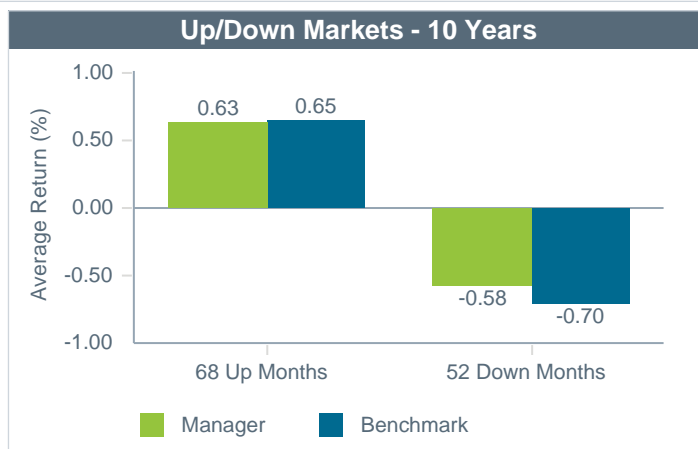
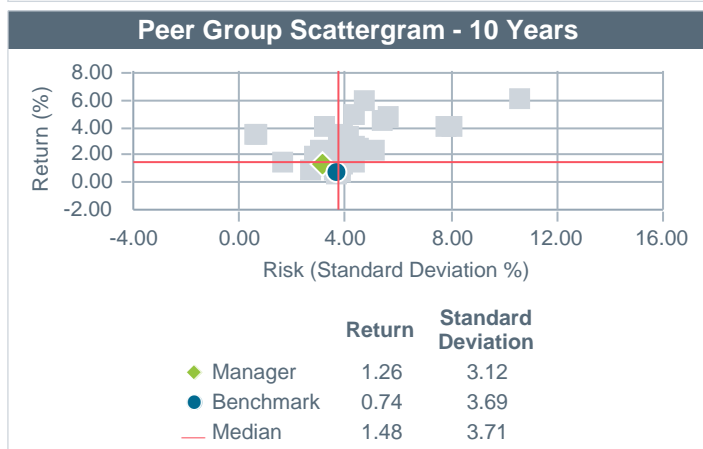
Manager: JPM MBS

As of December 31, 2022

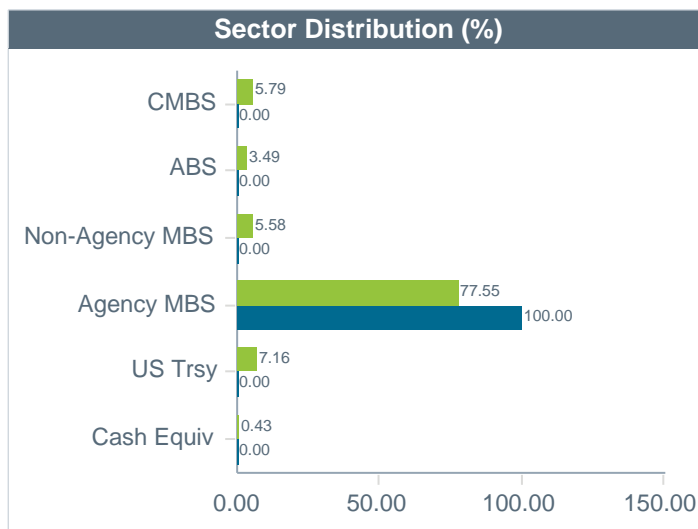
Benchmark: Bloomberg US MBS Index (Unhgd)

Peer Group: IM U.S. Mortgage Backed Bonds (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	1.80	-9.37	-1.62	0.48	1.03	1.26	-0.62	5.73	6.48	1.00	2.64
Benchmark	2.14	-11.81	-3.22	-0.53	0.20	0.74	-1.04	3.87	6.35	0.99	2.47
Difference	-0.34	2.44	1.60	1.01	0.83	0.52	0.42	1.86	0.13	0.01	0.17
Peer Group Median	1.32	-11.11	-2.49	0.08	1.03	1.46	-0.25	4.06	6.55	1.65	3.78
Rank	34	41	42	45	50	61	59	11	56	74	72
Population	51	51	51	50	46	44	54	57	57	58	61

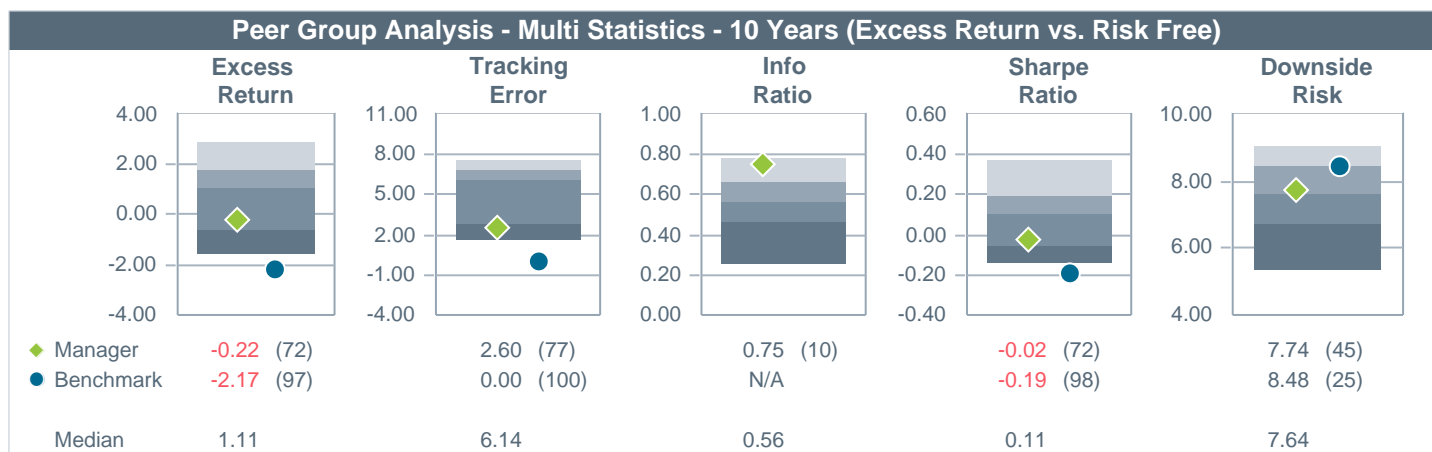
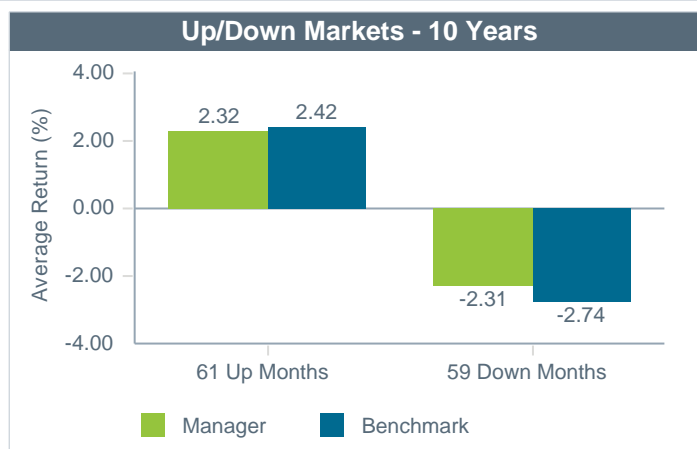
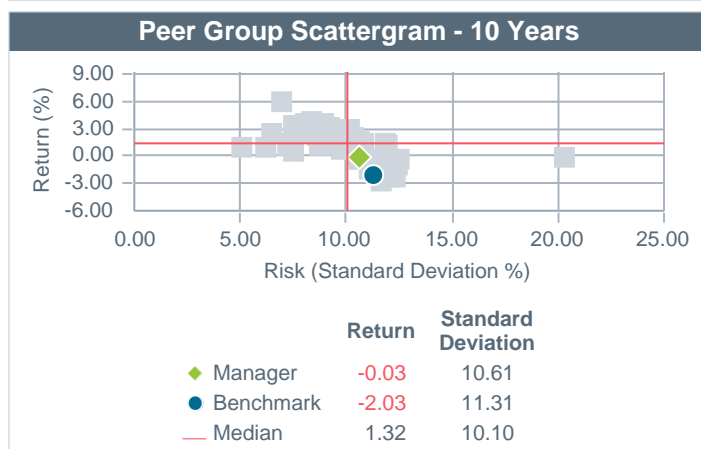


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.41	5.81
Spread Duration	5.08	5.60
Avg. Maturity	7.00	7.76
Avg. Quality	Aa2	Aaa
Yield To Maturity (%)	5.33	4.71
Coupon Rate (%)	3.16	2.76
Current Yield (%)	4.24	N/A
Holdings Count	585	908

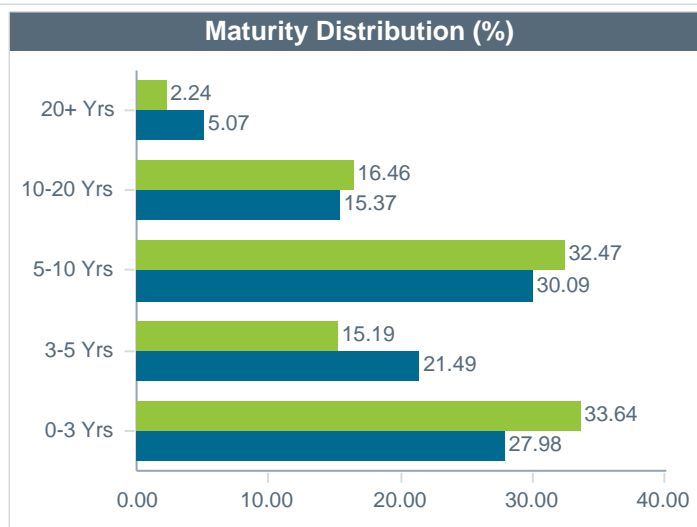


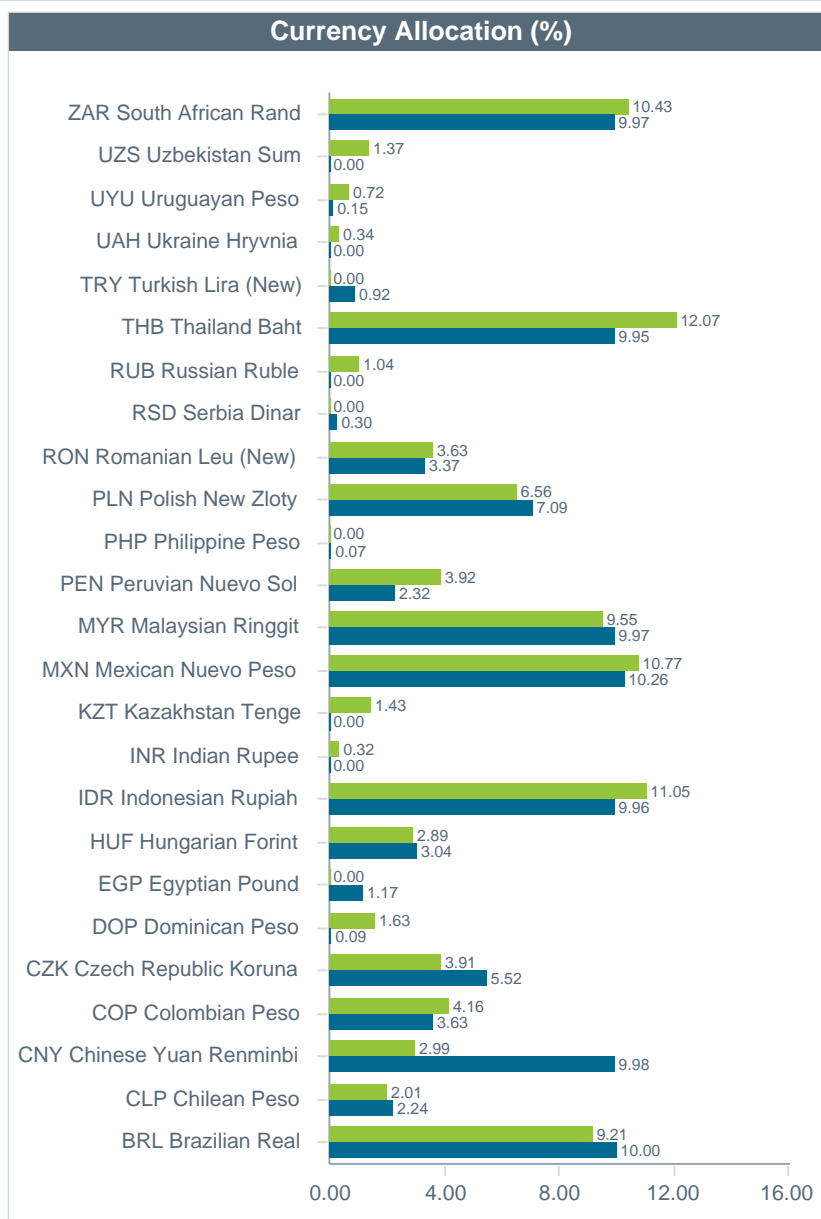
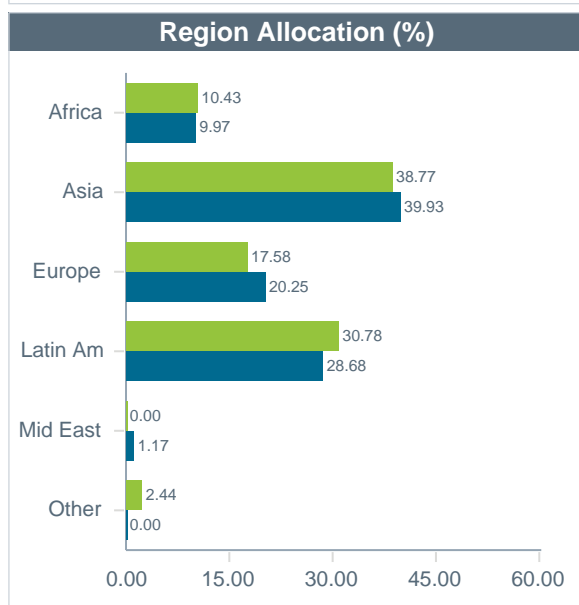
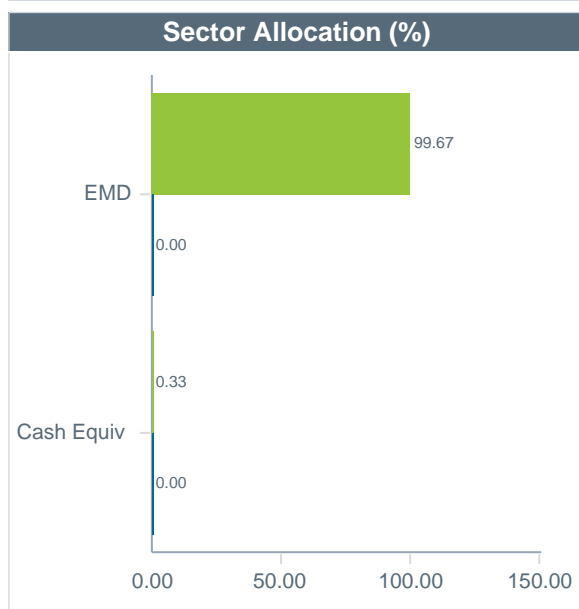
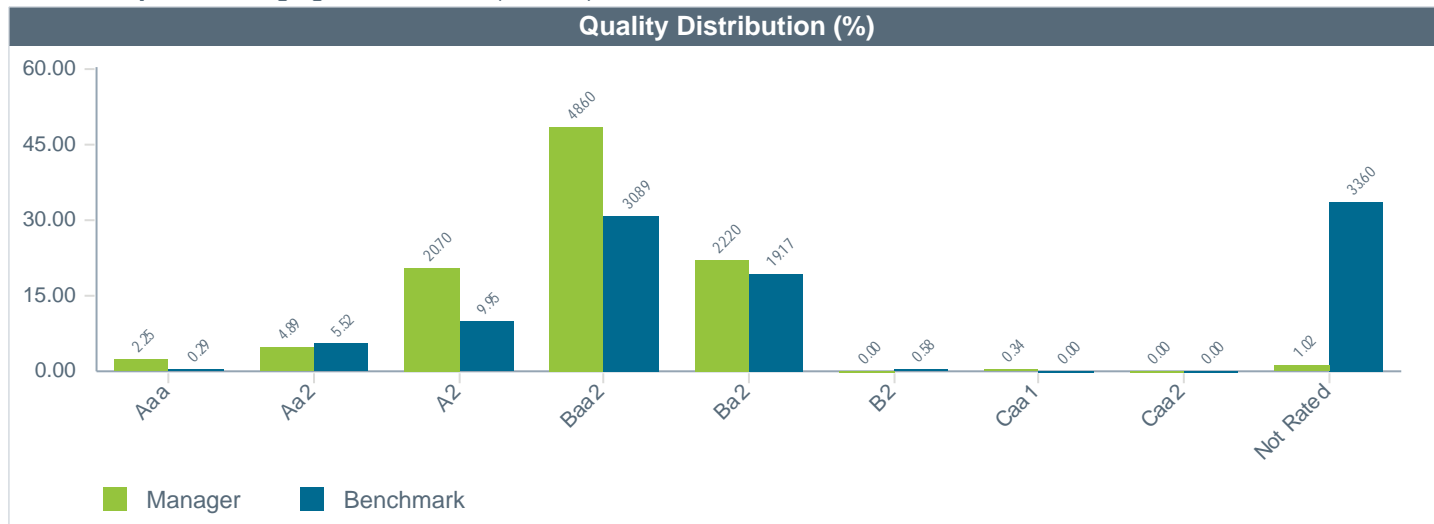
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	7.78	-7.61	-4.22	-1.82	2.40	-0.03	-7.45	2.77	12.61	-7.84	15.68
Benchmark	8.45	-11.69	-6.11	-2.51	1.58	-2.03	-8.75	2.69	13.47	-6.21	15.21
Difference	-0.67	4.08	1.89	0.69	0.82	2.00	1.30	0.08	-0.86	-1.63	0.47
Peer Group Median	8.44	-12.28	-3.54	-0.65	2.83	1.32	-2.12	6.72	14.30	-5.23	12.44
Rank	64	15	66	85	74	71	84	94	78	86	21
Population	130	130	129	124	118	90	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	4.69	4.95
Spread Duration	N/A	0.03
Avg. Maturity	6.49	7.07
Avg. Quality	Baa1	Ba3
Yield To Maturity (%)	7.45	7.43
Coupon Rate (%)	6.07	5.33
Current Yield (%)	5.84	5.49
Holdings Count	87	309





Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Region allocation to "Other" consists of cash.

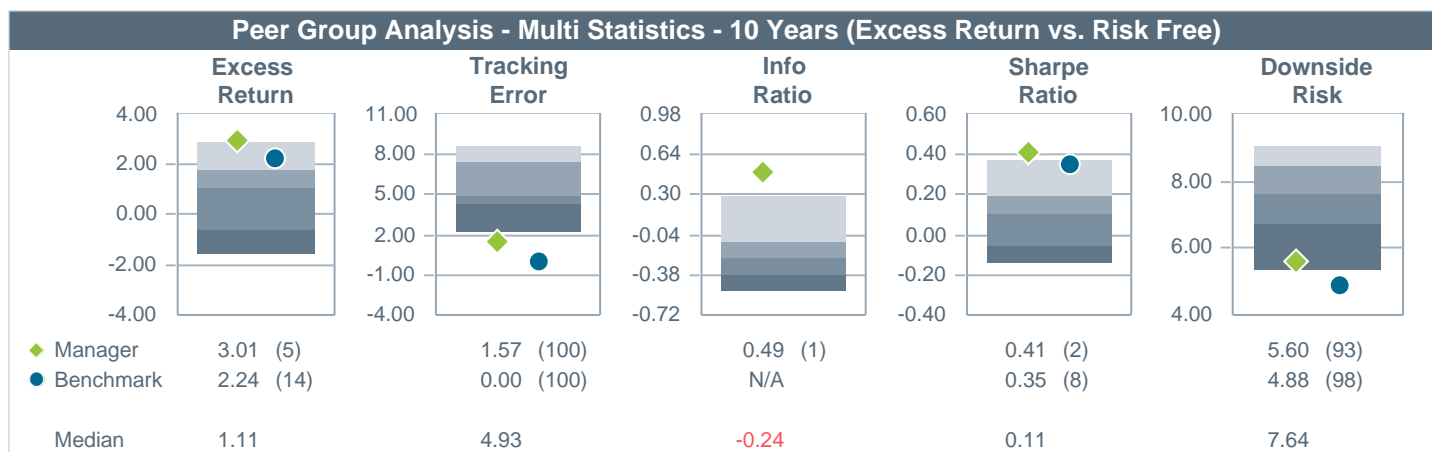
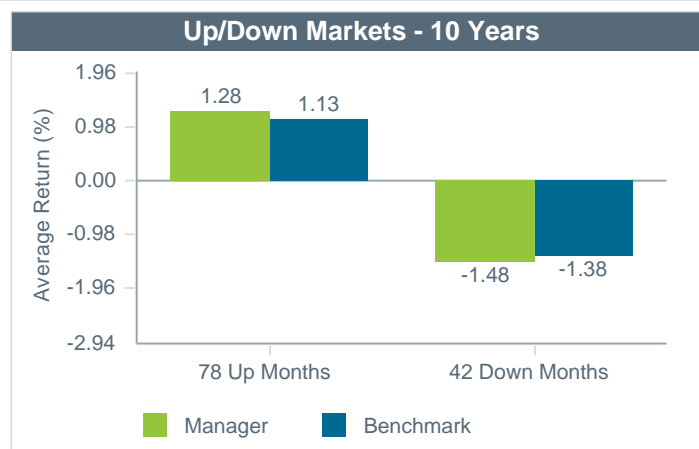
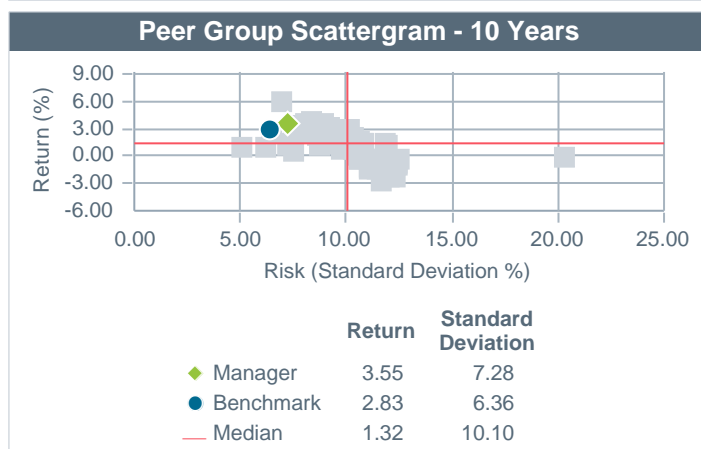
Manager: Goldman Sachs

As of December 31, 2022

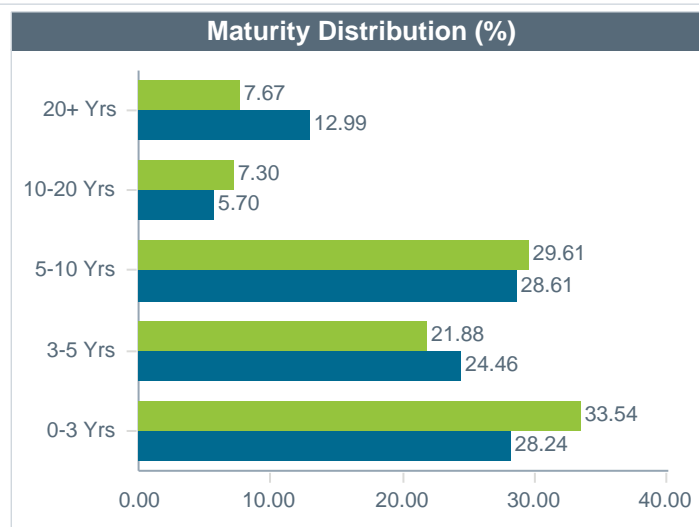
Benchmark: Goldman Sachs Custom Index

Peer Group: IM Emerging Markets Debt (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	5.87	-11.37	-1.36	1.60	4.11	3.55	-0.38	8.70	14.69	-1.62	9.57
Benchmark	4.72	-12.26	-1.69	1.11	3.25	2.83	0.91	7.31	13.09	-1.65	7.96
Difference	1.15	0.89	0.33	0.49	0.86	0.72	-1.29	1.39	1.60	0.03	1.61
Peer Group Median	8.44	-12.28	-3.54	-0.65	2.83	1.32	-2.12	6.72	14.30	-5.23	12.44
Rank	89	41	20	12	17	4	23	22	43	13	86
Population	130	130	129	124	118	90	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	4.11	4.25
Spread Duration	4.23	4.29
Avg. Maturity	11.38	10.45
Avg. Quality	Baa3	Baa3
Yield To Maturity (%)	8.46	7.72
Coupon Rate (%)	4.71	4.68
Current Yield (%)	5.40	5.26
Holdings Count	244	1,872

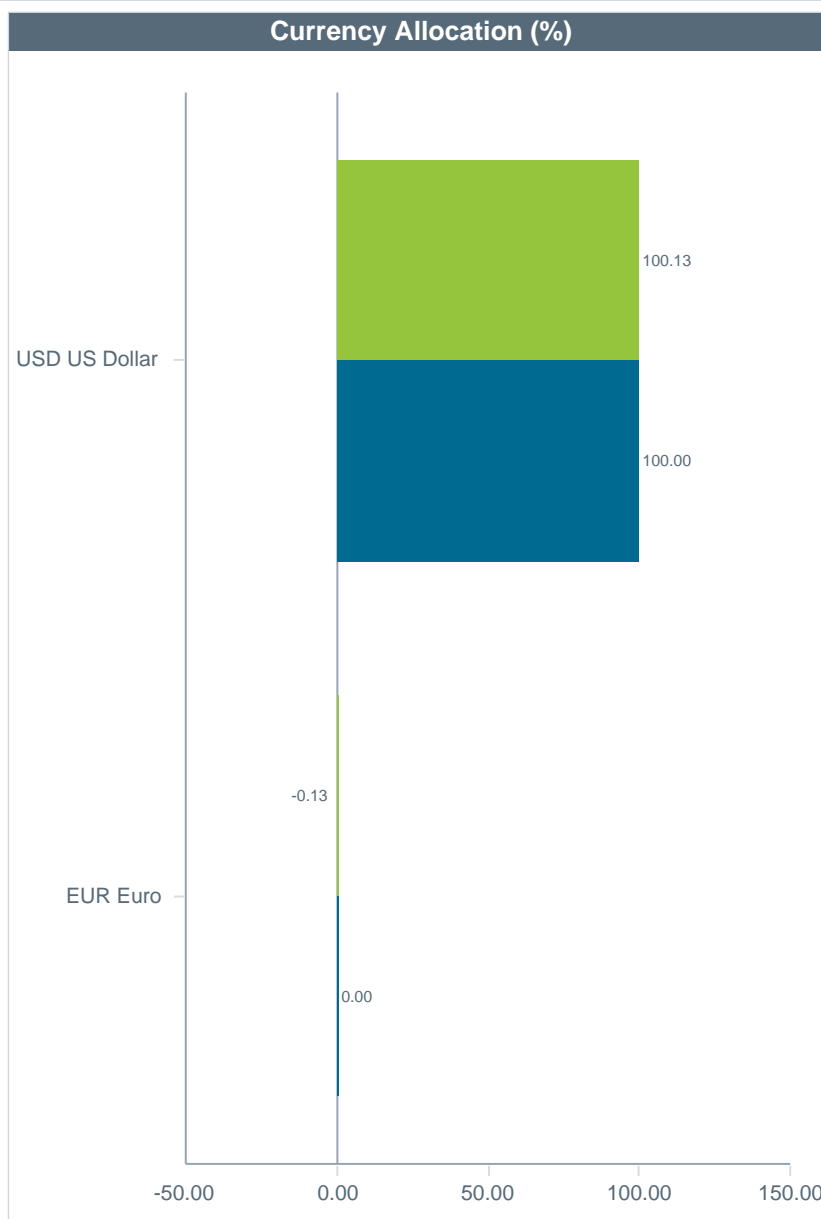
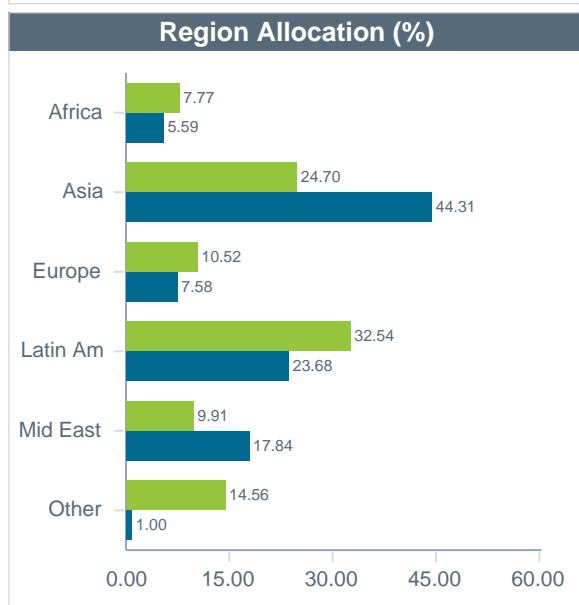
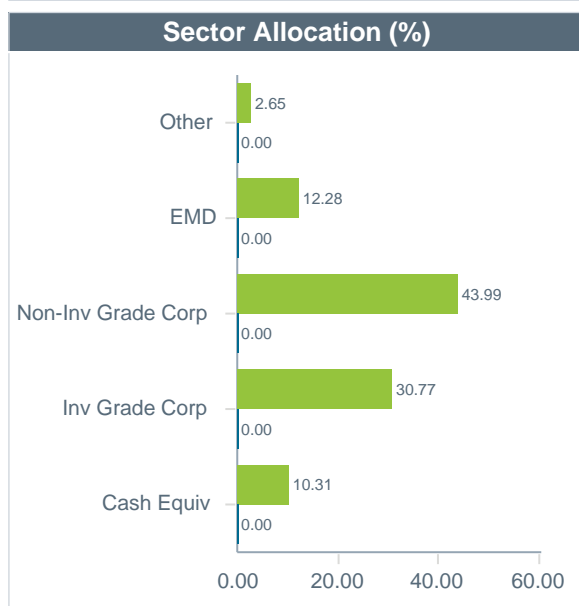
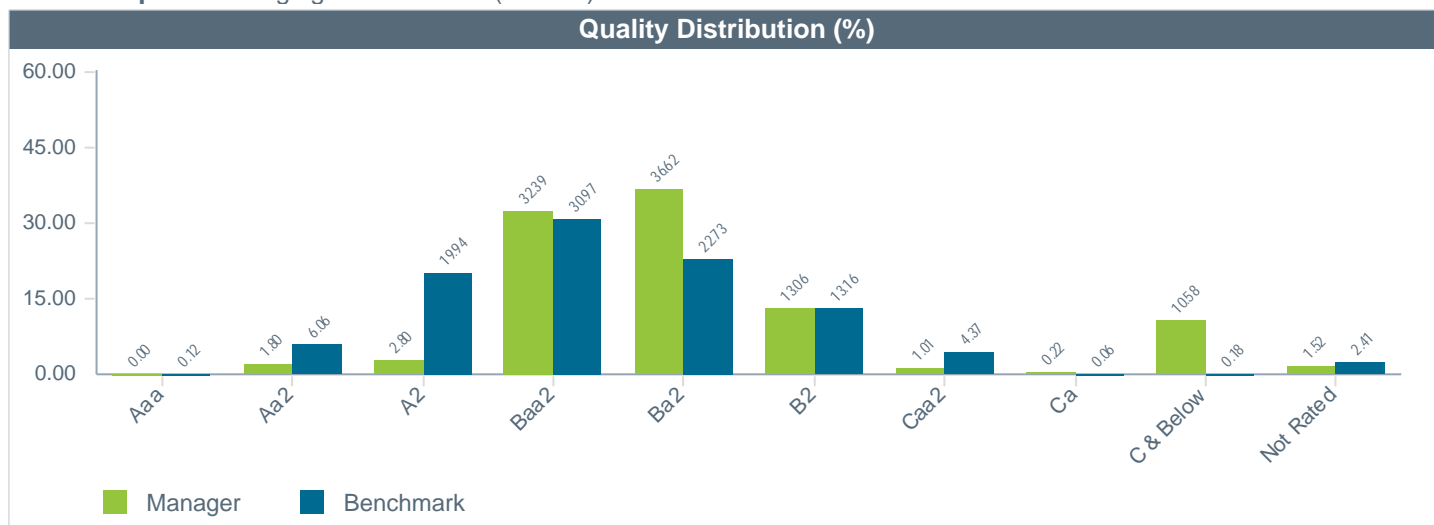


Manager: Goldman Sachs

As of December 31, 2022

Benchmark: Goldman Sachs Custom Index

Peer Group: IM Emerging Markets Debt (SA+CF)



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Sector allocation to "Other" consists of foreign exchange, supranational and interest rate swaps. Region allocation to "Other" consists of cash, supranational and developed.

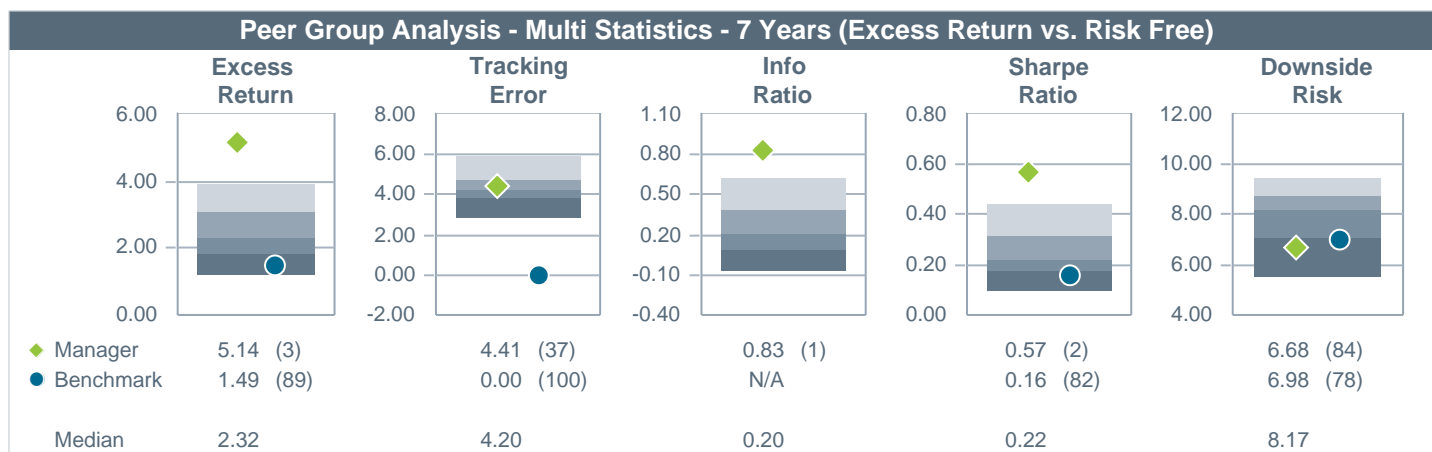
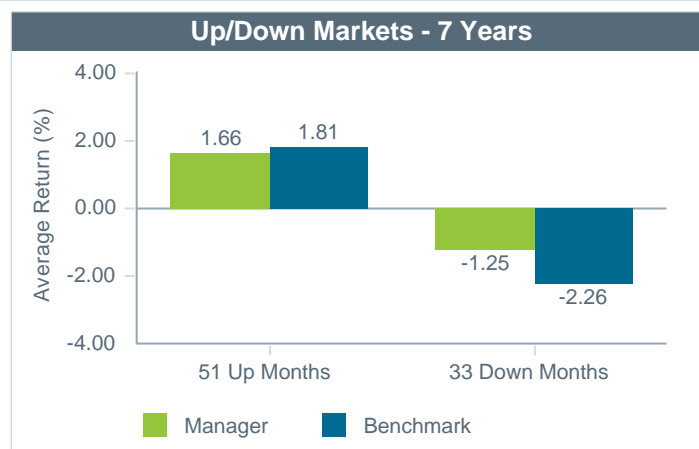
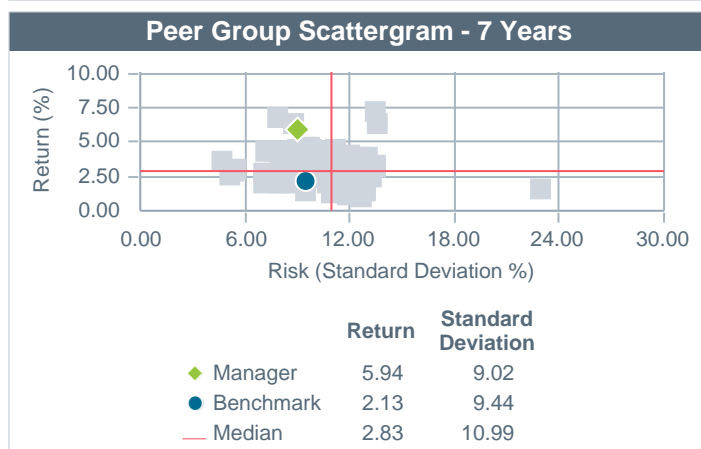
Manager: Eaton Vance

As of December 31, 2022

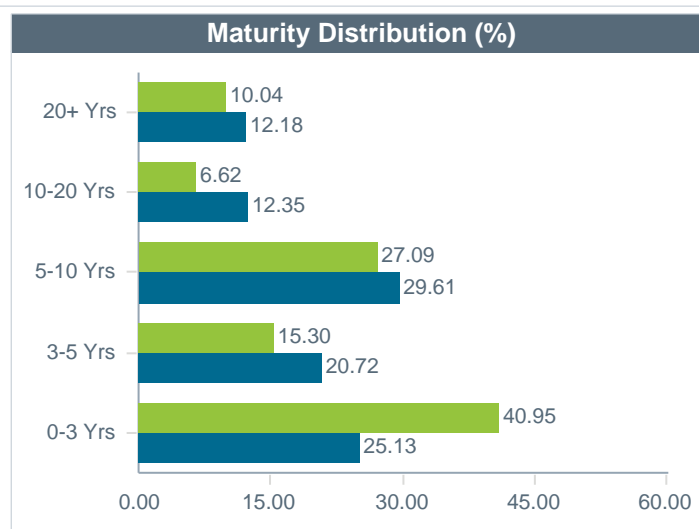
Benchmark: JP Morgan EMB (JEMB) Hard/Local 50/50

Peer Group: IM Emerging Markets Debt (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	9.26	-8.85	0.65	3.27	5.94	N/A	3.23	8.35	19.33	-3.44	14.00
Benchmark	7.43	-13.34	-4.78	-1.26	2.13	0.13	-4.65	4.49	13.84	-4.50	12.15
Difference	1.83	4.49	5.43	4.53	3.81	N/A	7.88	3.86	5.49	1.06	1.85
Peer Group Median	8.44	-12.28	-3.54	-0.65	2.83	1.32	-2.12	6.72	14.30	-5.23	12.44
Rank	28	22	4	2	3	N/A	3	24	1	24	35
Population	130	130	129	124	118	90	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	3.15	5.21
Spread Duration	2.32	2.76
Avg. Maturity	6.55	9.17
Avg. Quality	B	Ba3
Yield To Maturity (%)	12.15	7.54
Coupon Rate (%)	7.88	5.07
Current Yield (%)	9.11	5.55
Holdings Count	219	855

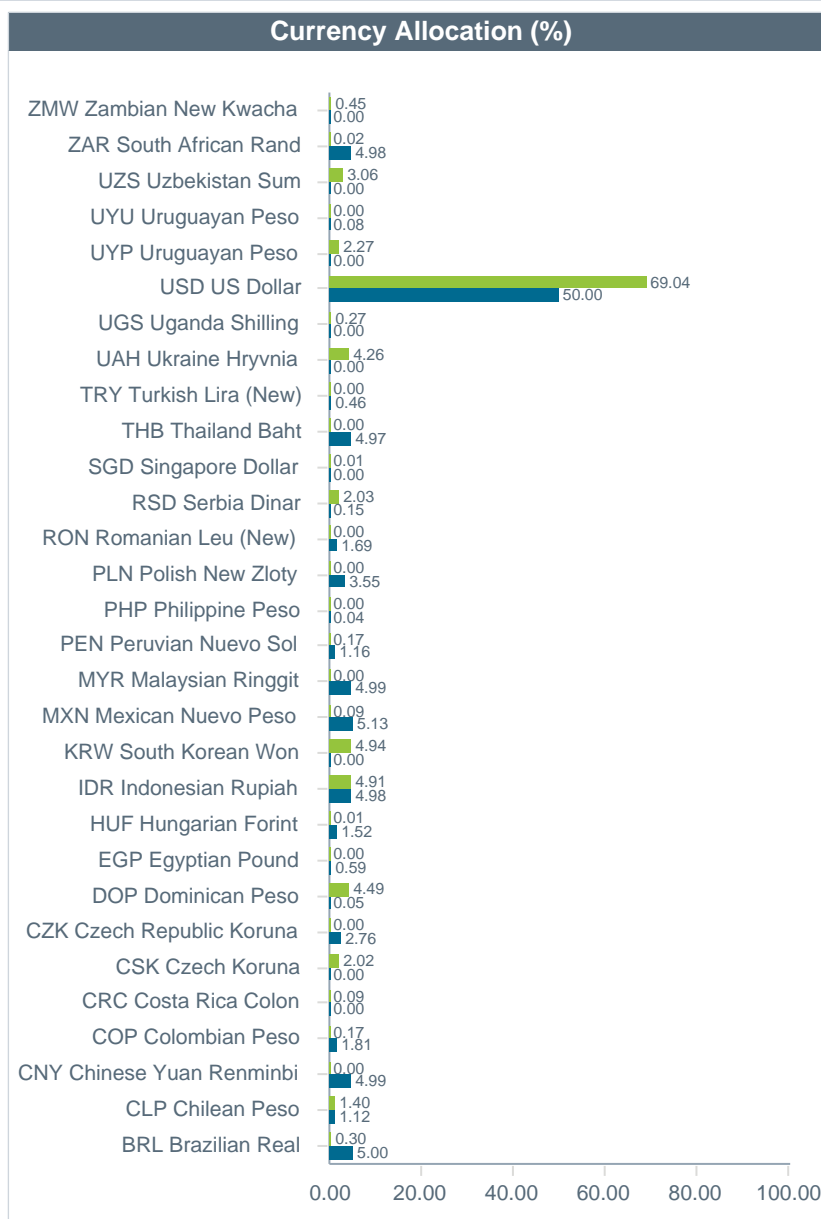
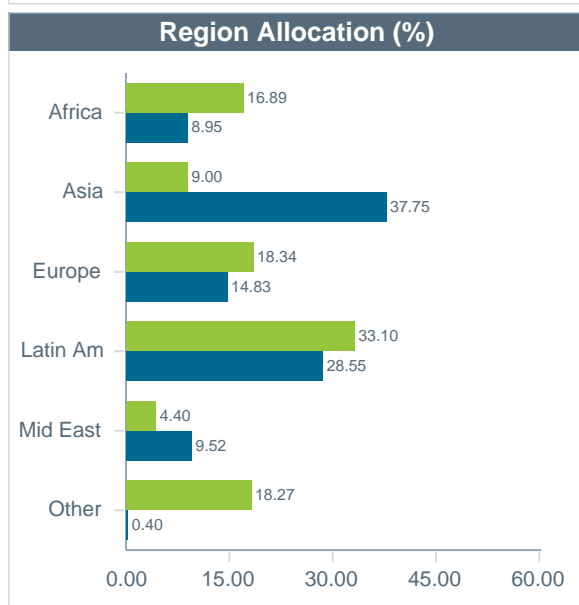
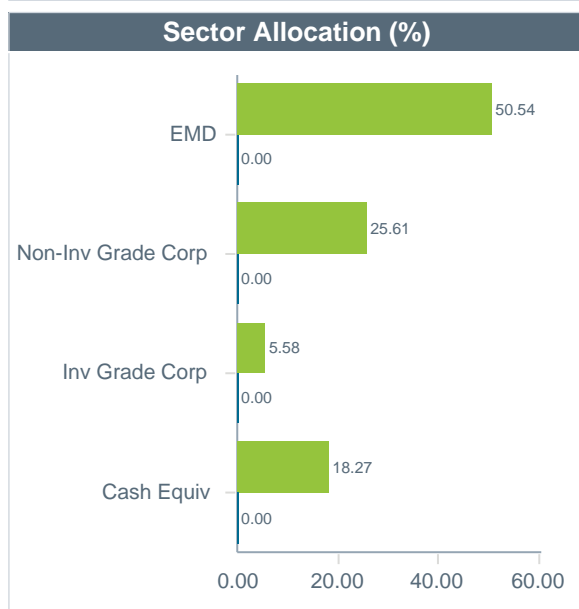
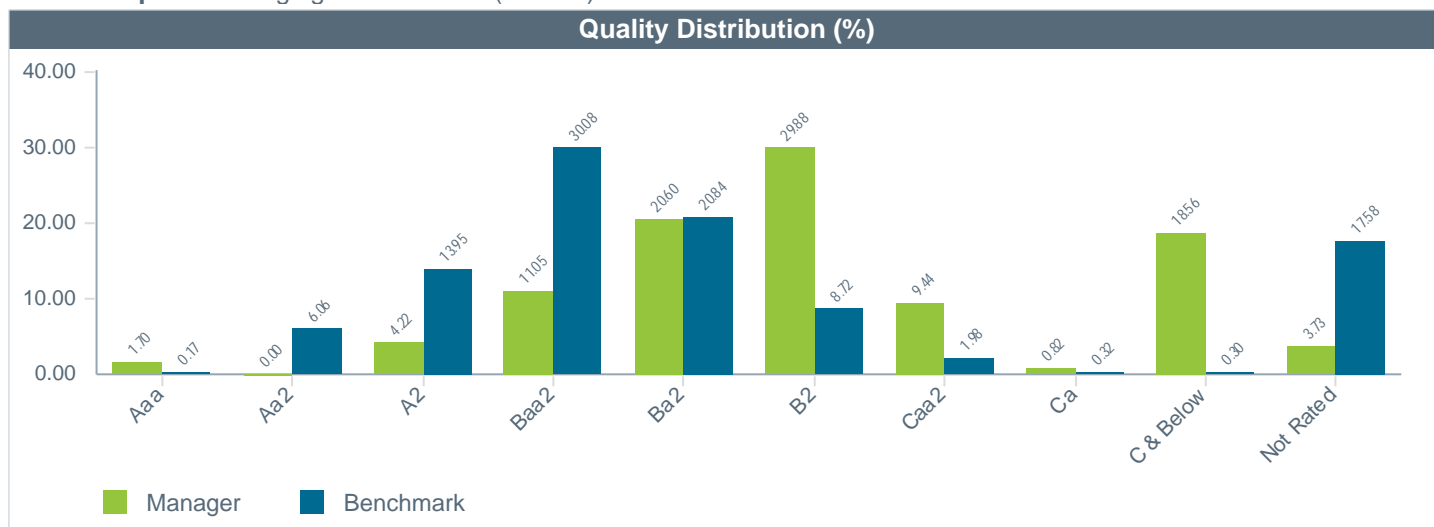


Manager: Eaton Vance

As of December 31, 2022

Benchmark: JP Morgan EMB (JEMB) Hard/Local 50/50

Peer Group: IM Emerging Markets Debt (SA+CF)



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Region allocation to "Other" consists of cash.



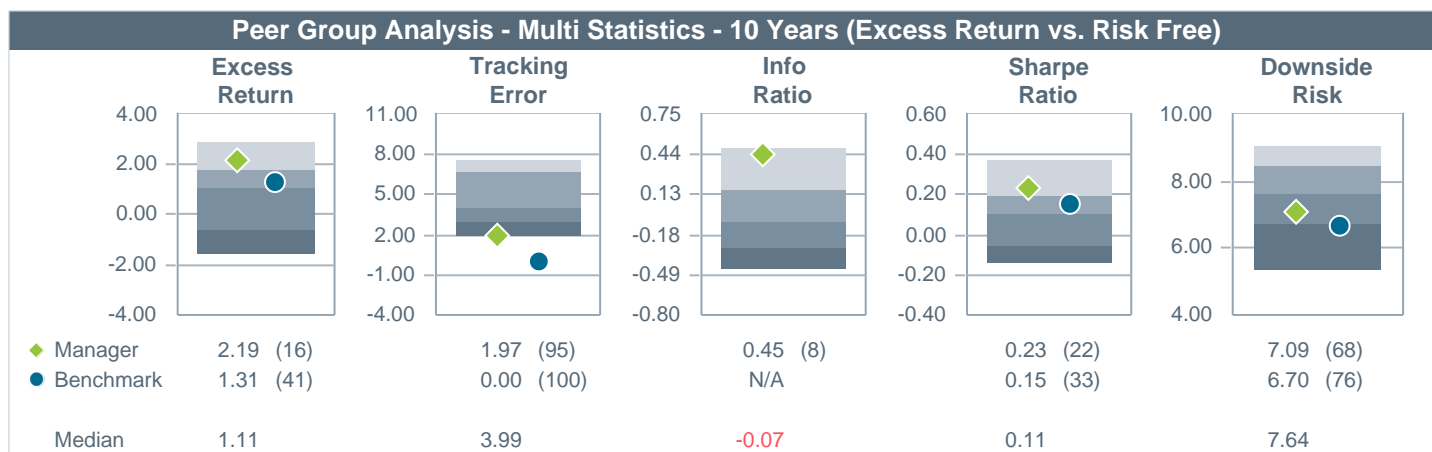
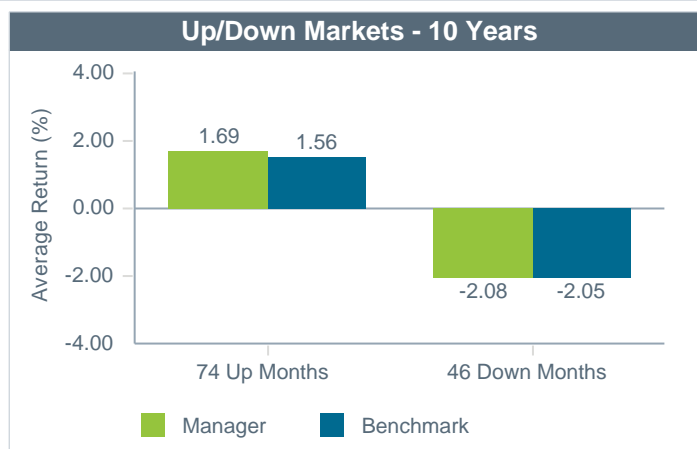
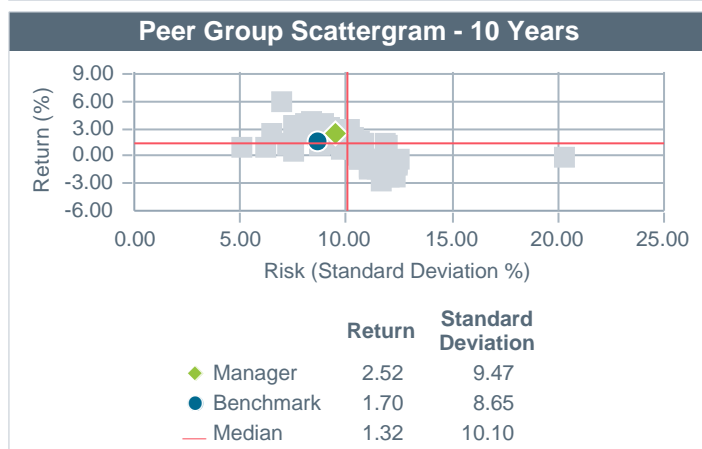
Manager: Global Evolution Hard

As of December 31, 2022

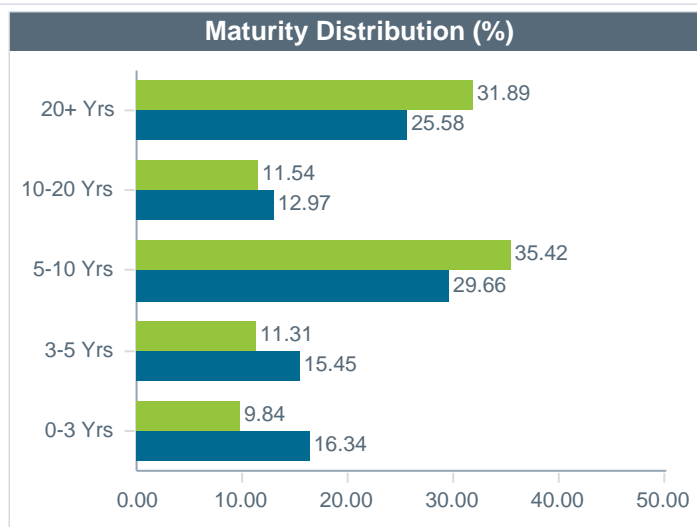
Benchmark: JP Morgan EMBIG Div Ex CCC Index (USD) Total Return

Peer Group: IM Emerging Markets Debt (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	10.50	-15.51	-4.60	-0.99	2.76	2.52	-3.07	6.04	14.13	-4.01	13.35
Benchmark	7.78	-17.26	-4.90	-0.94	2.07	1.70	-2.04	6.09	15.72	-4.14	10.79
Difference	2.72	1.75	0.30	-0.05	0.69	0.82	-1.03	-0.05	-1.59	0.13	2.56
Peer Group Median	8.44	-12.28	-3.54	-0.65	2.83	1.32	-2.12	6.72	14.30	-5.23	12.44
Rank	10	72	73	62	54	17	58	58	54	33	40
Population	130	130	129	124	118	90	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	7.42	6.70
Spread Duration	N/A	6.70
Avg. Maturity	14.07	12.10
Avg. Quality	Ba1	Ba1
Yield To Maturity (%)	7.57	7.55
Coupon Rate (%)	4.94	4.95
Current Yield (%)	6.09	5.95
Holdings Count	125	929

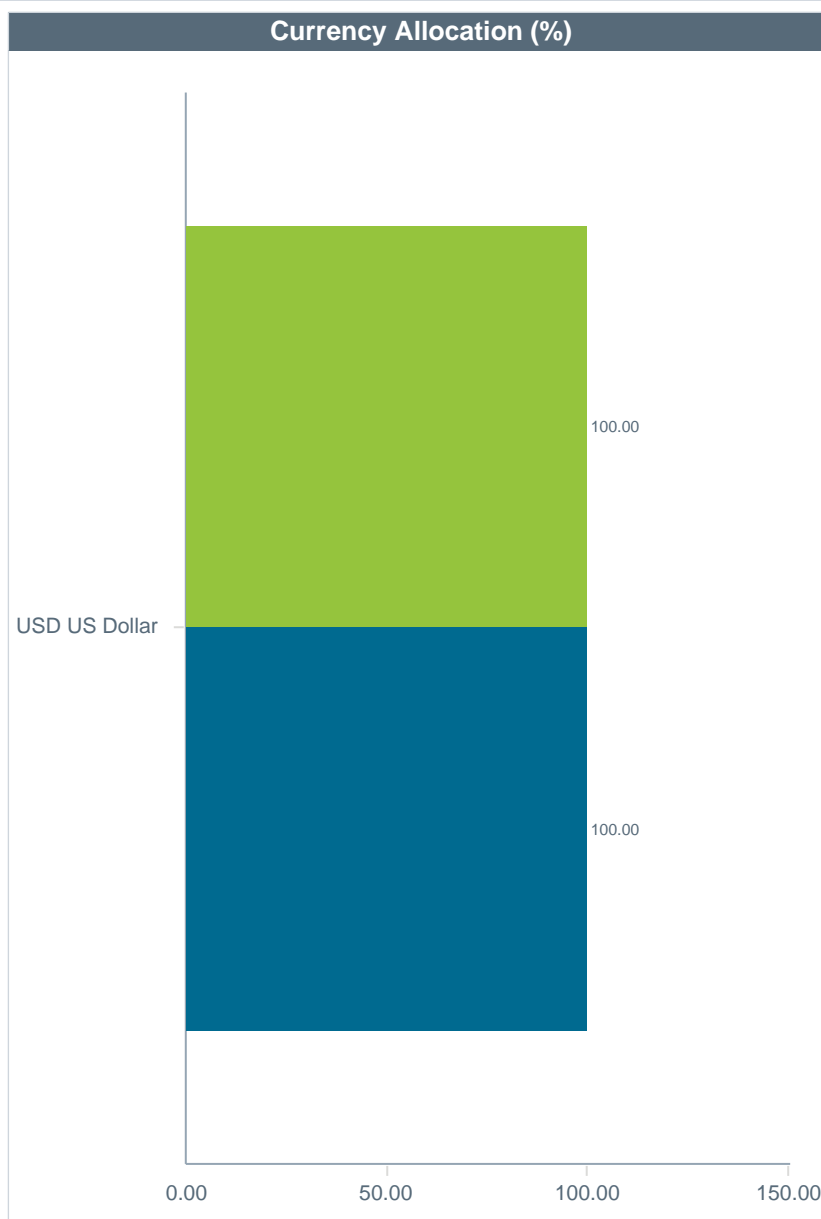
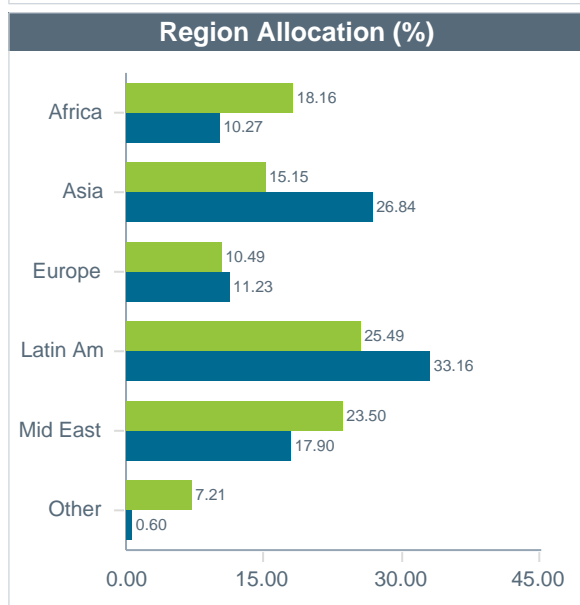
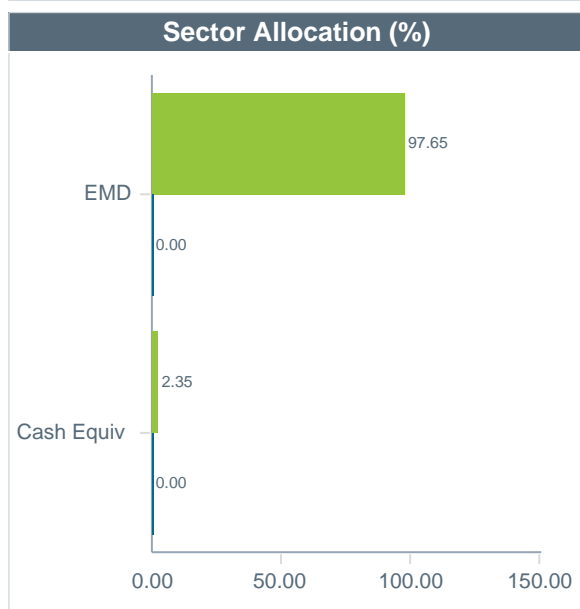
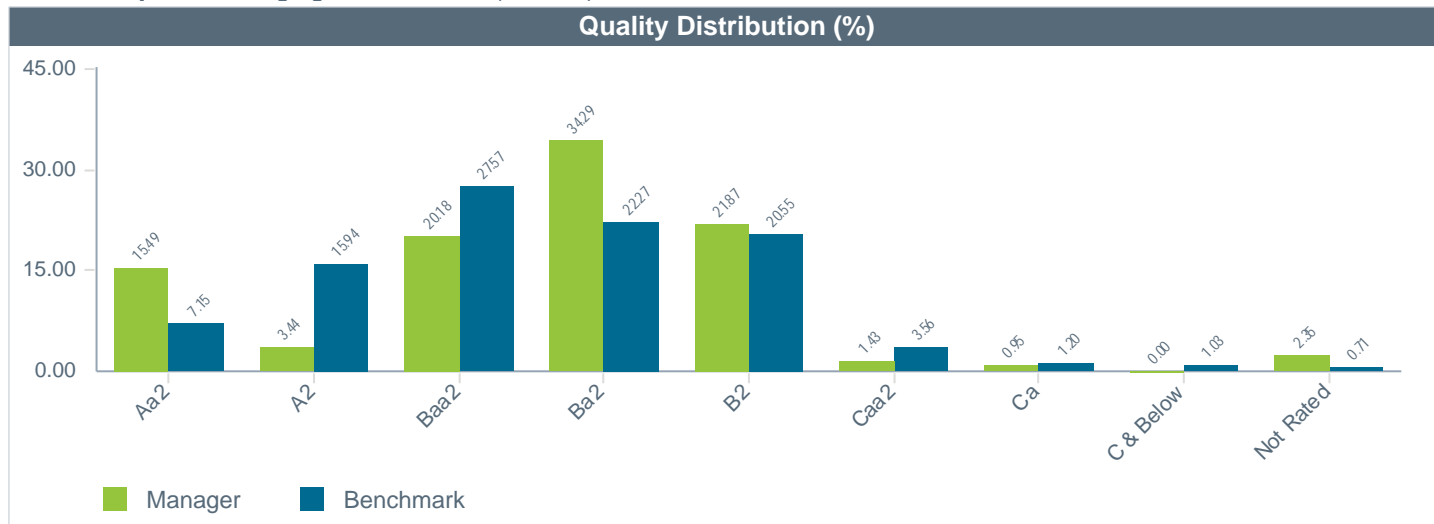


Manager: Global Evolution Hard

As of December 31, 2022

Benchmark: JP Morgan EMBIG Div Ex CCC Index (USD) Total Return

Peer Group: IM Emerging Markets Debt (SA+CF)



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Region allocation to "Other" consists of cash.

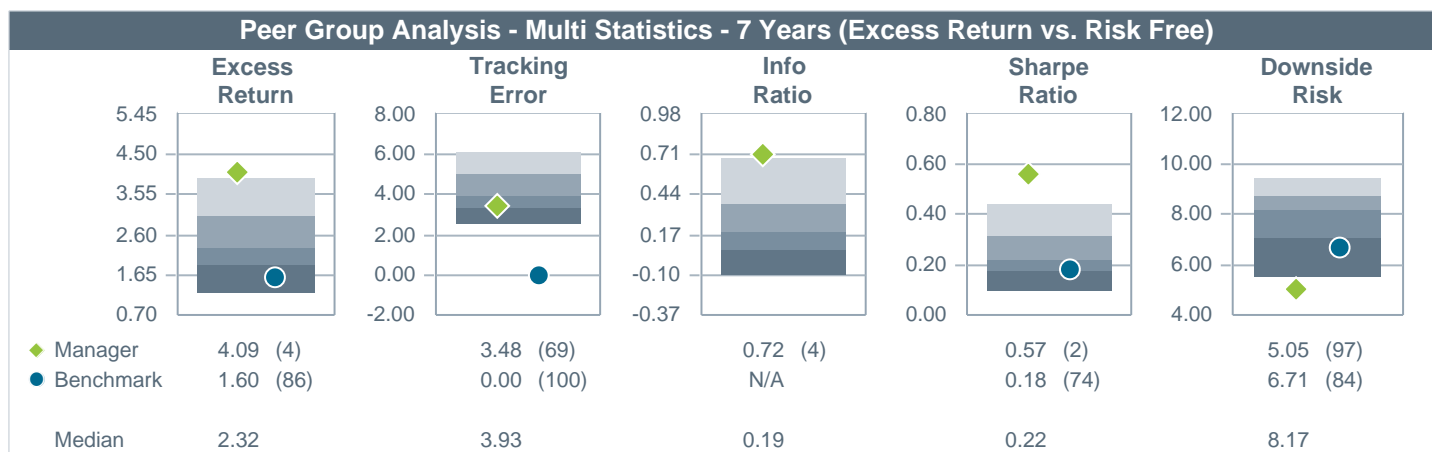
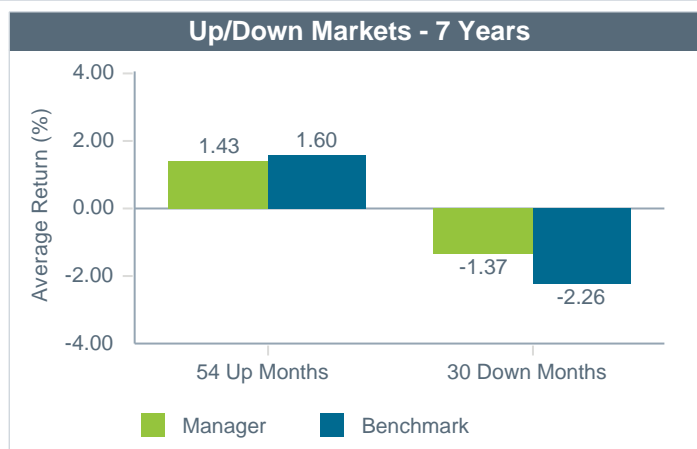
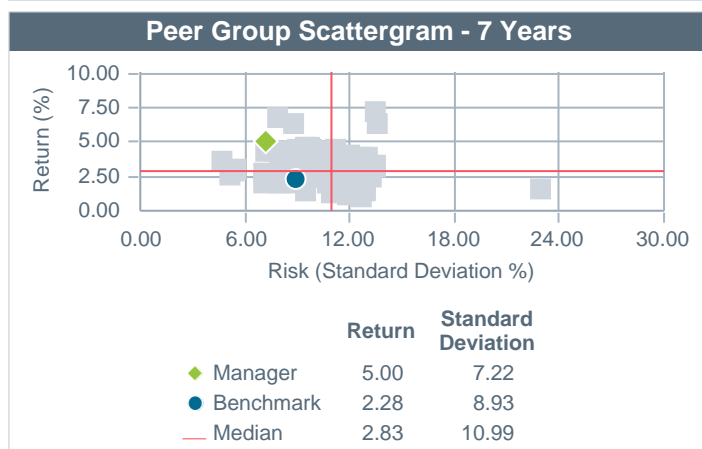
Manager: Finisterre

As of December 31, 2022

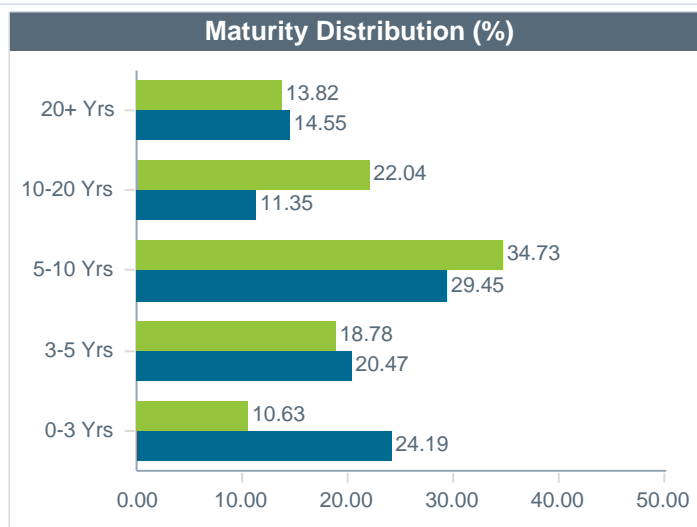
Benchmark: Custom EMD Benchmark (1/3)

Peer Group: IM Emerging Markets Debt (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	7.48	-7.66	-0.95	2.39	5.00	N/A	-2.68	8.14	16.04	-0.20	12.46
Benchmark	7.09	-13.90	-4.34	-0.86	2.28	0.84	-3.26	5.07	13.93	-3.96	11.13
Difference	0.39	6.24	3.39	3.25	2.72	N/A	0.58	3.07	2.11	3.76	1.33
Peer Group Median	8.44	-12.28	-3.54	-0.65	2.83	1.32	-2.12	6.72	14.30	-5.23	12.44
Rank	71	15	17	4	4	N/A	54	29	15	6	50
Population	130	130	129	124	118	90	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	5.22	5.30
Spread Duration	3.10	3.67
Avg. Maturity	9.00	9.87
Avg. Quality	Ba1	Ba2
Yield To Maturity (%)	8.50	7.57
Coupon Rate (%)	6.29	4.99
Current Yield (%)	6.04	5.57
Holdings Count	145	1,037

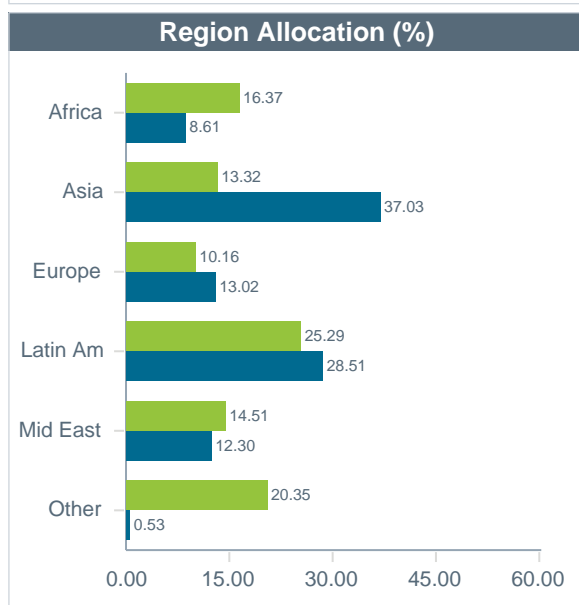
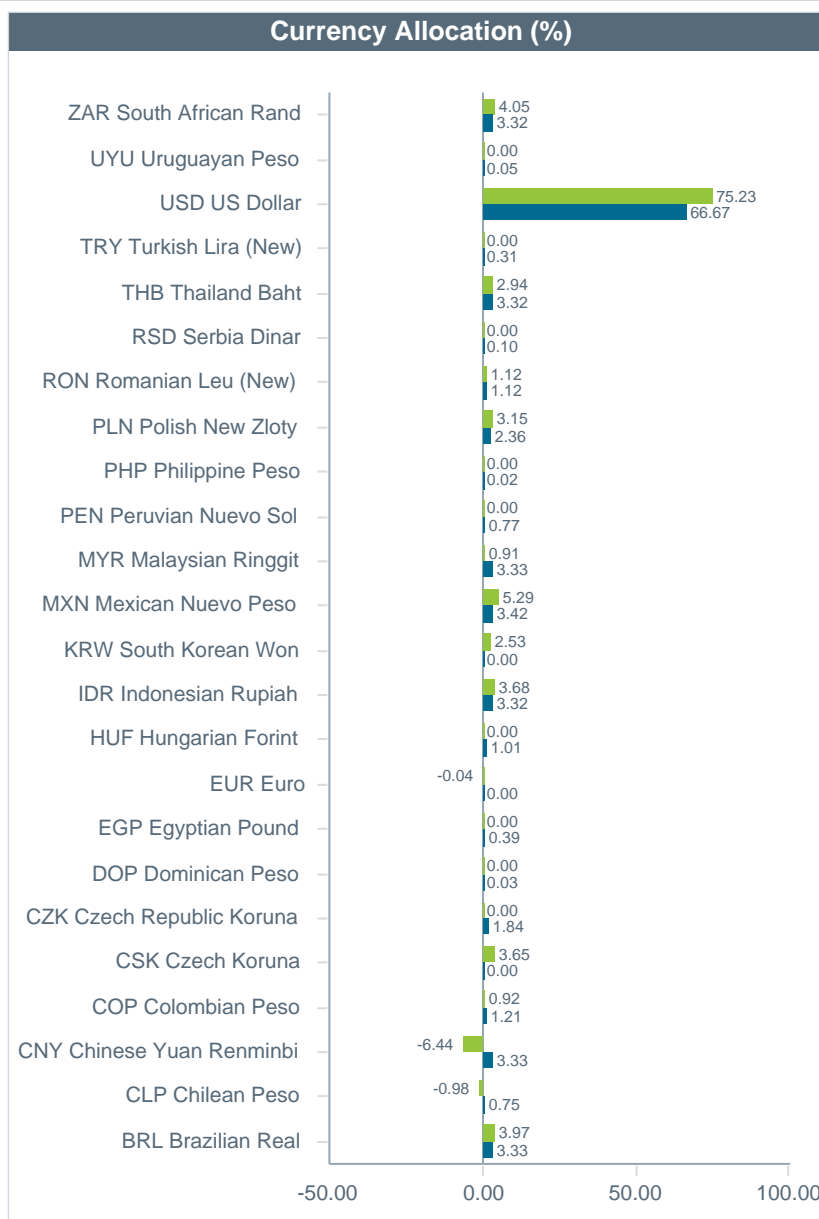
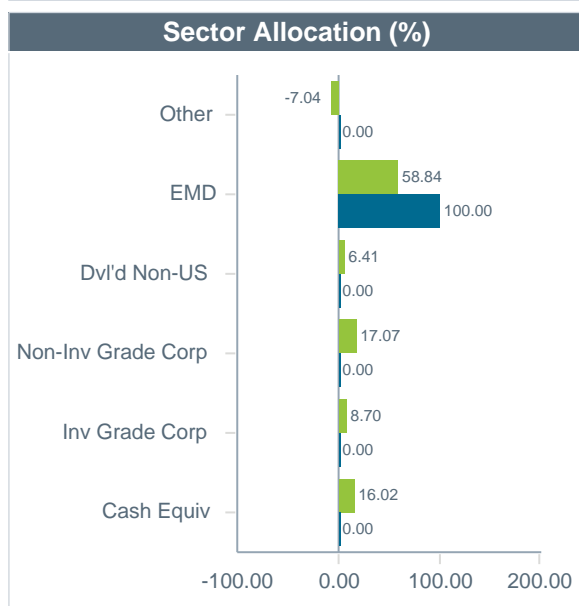
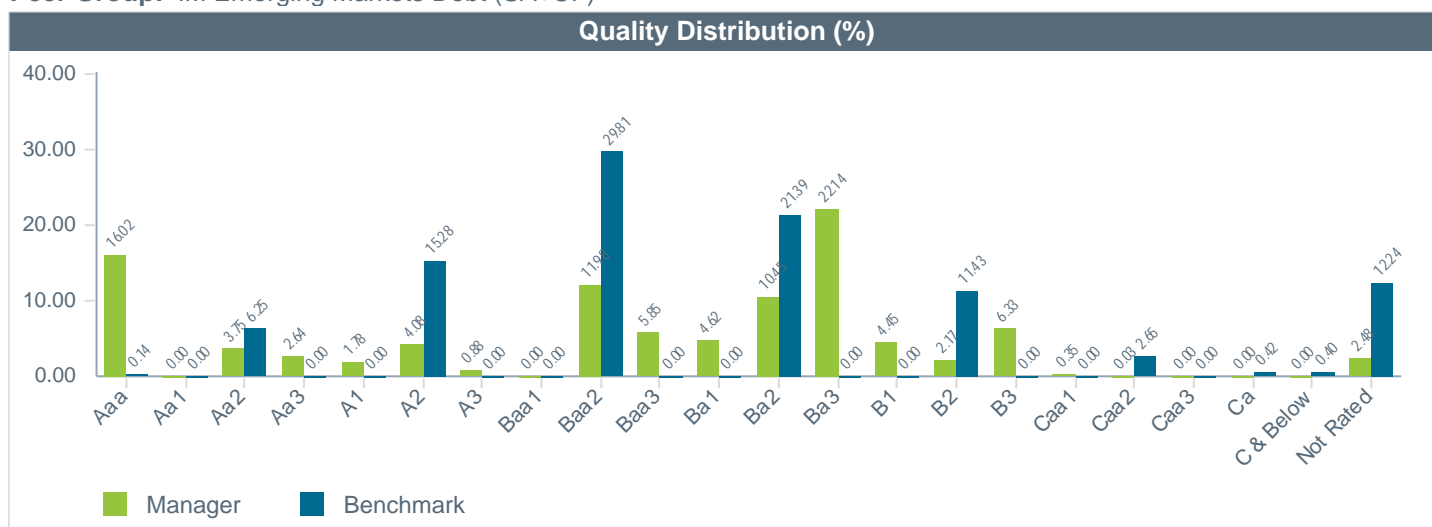


Manager: Finisterre

As of December 31, 2022

Benchmark: Custom EMD Benchmark (1/3)

Peer Group: IM Emerging Markets Debt (SA+CF)



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Sector and region allocation to "Other" consists of foreign exchange, futures, margin for derivatives and interest rate swaps.

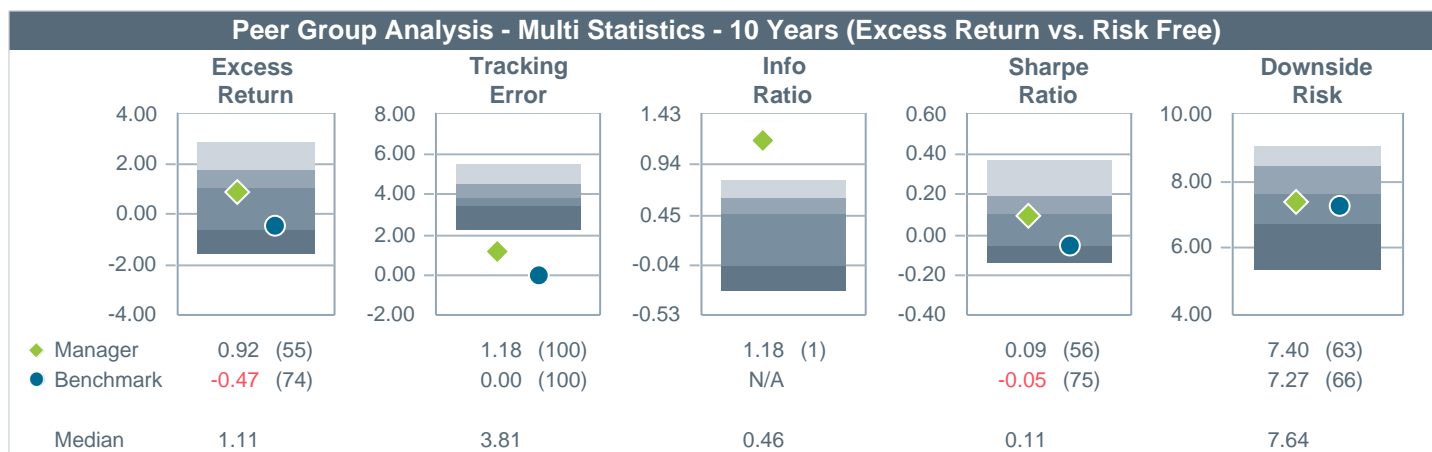
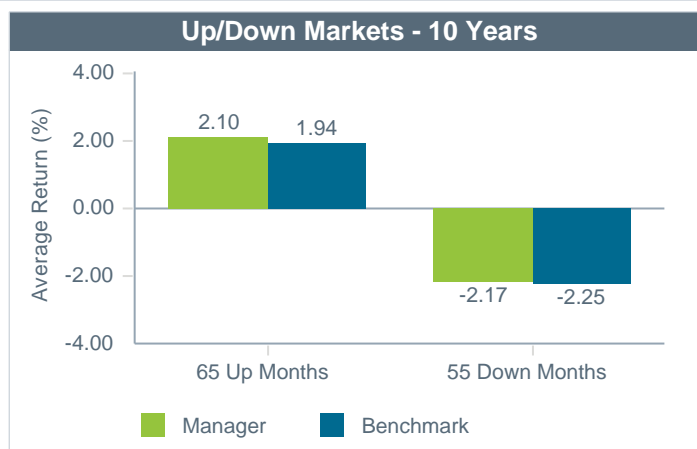
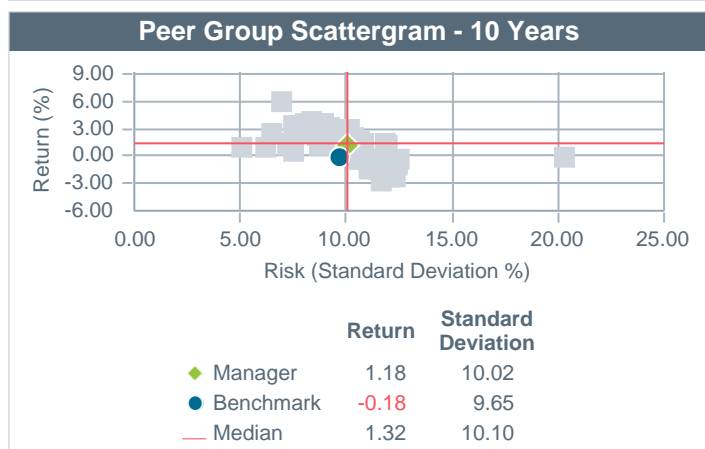
Manager: Wellington

As of December 31, 2022

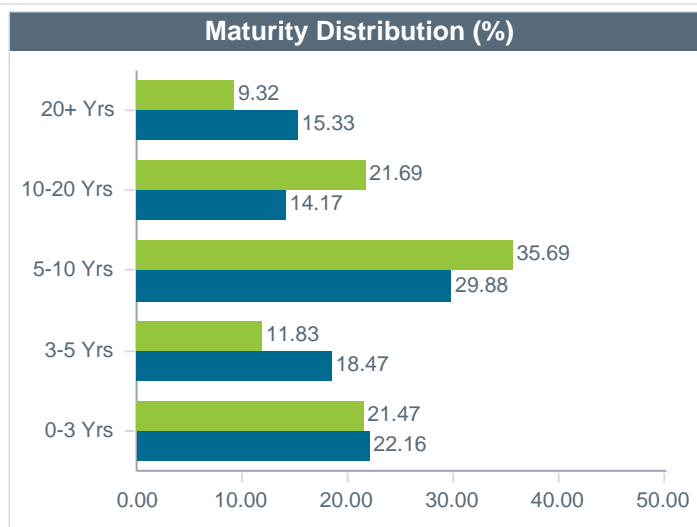
Benchmark: 50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div

Peer Group: IM Emerging Markets Debt (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	8.42	-13.59	-4.44	-0.63	3.23	1.18	-5.20	6.53	17.28	-5.34	14.56
Benchmark	8.29	-14.75	-5.66	-1.86	1.77	-0.18	-5.32	4.02	14.31	-5.15	12.74
Difference	0.13	1.16	1.22	1.23	1.46	1.36	0.12	2.51	2.97	-0.19	1.82
Peer Group Median	8.44	-12.28	-3.54	-0.65	2.83	1.32	-2.12	6.72	14.30	-5.23	12.44
Rank	53	59	70	50	38	55	71	54	5	54	30
Population	130	130	129	124	118	90	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	5.83	5.83
Spread Duration	3.19	3.37
Avg. Maturity	9.21	9.58
Avg. Quality	Baa1	Ba2
Yield To Maturity (%)	7.53	7.49
Coupon Rate (%)	5.09	5.14
Current Yield (%)	6.45	5.72
Holdings Count	454	619

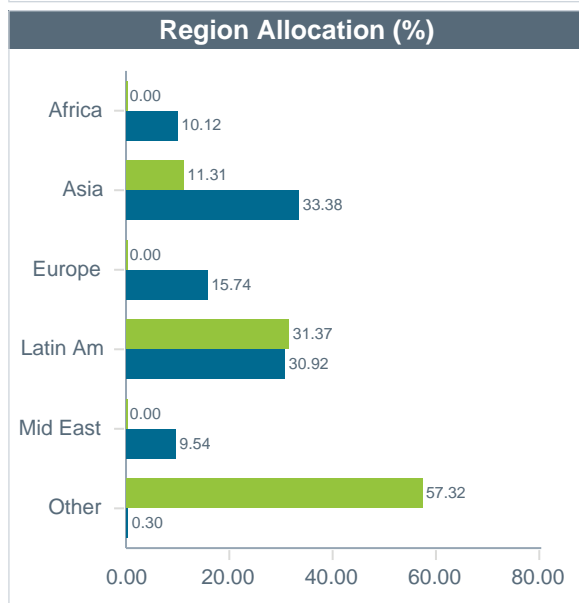
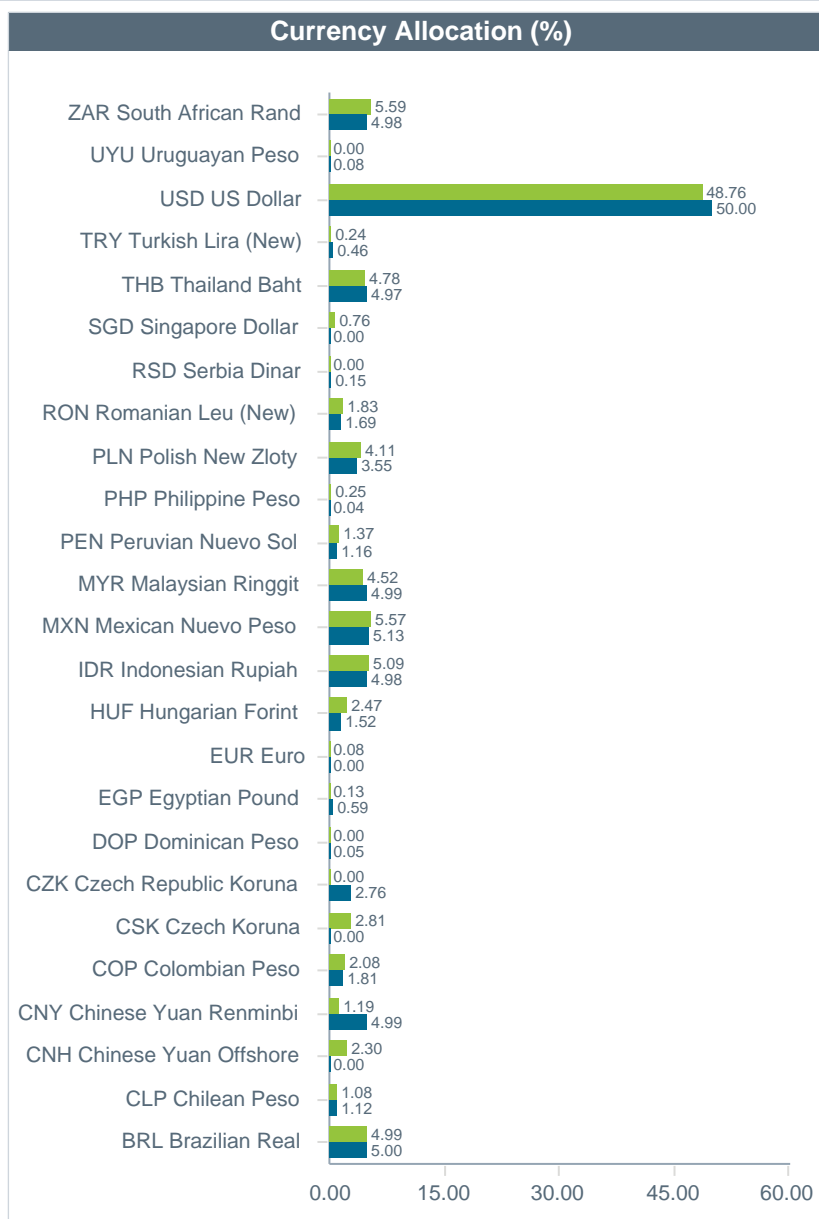
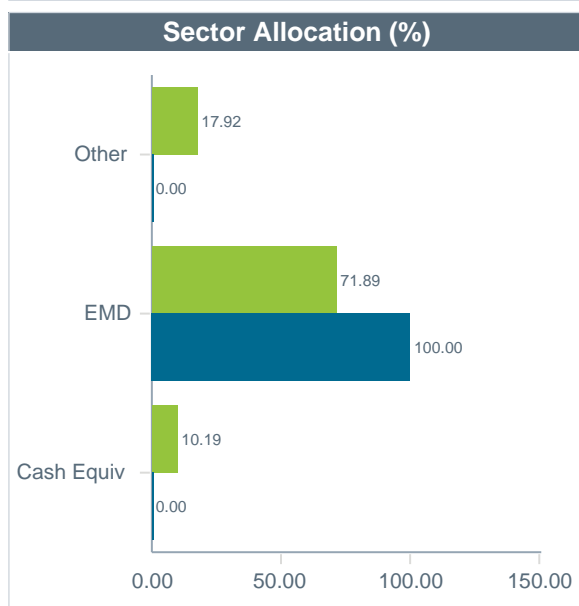
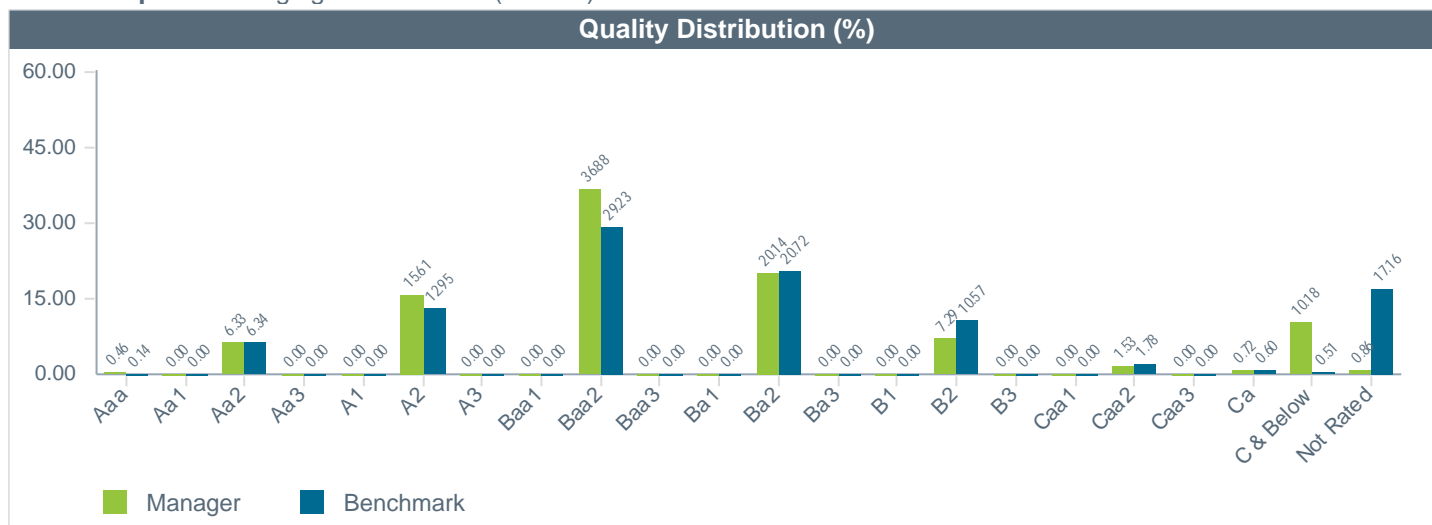


Manager: Wellington

As of December 31, 2022

Benchmark: 50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div

Peer Group: IM Emerging Markets Debt (SA+CF)



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Region allocation to "Other" consists of cash and holdings not allocated among the other categories.



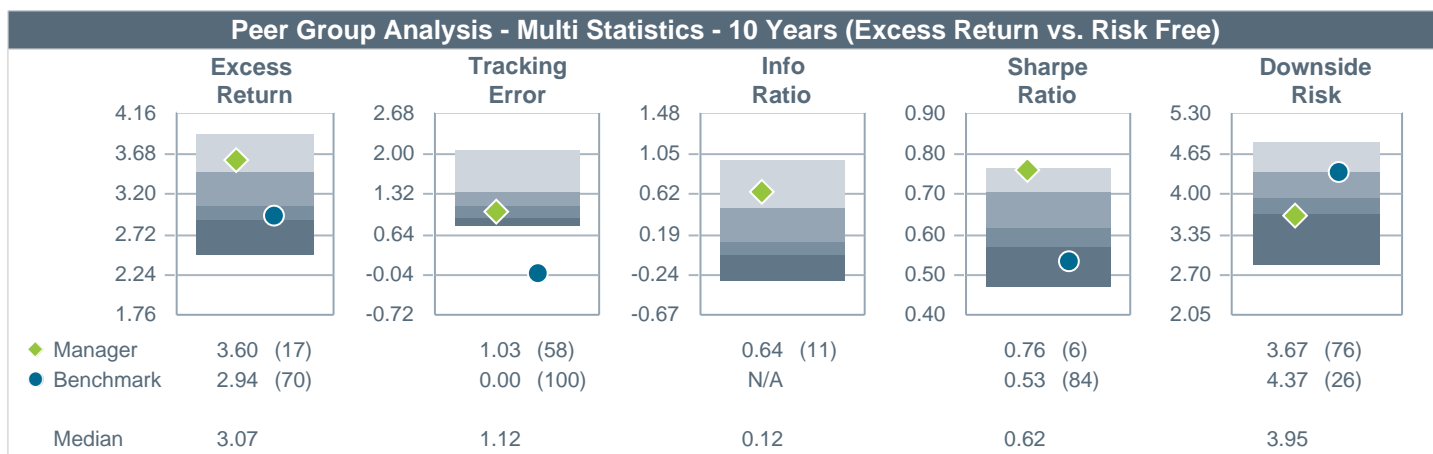
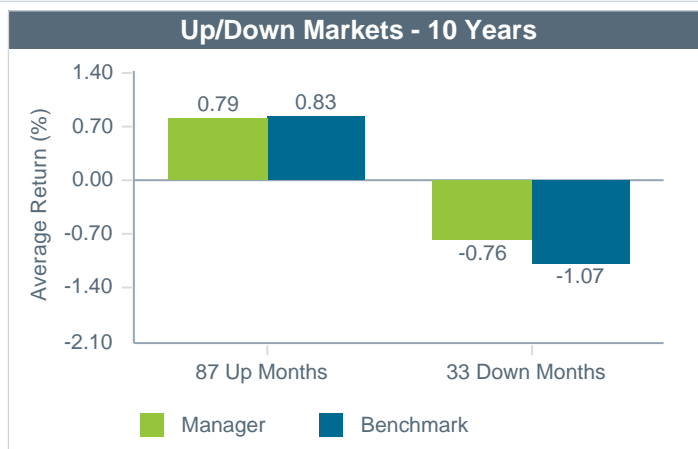
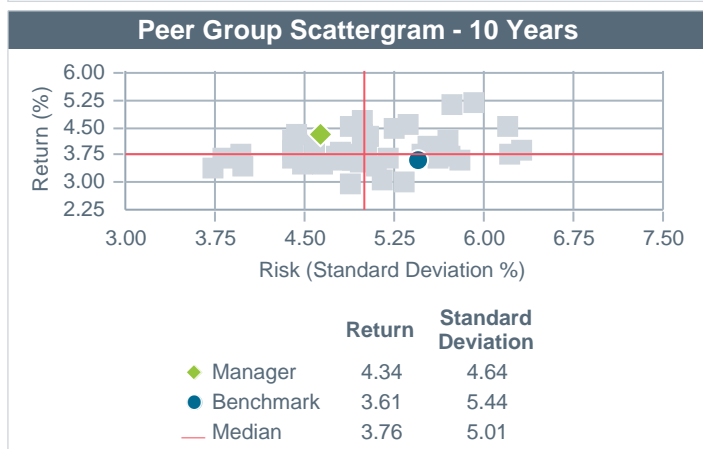
Manager: Credit Suisse

As of December 31, 2022

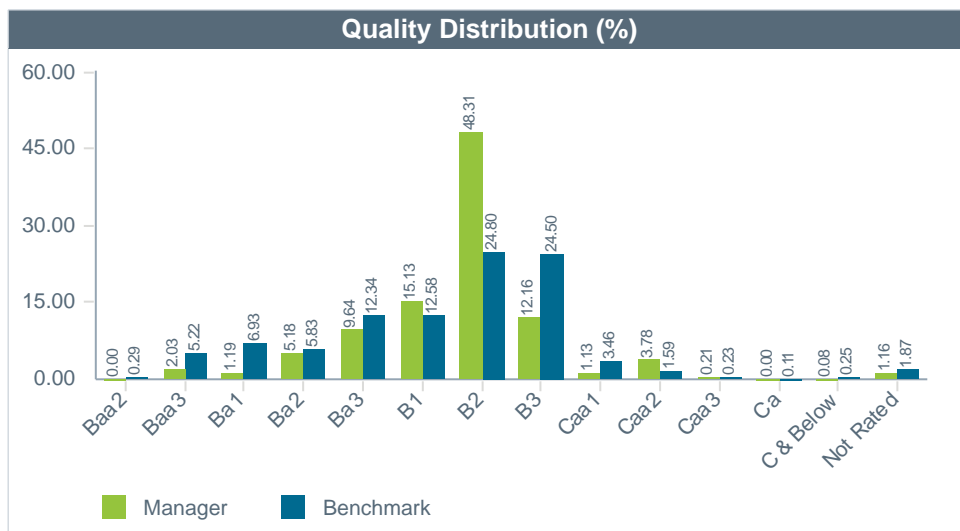
Benchmark: Bank Loans Custom Index

Peer Group: IM U.S. Bank Loans (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	2.34	-0.24	2.67	3.48	4.54	4.34	5.23	3.11	7.97	1.51	5.07
Benchmark	3.75	-0.68	2.34	3.18	4.29	3.61	4.66	3.12	8.64	0.44	4.12
Difference	-1.41	0.44	0.33	0.30	0.25	0.73	0.57	-0.01	-0.67	1.07	0.95
Peer Group Median	2.92	-0.87	2.40	3.26	4.26	3.76	5.34	2.67	8.71	0.80	4.46
Rank	78	39	34	36	31	16	53	31	82	11	17
Population	52	52	51	50	48	45	54	57	60	67	68



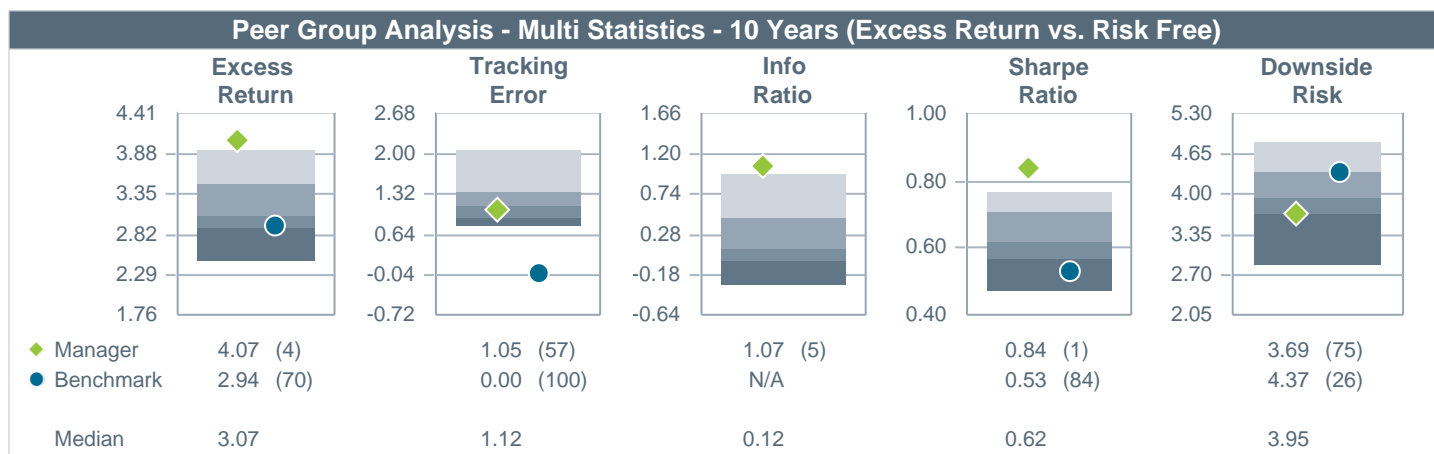
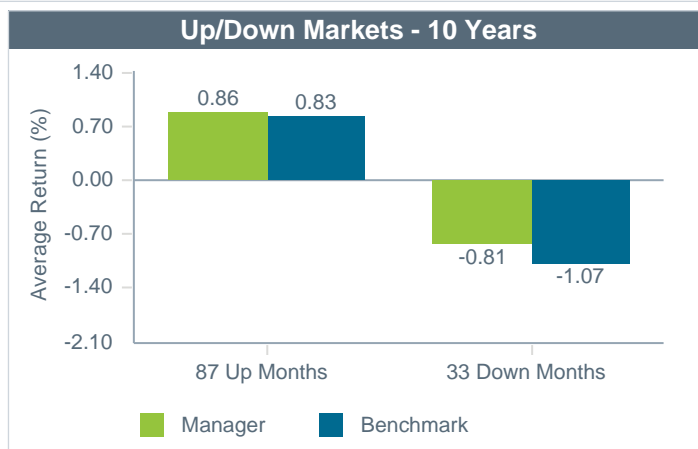
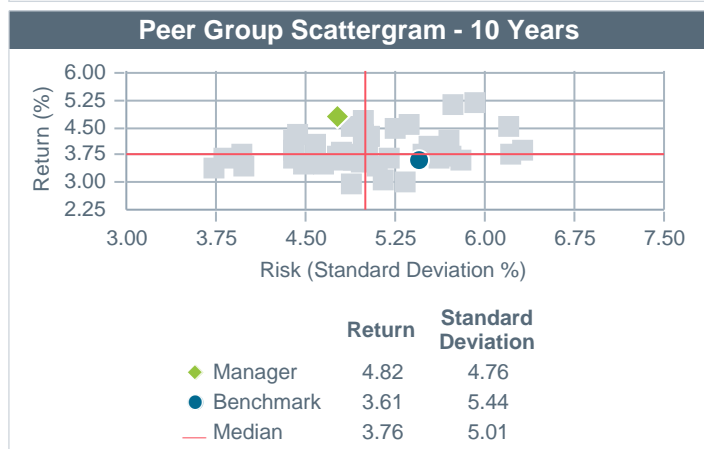
Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.25	N/A
Spread Duration	2.18	N/A
Avg. Maturity	4.39	4.48
Avg. Quality	B2	B1
Yield To Maturity (%)	10.36	9.99
Coupon Rate (%)	8.29	3.58
Current Yield (%)	8.96	9.99
Holdings Count	302	1,504



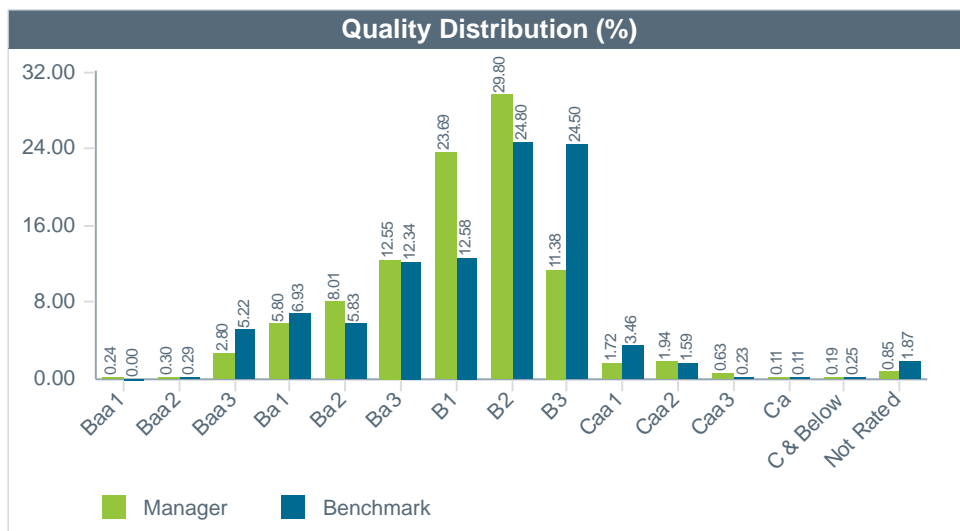
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.



Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	3.38	-1.01	2.55	3.72	5.08	4.82	5.04	3.72	8.92	2.17	6.65
Benchmark	3.75	-0.68	2.34	3.18	4.29	3.61	4.66	3.12	8.64	0.44	4.12
Difference	-0.37	-0.33	0.21	0.54	0.79	1.21	0.38	0.60	0.28	1.73	2.53
Peer Group Median	2.92	-0.87	2.40	3.26	4.26	3.76	5.34	2.67	8.71	0.80	4.46
Rank	12	56	42	16	6	4	57	17	44	6	5
Population	52	52	51	50	48	45	54	57	60	67	68



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.25	N/A
Spread Duration	N/A	N/A
Avg. Maturity	4.87	4.48
Avg. Quality	B1	B1
Yield To Maturity (%)	10.23	9.99
Coupon Rate (%)	8.20	3.58
Current Yield (%)	8.85	9.99
Holdings Count	323	1,504



Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

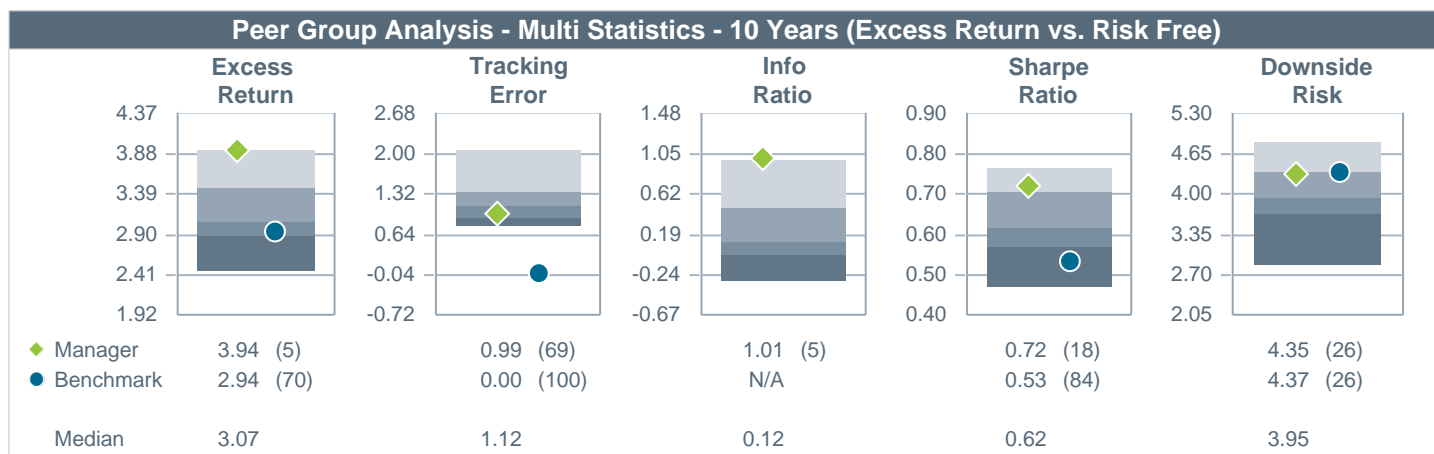
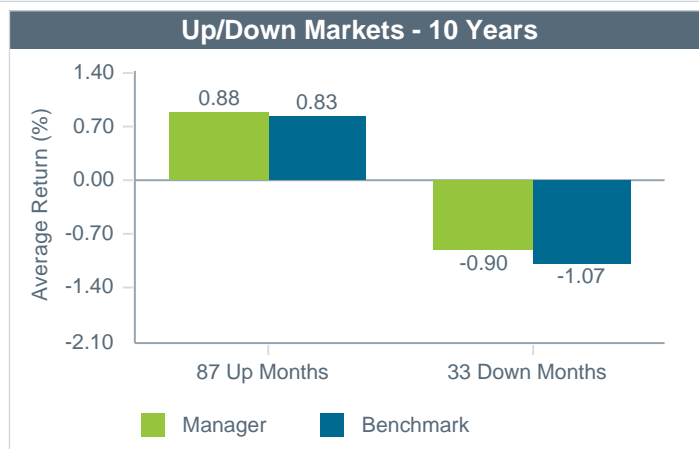
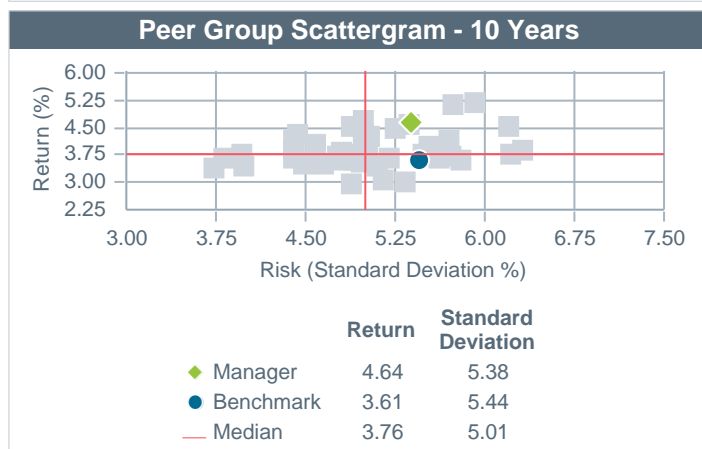
Manager: KKR

As of December 31, 2022

Benchmark: Bank Loans Custom Index

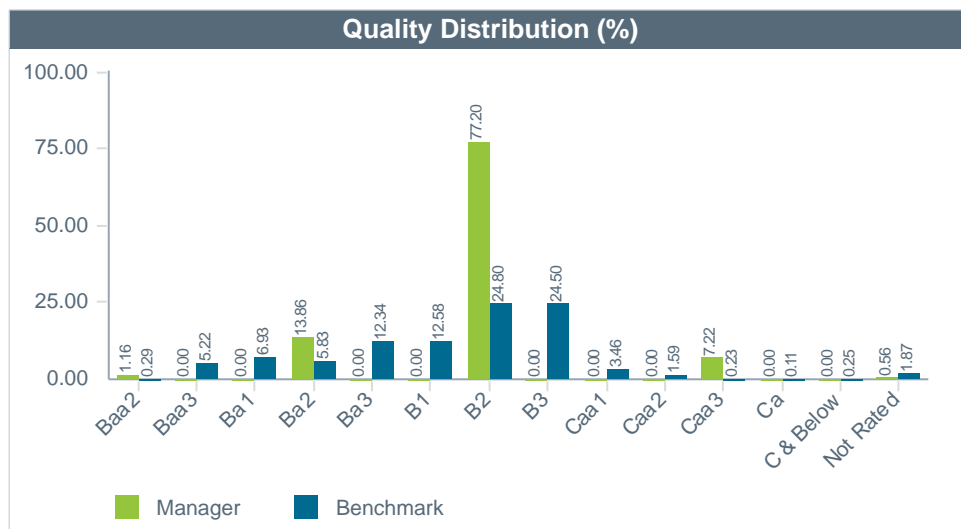
Peer Group: IM U.S. Bank Loans (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	2.16	-0.56	3.45	3.84	5.05	4.64	5.86	5.18	7.87	1.10	5.13
Benchmark	3.75	-0.68	2.34	3.18	4.29	3.61	4.66	3.12	8.64	0.44	4.12
Difference	-1.59	0.12	1.11	0.66	0.76	1.03	1.20	2.06	-0.77	0.66	1.01
Peer Group Median	2.92	-0.87	2.40	3.26	4.26	3.76	5.34	2.67	8.71	0.80	4.46
Rank	87	42	6	12	6	6	29	7	83	34	16
Population	52	52	51	50	48	45	54	57	60	67	68



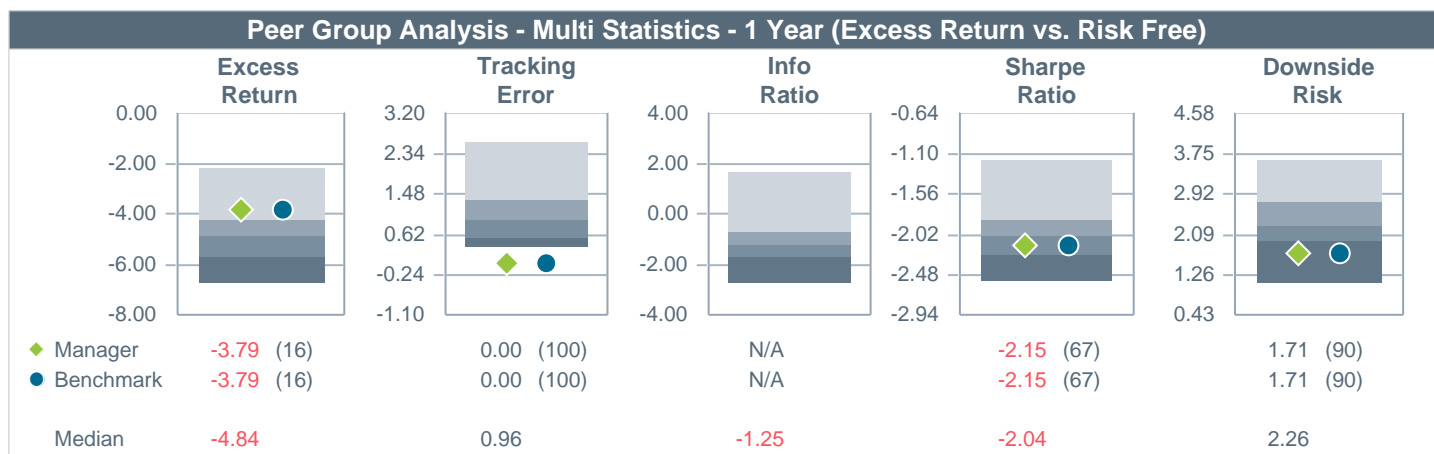
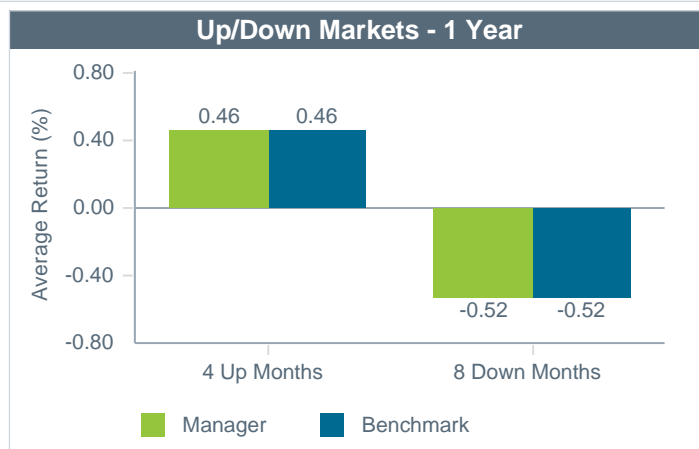
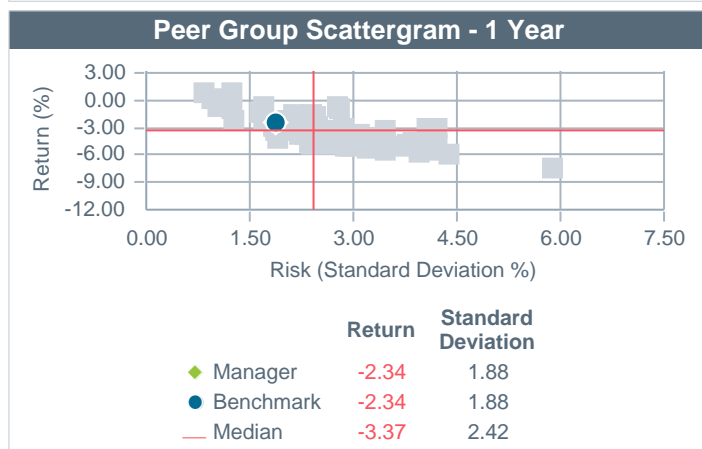
Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	0.16	N/A
Spread Duration	3.46	N/A
Avg. Maturity	4.54	4.48
Avg. Quality	B2	B1
Yield To Maturity (%)	9.85	9.99
Coupon Rate (%)	8.28	3.58
Current Yield (%)	8.87	9.99
Holdings Count	295	1,504

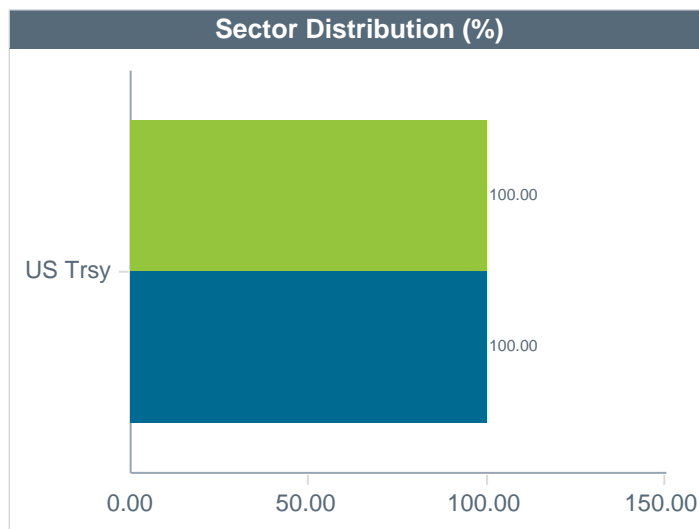


Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	1.02	-2.34	0.12	N/A	N/A	N/A	-0.42	3.20	N/A	N/A	N/A
Benchmark	1.02	-2.34	0.12	N/A	N/A	N/A	-0.42	3.20	N/A	N/A	N/A
Difference	0.00	0.00	0.00	N/A	N/A	N/A	0.00	0.00	N/A	N/A	N/A
Peer Group Median	1.07	-3.37	0.15	1.28	1.38	1.25	-0.20	3.92	4.53	1.67	1.52
Rank	58	16	54	N/A	N/A	N/A	75	83	N/A	N/A	N/A
Population	110	110	105	103	96	86	117	122	125	134	134



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	1.71	1.71
Spread Duration	N/A	N/A
Avg. Maturity	1.80	1.80
Avg. Quality	Aaa	Aaa
Yield To Maturity (%)	4.48	4.48
Coupon Rate (%)	N/A	N/A
Current Yield (%)	N/A	N/A
Holdings Count	N/A	N/A

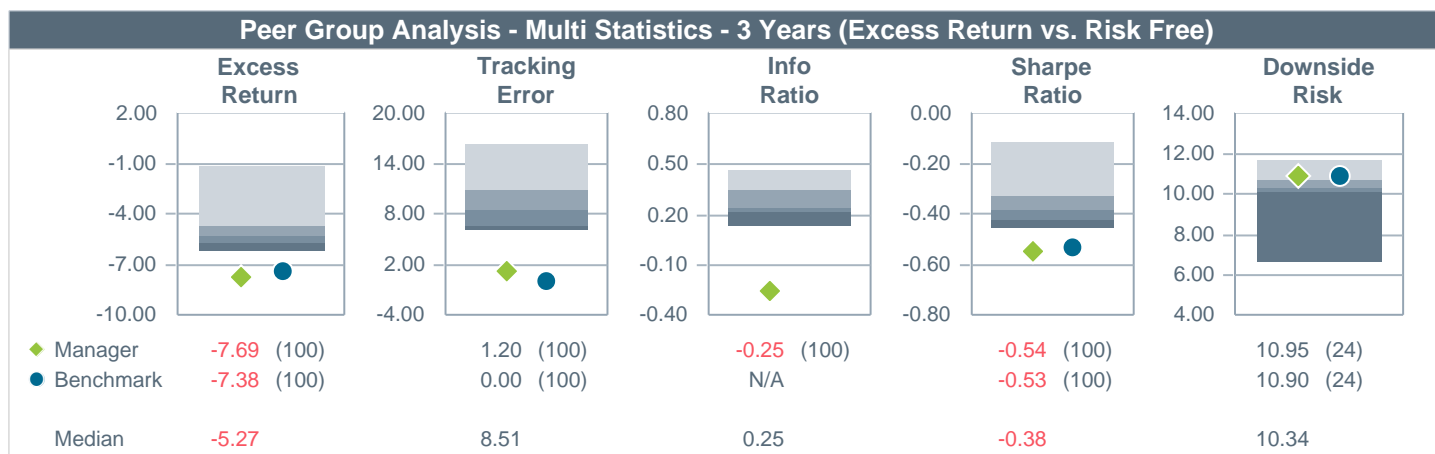
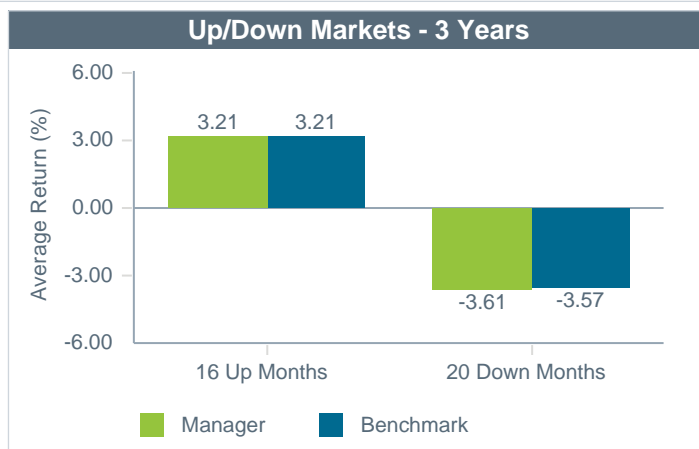
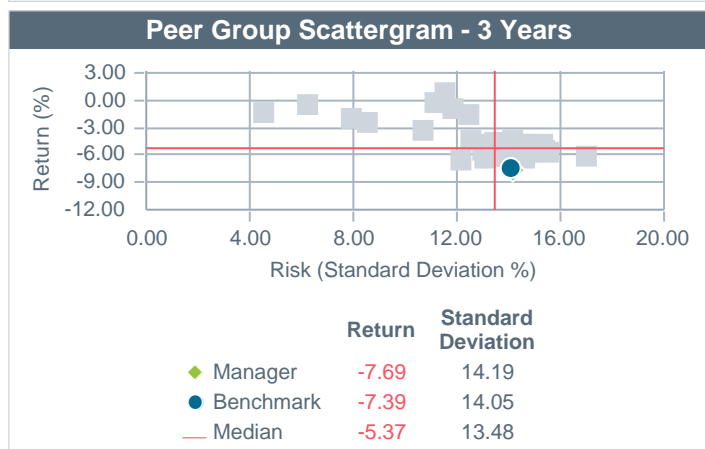


Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

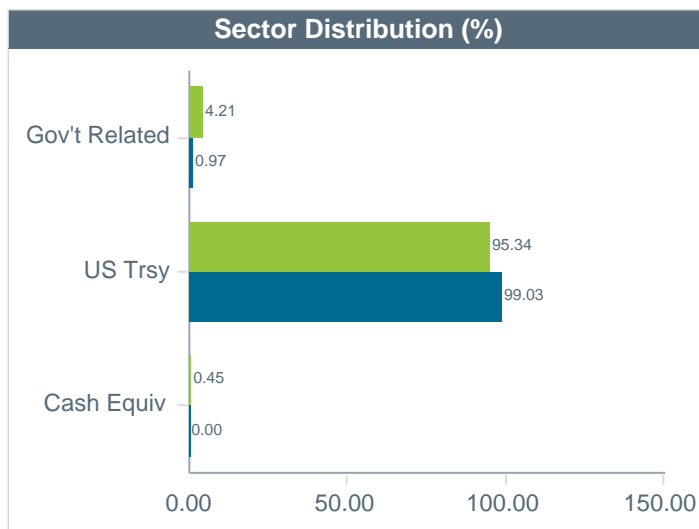
Manager: Internal Long Duration Fixed Income Portfolio
As of December 31, 2022
Benchmark: Bloomberg US Gov't Lng Trm Bond Index

Peer Group: IM U.S. Long Duration (SA+CF)

	Performance										
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-0.77	-28.92	-7.69	N/A	N/A	N/A	-5.46	17.06	14.61	N/A	N/A
Benchmark	-0.59	-29.19	-7.39	-2.19	-0.21	0.61	-4.57	17.55	14.75	-1.79	8.53
Difference	-0.18	0.27	-0.30	N/A	N/A	N/A	-0.89	-0.49	-0.14	N/A	N/A
Peer Group Median	2.69	-26.70	-5.37	-0.52	2.21	2.12	-1.72	17.11	20.23	-4.74	11.25
Rank	98	97	100	N/A	N/A	N/A	100	51	92	N/A	N/A
Population	58	58	57	56	51	47	63	64	67	77	79



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	N/A	16.15
Spread Duration	N/A	16.03
Avg. Maturity	N/A	23.14
Avg. Quality	N/A	Aaa/Aa1
Yield To Maturity (%)	N/A	4.09
Coupon Rate (%)	N/A	2.59
Current Yield (%)	N/A	N/A
Holdings Count	N/A	100



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

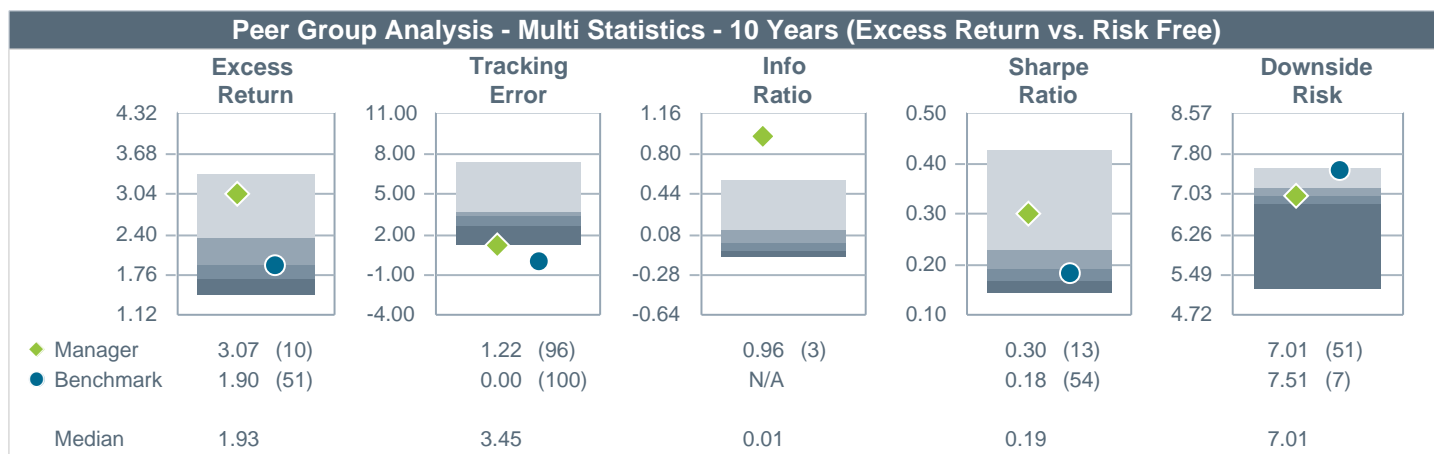
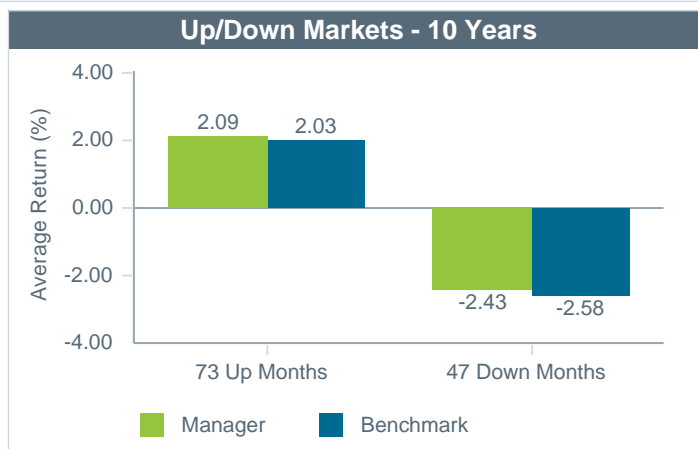
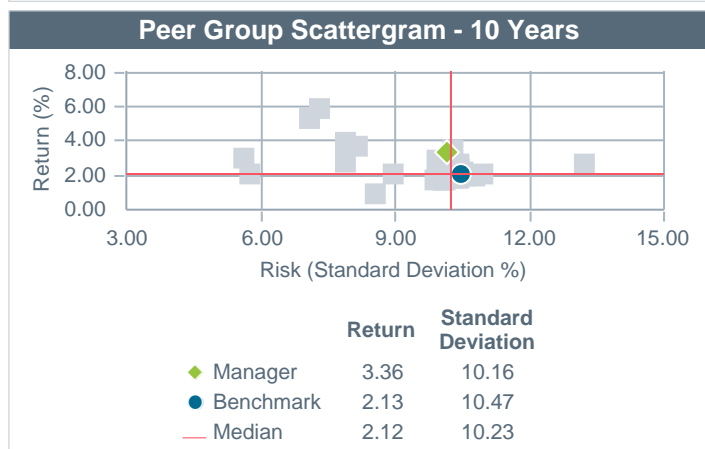
Manager: Metlife

As of December 31, 2022

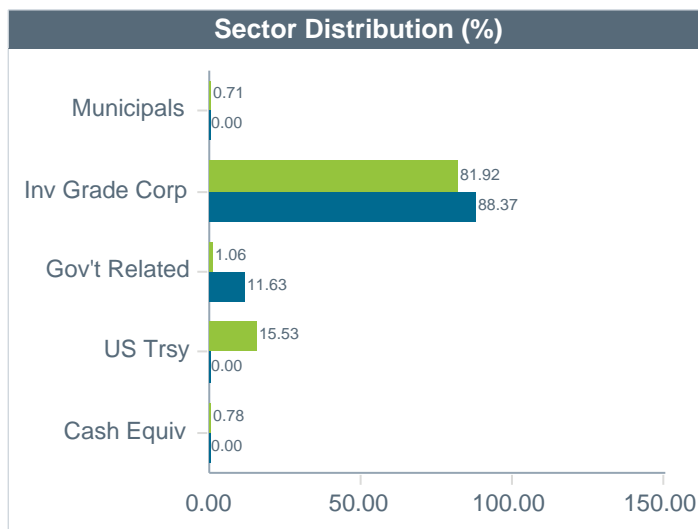
Benchmark: Bloomberg US Lng Crdt Index

Peer Group: IM U.S. Long Duration (SA+CF)

	Performance										
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	5.12	-25.33	-4.92	0.06	3.73	3.36	-1.09	16.37	23.73	-5.68	13.59
Benchmark	5.30	-25.29	-5.78	-0.77	2.52	2.13	-1.18	13.32	23.36	-6.76	12.21
Difference	-0.18	-0.04	0.86	0.83	1.21	1.23	0.09	3.05	0.37	1.08	1.38
Peer Group Median	2.69	-26.70	-5.37	-0.52	2.21	2.12	-1.72	17.11	20.23	-4.74	11.25
Rank	9	25	29	20	5	10	33	57	10	79	3
Population	58	58	57	56	51	47	63	64	67	77	79



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	13.02	12.81
Spread Duration	9.91	12.83
Avg. Maturity	21.33	23.00
Avg. Quality	A3	A2/A3
Yield To Maturity (%)	5.69	5.59
Coupon Rate (%)	4.70	4.41
Current Yield (%)	5.42	N/A
Holdings Count	306	3,165

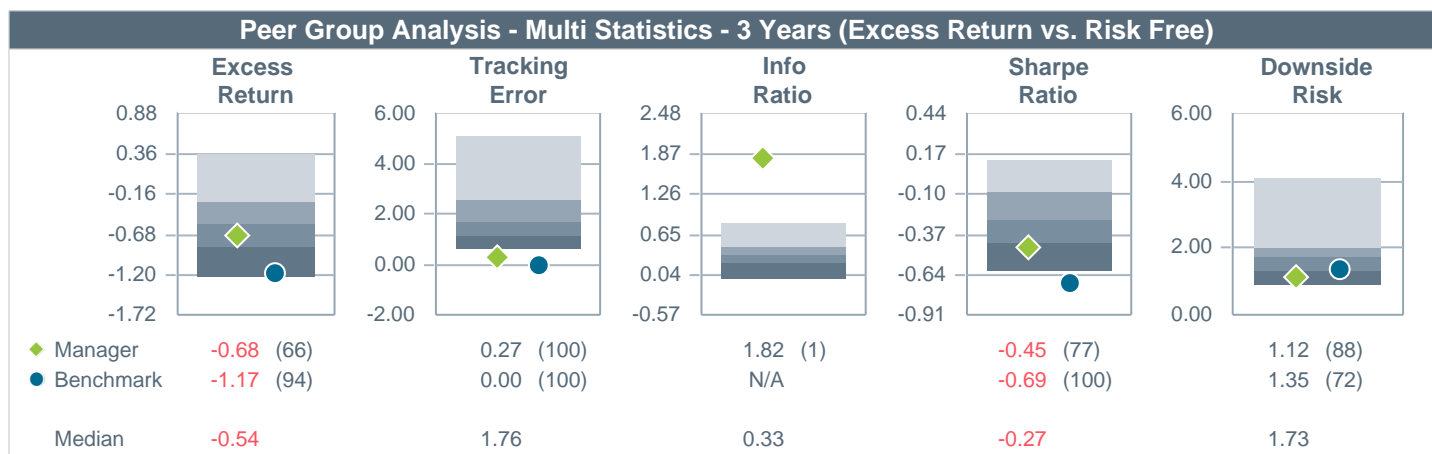
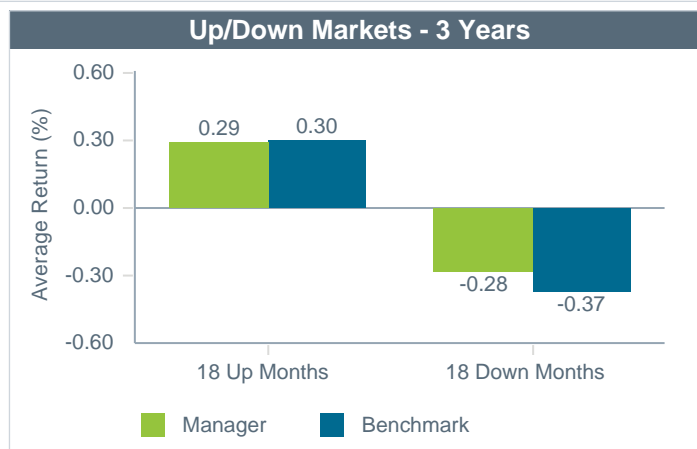
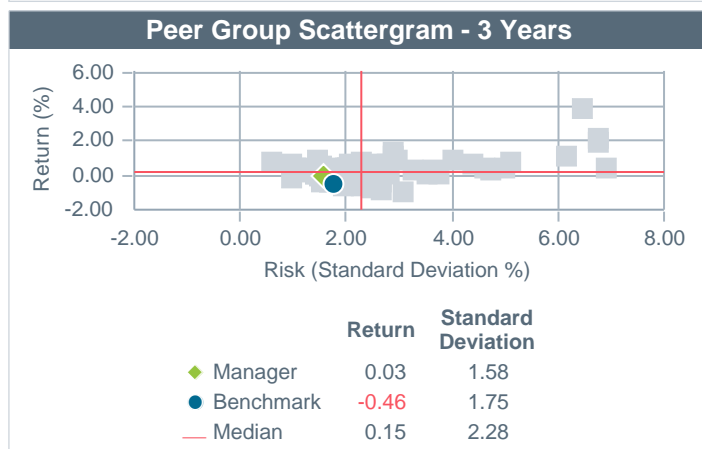


Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

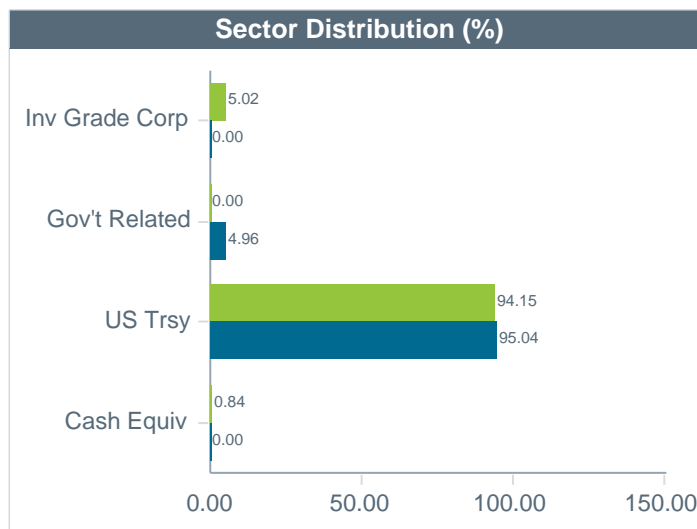
Manager: Internal Low Duration Fixed Income Portfolio
As of December 31, 2022
Benchmark: Bloomberg US Gov't 1-3 Yr Bond Index

Peer Group: IM U.S. Short Duration Fixed Income (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	0.80	-2.90	0.03	N/A	N/A	N/A	-0.06	3.14	3.80	N/A	N/A
Benchmark	0.73	-3.81	-0.46	0.74	0.72	0.66	-0.60	3.14	3.59	1.58	0.45
Difference	0.07	0.91	0.49	N/A	N/A	N/A	0.54	0.00	0.21	N/A	N/A
Peer Group Median	1.07	-3.37	0.15	1.28	1.38	1.25	-0.20	3.92	4.53	1.67	1.52
Rank	91	30	66	N/A	N/A	N/A	40	84	85	N/A	N/A
Population	110	110	105	103	96	86	117	122	125	134	134



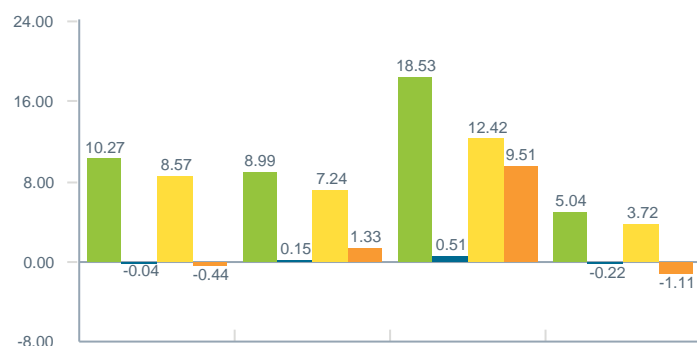
Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	N/A	1.87
Spread Duration	N/A	1.87
Avg. Maturity	N/A	1.95
Avg. Quality	N/A	Aaa/Aa1
Yield To Maturity (%)	N/A	4.50
Coupon Rate (%)	N/A	1.86
Current Yield (%)	N/A	N/A
Holdings Count	N/A	375



Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-13.58	-2.26	-3.00	0.26	2.71	N/A	0.97	-7.50	6.59	4.12	9.66
Benchmark	5.82	-9.44	-0.53	2.18	4.31	4.57	4.91	3.59	14.41	-1.08	8.41
Difference	-19.40	7.18	-2.47	-1.92	-1.60	N/A	-3.94	-11.09	-7.82	5.20	1.25

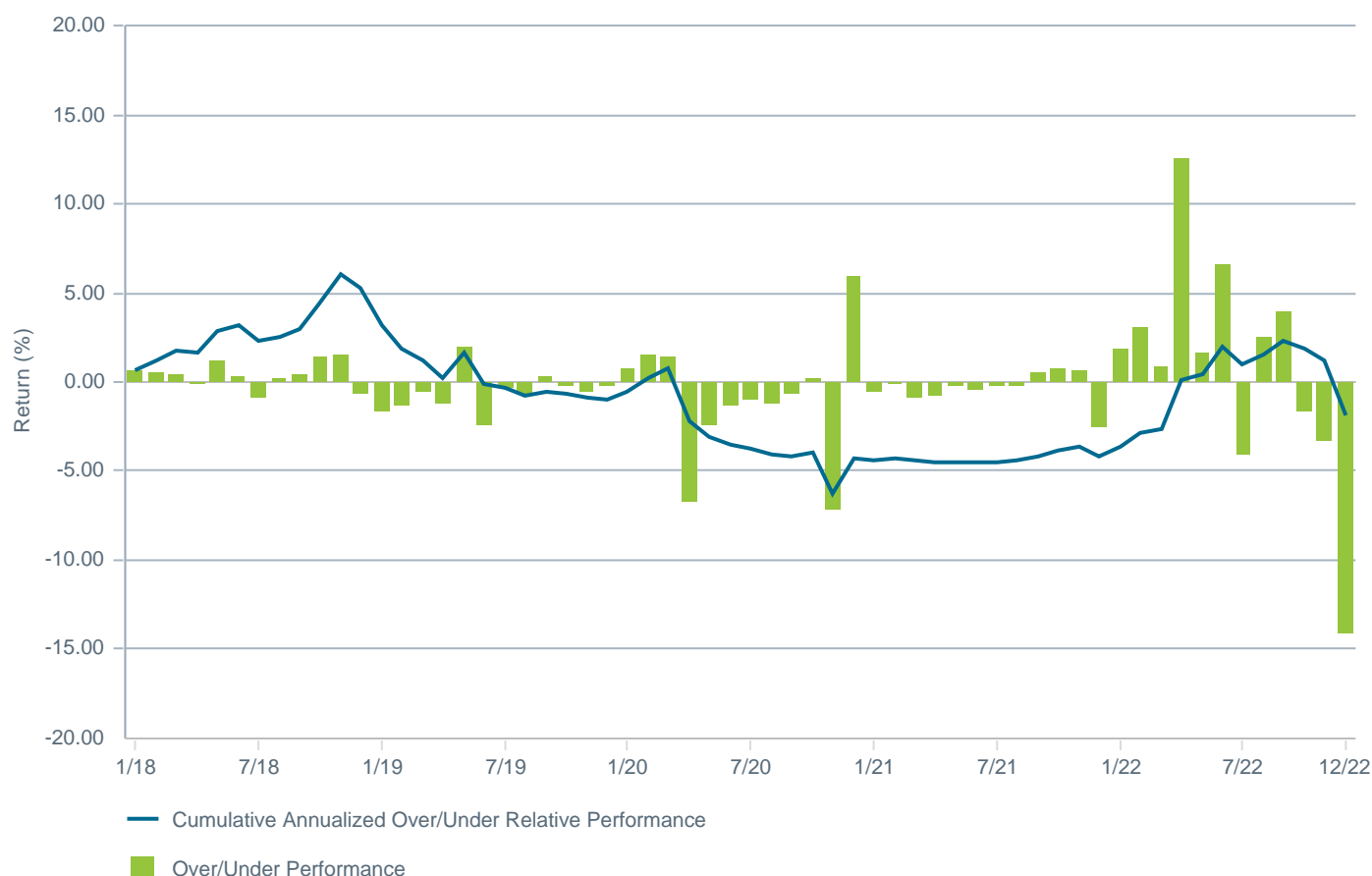
Historical Statistics - 5 Years (Excess Return vs. Risk Free)



Actual Correlation - 5 Years

	Actual Correlation
CS Western Euro Hi Yld Index	0.07
S&P 500 Index (Cap Wtd)	0.06
Russell 2000 Index	0.21
MSCI EAFE Index (USD) (Net)	-0.04
MSCI Emg Mkts Index (USD) (Net)	0.09
Bloomberg US Agg Bond Index	-0.42
Bloomberg US Trsy US TIPS Index	-0.39
NCREIF ODCE Index (AWA) (Gross)	0.47
Wilshire US REIT Index	0.11
HFRI FOF Comp Index	0.23
Bloomberg Cmtty Index (TR)	0.28
ICE BofAML 3 Mo US T-Bill Index	-0.45
Cons Price Index (Unadjusted)	0.37
CS Western Euro Hi Yld Index	0.07

Relative Performance - 5 Years



Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

State of Wyoming
State Loan and Investment Board
Investment Policy Objective Review

December 31, 2022

Investment Policy Guidelines	Meeting Objective			Explanation
	Yes	No	N/A	
1. Total Fund				
Exceed the rate of inflation (C.P.I.) over a market cycle of 5-years.	✓			Wyoming returned 3.8% vs. 3.8% for the C.P.I. for the current 5-year period
Exceed a weighted index of the total fund's asset allocation and component benchmarks over rolling 5-year periods by an appropriate amount.	✓			Wyoming returned 3.8% vs. 3.5% for the Total Fund Index for the current 5-year period
Not more than 1% of the outstanding common shares of any corporation shall be owned by the State. An exception may be made for Alternative Investments.	✓			
Not more than 1.5% of the total book value of permanent funds shall be invested in the common stock of any corporation. An exception may be made for Alternative Investments.	✓			

	Yes	No	N/A	Explanation
2. Investment Funds				
a) Permanent Mineral Trust Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Permanent Mineral Trust Fund return was 5.2% vs. 4.8% for the Total Fund Index
b) Common School Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Common School Permanent Land Fund return was 4.1% vs. 3.6% for the Total Fund Index
c) Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Permanent Land Fund return was 5.3% vs. 4.8% for the Total Fund Index
d) University Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: University Permanent Land Fund return was 5.5% vs. 4.9% for the Total Fund Index
e) Hathaway Scholarship Endowment Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Hathaway Scholarship Endowment Fund return was 5.6% vs. 4.7% for the Total Fund Index
f) Higher Education Endowment Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Higher Education Endowment Fund return was 3.9% vs. 3.5% for the Total Fund Index
g) Workers Compensation Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Workers Compensation Fund return was 3.3% vs. 2.8% for the Total Fund Index
h) Pool A				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Pool A return was 3.3% vs. 2.7% for the Total Fund Index
i) LSRA				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.			N/A	LSRA was funded during 2019.
j) State Agency Pool				
No public and/or private equities are permitted.	✓			
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: State Agency Pool return was 1.1% vs. 1.0% for the Actual Allocation Index

	Yes	No	N/A	Explanation
3. US Equity Portfolios				
a) State Street Global Advisors – All Cap – Passive				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Apple = 6.19%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Meet performance of the State Street All Cap Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.	✓			5-year: State Street return was 8.8% vs. 8.8% for the index
	Yes	No	N/A	Explanation
c) Internal Domestic Equity Quantitative – Broad US Equity				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Apple = 5.98%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Exceed performance of the S&P 500 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 06/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 06/2021

	Yes	No	N/A	Explanation
d) Van Berkom – Small Cap - Active				
The portfolio will achieve its goal primarily through the investment in a portfolio of 35 to 55 U.S. small-cap equity securities.	✓			
At the time of initial purchase, the market capitalization of the company's common stocks purchased will not exceed 0.023% of the total market capitalization of the S&P 500 Index. Furthermore, the Portfolio Manager may own up to 25% of the portfolio at market value in U.S. stocks that exceed 0.023% of the total market capitalization of the S&P 500 Index.	✓			
Individual Security = no more than 7% of account value Cash Position = no more than 5% of account value Sub-sector Limit = no more than 15% of the account value invested in a single sub-sector (Level IV of GICS sectors) GICS Sectors = minimum of 5 different GICS sectors (Level 1 GICS sectors)	✓			
Outperform the Russell 2000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2020
e) BlackRock Small Cap – Small Cap - Active				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Insperity Inc. = 1.5%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Outperform performance of the Russell 2000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 08/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 08/2020

	Yes	No	N/A	Explanation
f) Internal Small Cap Quantamental – Small Cap				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: IES Holdings Inc = 4.9%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Exceed performance of the Russell 2000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 06/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 06/2021
g) Internal Small Cap Quantitative – Small Cap				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Essent Group Ltd = 0.6%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Exceed performance of the Russell 2000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 11/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 11/2021

	Yes	No	N/A	Explanation
4. International Equity Portfolios				
a) Northern Trust – Int'l – Passive				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Nestle = 1.4%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Meet performance of the MSCI ACW Ex US Index (Net), before fees, over a full market cycle, approximated by the most recent five-year period.	✓			5-year: Northern Trust gross of fees return was 1.0% vs. 0.9% for the MSCI ACW Ex US Index (Net)
	Yes	No	N/A	Explanation
b) Arrowstreet – Int'l Active				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Samsung Electronics = 2.4%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Outperform the MSCI ACW Ex US IM Index (Net), net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
c) Harding Loevner – Int'l Active				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Ping An Insurance Group = 4.3%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Outperform the MSCI ACW Ex US Index (Net), net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2020

	Yes	No	N/A	Explanation
5. Preferred Stock				
a) Cohen & Steers				
Minimum issue credit rating for preferred stock at the time of purchase will be BB or equivalent.	✓			The portfolio currently holds securities which are rated below BB. Retention of these securities in the portfolio is permitted pursuant to Section 7.2 of the Investment Policy.
A maximum of 35% of the total portfolio of the investment manager may be invested in securities rated below investment grade.	✓			
A maximum of 10% of the total portfolio of the investment manager may be invested in any one issuer.	✓			
Outperform the Preferred Stock Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 07/2018
	Yes	No	N/A	Explanation
6. MLPs				
a) Harvest				
A maximum of 15% or the benchmark weighting + 2%, whichever is greater, of the total portfolio may be invested in any one company.	✓			
Outperform the MLP Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 08/2018
b) Harvest Passive				
A maximum of 15% or the benchmark weighting + 2%, whichever is greater, of the total portfolio may be invested in any one company.	✓			
Meet the MLP Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 02/2020

	Yes	No	N/A	Explanation
7. Alternative Strategies				
Core Real Estate				
a) Clarion Lion				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Clarion Lion net of fees return was 9.6% vs. 7.7% for the NCREIF ODCE Index (Net) (AWA)
The core portfolio shall consist of well-leased, high quality, income producing institutional properties.	✓			
The core portfolio shall be adequately diversified by geographical region, as well as by property type.	✓			
b) UBS Trumbull				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: UBS Trumbull net of fees return was 3.6% vs. 7.7% for the NCREIF ODCE Index (Net) (AWA)
The core portfolio shall consist of well-leased, high quality, income producing institutional properties.	✓			
The core portfolio shall be adequately diversified by geographical region, as well as by property type.	✓			
c) MS Prime				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 10/2020
The core portfolio shall consist of well-leased, high quality, income producing institutional properties.	✓			
The core portfolio shall be adequately diversified by geographical region, as well as by property type.	✓			
Diversified Hedge Funds				
d) Grosvenor Diversified Hedge Funds				
Outperform the HFRI FOF Comp Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2018
The portfolio shall be diversified across underlying hedge fund strategies and hedge fund managers.	✓			
e) Internal Diversified Hedge Funds				
Outperform the HFRI FOF Comp Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2018
The portfolio shall be diversified across underlying hedge fund strategies and hedge fund managers.	✓			
Infrastructure				
f) Macquarie				
Outperform the 10 Yr Treasury + 350 bps, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 04/2022
The core portfolio shall consist of high quality, income producing institutional properties.	✓			
The core portfolio shall be adequately diversified by geographical region, as well as by property type.	✓			

	Yes	No	N/A	Explanation
8. Fixed Income Portfolios				
a) PIMCO – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration may not exceed 120% of the manager's primary benchmark, and overall core fixed income portfolio duration may not exceed 120% of the Bloomberg Barclays U.S. Aggregate Bond Index.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Outperform its Custom Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: PIMCO net of fees return was 0.0% vs. -0.1% for the PIMCO Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: PIMCO ranked in the 85th percentile for Core Fixed Income

	Yes	No	N/A	Explanation
b) Internal Int. Govt Fixed Income Portfolio – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration may not exceed 120% of the manager's primary benchmark, and overall core fixed income portfolio duration may not exceed 120% of the Bloomberg Barclays U.S. Aggregate Bond Index.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Outperform the Internal Int. Gov Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Int. Govt Fixed Income Portfolio net of fees return was -0.3% vs. return of -0.4% for the Internal Int. Gov Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: Int. Govt Fixed Income Portfolio ranked in the 61st percentile for Government Fixed Income

	Yes	No	N/A	Explanation
c) Payden & Rygel – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration may not exceed 120% of the manager's primary benchmark, and overall core fixed income portfolio duration may not exceed 120% of the Bloomberg Barclays U.S. Aggregate Bond Index.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Outperform the Payden & Rygel Custom Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2019

	Yes	No	N/A	Explanation
d) JPM MBS – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.			N/A	
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.			N/A	
A minimum number of 25 securities shall be held.	✓			
Duration may not exceed 120% of the manager's primary benchmark, and overall core fixed income portfolio duration may not exceed 120% of the Bloomberg Barclays U.S. Aggregate Bond Index.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Outperform the Bloomberg US MBS Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2019

	Yes	No	N/A	Explanation
e) Credit Suisse – Bank Loans				
Obligations of specific issuers are subject to a 5% per issuer limit, excluding investments in commingled vehicles.	✓			
Duration must not exceed + 1 year of the S&P/LSTA Leveraged Loan 100 Index.	✓			
Average portfolio credit quality must be at least B or equivalent.	✓			
Minimum issue credit rating at the time of purchase shall be: a) CCC or equivalent for individual securities; and b) Securities that are not rated shall be, in the judgment of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Outperform the Bank Loans Index., net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 09/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 09/2019
	Yes	No	N/A	Explanation
f) Octagon – Bank Loans				
Obligations of specific issuers are subject to a 5% per issuer limit, excluding investments in commingled vehicles.	✓			
Duration must not exceed + 1 year of the S&P/LSTA Leveraged Loan 100 Index.	✓			
Average portfolio credit quality must be at least B or equivalent.	✓			
Minimum issue credit rating at the time of purchase shall be: a) CCC or equivalent for individual securities; and b) Securities that are not rated shall be, in the judgment of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Outperform the Bank Loans Index., net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 09/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 09/2019

	Yes	No	N/A	Explanation
g) KKR – Bank Loans				
Obligations of specific issuers are subject to a 5% per issuer limit, excluding investments in commingled vehicles.	✓			
Duration must not exceed + 1 year of the S&P/LSTA Leveraged Loan 100 Index.	✓			
Average portfolio credit quality must be at least B or equivalent.	✓			
Minimum issue credit rating at the time of purchase shall be: a) CCC or equivalent for individual securities; and b) Securities that are not rated shall be, in the judgment of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Outperform the Bank Loans Index., net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 10/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 10/2021

	Yes	No	N/A	Explanation
h) Grosvenor Silvery Lupine Fund – Opportunistic Fixed Income				
Outperform the CS Western European Hi Yld Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: net of fees return was 0.4% vs 2.2% for the index
	Yes	No	N/A	Explanation
i) Global Evolution – Emerging Market Debt (Local Currency)				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must not be more than + 20% of the index.	✓			
Average portfolio credit quality must be BB or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged), net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 02/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 02/2020

	Yes	No	N/A	Explanation
j) Global Evolution – Emerging Market Debt (Hard Currency)				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must not be more than + 20% of the index.	✓			
Average portfolio credit quality must be BB or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the JPM EMBIG Div Ex CCC (USD) Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 12/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 12/2020

	Yes	No	N/A	Explanation
k) Eaton Vance – Emerging Market Debt				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must not be more than + 20% of the index.	✓			
Average portfolio credit quality must be BB or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the JPM EMB (JEMB) Hard/Local 50/50 Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 01/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2021

	Yes	No	N/A	Explanation
I) Goldman Sachs – Emerging Market Debt (Corporate)				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must not be more than + 20% of the index.	✓			
Average portfolio credit quality must be BB or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the JPM CEMBI Broad Div Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 03/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2020

	Yes	No	N/A	Explanation
m) Finisterre – Emerging Market Debt				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must not be more than + 20% of the index.	✓			
Average portfolio credit quality must be BB or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the EMD 1/3 Blend Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 03/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2021

	Yes	No	N/A	Explanation
n) Wellington – Emerging Market Debt				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must not be more than + 20% of the index.	✓			
Average portfolio credit quality must be BB or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the 50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 09/2021
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 09/2021

	Yes	No	N/A	Explanation
o) Metlife – Long Duration Credit				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
A maximum of 30% of the portfolio may be invested in U.S. dollar denominated non-U.S. fixed income securities.	✓			
A maximum of 10% of the portfolio may be invested in U.S. dollar denominated emerging market securities.	✓			
A maximum of the appropriate benchmark plus 5% of the portfolio may be invested in convertible and municipal securities.	✓			
Average portfolio quality will be BBB+ or better. Securities shall be rated investment grade at time of purchase.	✓			
Outperform the Bloomberg US Long Credit Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2018
	Yes	No	N/A	Explanation
p) Internal Long Duration – Long Duration Government				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
A maximum of 30% of the portfolio may be invested in U.S. dollar denominated non-U.S. fixed income securities.	✓			
A maximum of 10% of the portfolio may be invested in U.S. dollar denominated emerging market securities.	✓			
A maximum of the appropriate benchmark plus 5% of the portfolio may be invested in convertible and municipal securities.	✓			
Average portfolio quality will be BBB+ or better. Securities shall be rated investment grade at time of purchase.	✓			
Outperform the Bloomberg US Gov Long Term Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 01/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2019

	Yes	No	N/A	Explanation
q) Internal Low Duration – Low Duration Government				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
Corporate securities will be subject to a maximum limit of 20%.	✓			
Portfolio duration must be within plus or minus 30% of the Bloomberg Barclays US Gov't: 1-3 Year Bond Index.	✓			
Average portfolio quality will be A or better.	✓			
Outperform the Bloomberg US Gov 1-3 Year Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 03/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
9. Cash and Cash Equivalents Portfolios				
JP Morgan Cash Composite*				
a) JP Morgan Treasury Cash				
The portfolio's weighted average maturity shall not exceed 90 days.	✓			
All securities shall have a maximum maturity of 365 days.	✓			
The maximum average cash flow weighted duration of the portfolio shall not exceed 90 days.	✓			
The market value of the portfolio shall remain within +/- 0.5% of 1.0% of amortized cost.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment in any single issuer must not exceed 5% of the outstanding issues of that issuer.	✓			
Investment performance must exceed Monitored Repurchase Agreement Rate and the cash equivalents allocation by the 90-day T-Bill rate, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 10/1996

*During the fourth quarter of 2011, JP Morgan Treasury Cash and JP Morgan Treasury Extended Cash were combined. Net of fees performance shown consists of performance calculated by RVK, Inc. prior to 12/31/2011 and performance calculated by JP Morgan thereafter.

	Yes	No	N/A	Explanation
JP Morgan Wyo-Star Cash Composite*				
b) JP Morgan Wyo-Star Cash				
The portfolio's weighted average maturity is not to exceed 90 days.	✓			
All securities must have a maximum maturity of 365 days.	✓			
The maximum average cash flow weighted duration of the portfolio must not exceed 90 days.	✓			
The market value of the portfolio must remain within +/- 0.5% of 1% of amortized cost.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment performance must exceed Monitored Repurchase Agreement Rate and the cash equivalents allocation by the 90-day T-Bill rate, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 10/1996
c) JP Morgan Wyo-Star Extended Cash				
Maximum average cash flow weighted duration is not to exceed 3 years.	✓			
Individual securities must not exceed a cash flow weighted duration of 5 years.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment Performance must exceed an Equal Weighted Blend of the BofA Merrill Lynch 1-3 Year Agency, 1-3 Year Treasury, and a 0-3 Year Mortgage Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: JP Morgan Wyo-Star Extended Cash net of fees return was 1.0% vs. 0.7% for the Blended Index
The extended portion of WYO-STAR may not exceed 35% of the market value of the portfolio at the time of purchase.	✓			

*During the fourth quarter of 2011, JP Morgan Wyo-Star Cash and JP Morgan Wyo-Star Extended Cash were combined. Net of fees performance shown consists of performance calculated by RVK, Inc. prior to 12/31/2011 and performance calculated by JP Morgan thereafter.

Addendum & Glossary



Custom Benchmark Comments

The Wyoming State Total Fund Index and Pool Total Fund Indices are calculated using target asset class weights applied to the appropriate asset class benchmark return, using the S&P 500 Index for US all cap equities, the Russell 2000 Index for US small cap equity, MSCI ACW Ex US Index (Net) for international equities, MLP Custom Index for MLPs, Bloomberg US Agg Bond Index for core fixed income, S&P/LSTA Lvg'd Loan 100 Index for bank loans, EMD Blended Benchmark for EMD, NCREIF Open-End Diversified Core Equity Index for real estate, Cambridge Index for private equity, HFRI FOF Comp Index for Diversified Hedge Funds, and ICE BofA Merrill Lynch 90 day US T-Bill rate for cash equivalents.

- The Wyoming State Total Fund Index is calculated using beginning month asset class weights applied to the appropriate asset class benchmark return through 12/31/2019. As of 01/01/2020, the Index is calculated using the weighted average of the respective Investment Funds' Target Allocation Indices.
- Pool Total Fund Indices consist of the actual allocation index through 12/31/2019, and the target allocation index thereafter.
- The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter.
- The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter.
- The International Equity Custom Index consists of the MSCI EAFE Index (USD) (Gross) through July 2010 and the MSCI ACW Ex US Index (USD) (Net) thereafter.
- The Preferred Stock Custom Index consists of S&P U.S. Preferred Stock Index through 06/30/2021, and 60% ICE BofAML US IG Inst Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index thereafter.
- The Internal Intermediate Govt Fixed Income Portfolio Index currently consists of the Bloomberg US Treasury Index. November 2019 performance consists of the Internal Intermediate Govt Fixed Income Portfolio. Prior to November 2019, the index consists of Bloomberg US Gov't Int Term Bond Index. Prior to December 2009, the index consisted of the Bloomberg US Gov't Crdt Bond Index.
- The PIMCO Custom Index consists of the Bloomberg US Agg Bond Index through February 2018, the Bloomberg US Agg Int Index through June 2019, the Bloomberg US Agg Bond Index through 03/26/2020, account performance from 03/27/2020 through 04/03/2020, the BB US Agg Index through 11/29/21, account performance from 11/29/21 through 12/07/21, the Bloomberg US Agg Bond Index through 06/30/2022, account performance on 7/1/2022, and the Bloomberg US Agg Bond Index thereafter.
- The Low Duration Fixed Income Custom Index consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.
- Transition Fixed Income Custom Index consists of 50% JPM CLOIE IG Idx, 40% BB 1 – 3 Yr Crdt, and 10% ICE BofA 0-2 Yr Dur BB-B Index.
- The State Street All Cap Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter.
- The EMD Custom Index consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvf'd Index, 1/3 JPM CEMBI Brd Dvf'd Index, and 1/3 JPM EMBI Gbl Dvf'd Index thereafter.
- The JP Morgan EMB (JEMB) Hard Currency/Local Currency 50/50 consists of 50% JPM GBI-EM Gbl Dvf'd Index, 25% JPM CEMBI Brd Dvf'd Index, and 25% JPM EMBI Gbl Dvf'd Index.
- The Goldman Sachs Index consists of JPM CEMBI Brd Dvf'd Index through 11/22/2020, account performance from 11/23/2020 through 11/30/2020, and the JPM CEMBI Brd Dvf'd Index thereafter.
- The Bank Loans Custom Index consists of S&P LSTA Lvgd Loan Index through 06/30/2021, and the S&P LSTA US Lvgd Loan 100 Index thereafter.
- The Payden & Rygel Custom Index consists of the Bloomberg US Corp Inv Grade Index through 03/25/2020, account performance from 03/26/2020 through 03/31/2020, and Bloomberg US Corp Inv Grade Index thereafter.
- Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.
- The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.
- The Wyo-Star Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. Currently, the primary benchmark for Wyo-Star Cash is the ICE BofAML 3 Mo US T-Bill Index and for Wyo-Star Extd is the JP Morgan Blended Index.

Performance & Holding Comments

RVK, Inc. shows performance beginning with the first full month following inception. Inception date shown for the Int'l Equity and JP Morgan Cash Composites represents the first date of performance calculated by RVK, Inc.

Performance shown for Pooled Funds is calculated on a capital-weighted basis using beginning-period allocations and does not reflect net cash flows.

Performance shown for the UW Portfolio Management Program prior to 07/01/2009 includes their participation in the State Agency Pool. Performance calculated for the UW Portfolio Management Program after 02/01/2013 has not been verified by RVK as the assets have been moved to a platform in which the custodian does not provide a reconcilable return.

Performance for the Internal Intermediate Govt Fixed Income Portfolio excludes distressed securities taken in-kind following the liquidation of WAMCO Core Plus.

Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.

Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark.

Composite performance shown for Fixed Income is historically exclusive of convertibles.

Alternative Investment Comments

Reporting for Private Equity performance was changed from cost basis to the latest portfolio valuation adjusted for cash flows, consistent with the supplementary alternatives report. This methodology change involved reflecting the difference between cost value and the most recent valuation, resulting in a significant positive performance impact on the total fund during 2nd quarter 2008.

Valuations for non-core real estate and private equity were changed from a one-quarter lag to as of the most recent valuation, adjusted for subsequent cash flows. This methodology change involved reflecting all cash flows occurring during 4th quarter 2011 as of January 2012, resulting in a minor positive performance impact on the total fund during 1st quarter 2012. Investment (Cost) Values are not lagged.

Performance for non-core real estate and private equity investments is calculated on an IRR basis. For further analysis, please refer to the supplementary alternatives performance report.

Cheyenne Capital Fund valuations set forth herein could be materially different once underlying investments are realized. Market conditions at the time of exit could be substantially different than at the reporting period, resulting in valuations different than those represented above.

Miscellaneous Comments

Wyoming State Treasurer's Office fiscal year ends on June 30th.

Fixed Income style peer groups have low populations, and may cause ranks to change significantly from quarter to quarter.

"IM" is the acronym for Investment Metrics, the provider of peer group data used in ranking investment manager and asset class performance.

During the 4th quarter of 2012, WAMCO Core Plus, Neuberger Berman Core Plus, PIMCO Core Plus, PIMCO Mortgages, JP Morgan Mortgages, WAMCO Corporates, Logan Circle, and PIMCO Global/EM began the liquidation process to transition assets to the State's new fixed income asset class structure. The proceeds were used to fund State Street TIPS, C.S. McKee, JP Morgan Core, MacKay Shields, Neuberger Berman Core, PIMCO Core, and Wells Capital. During the 1st quarter of 2013, additional assets were transitioned to Neuberger Berman Credit, Seix, Investec, and Stone Harbor.

During the 4th quarter of 2014, State Street S&P 500 and Gabelli began the liquidation process to transition assets to the State's new US equity asset class structure. The proceeds were used to fund State Street All Cap, Epoch, Lazard, and RBC. During the 1st quarter of 2015, additional assets were transitioned to Arrowstreet.

During the 4th quarter of 2015, the Workers Compensation Fund was reclassified as a Permanent Fund.

During the 1st quarter of 2016, the State funded the Internal International Equity Portfolio, using proceeds from the liquidation of The Boston Company.

During the 3rd quarter of 2016, Bloomberg acquired the Barclays Global Family of Fixed Income Indices. Naming conventions have been updated to "Bloomberg" to reflect the acquisition.

During the 3rd quarter of 2016, MacKay Shields began the liquidation process, with proceeds used to increase allocations to C.S. McKee and the Internal Intermediate Govt Fixed Income Portfolio.

During the 1st quarter of 2017, Neuberger Berman Core and Wells Capital began their respective liquidation processes.

During the 2nd quarter of 2017, Manning & Napier began the liquidation process.

During the 4th quarter of 2017, Lazard began the liquidation process.

During the 4th quarter of 2017, Intercontinental Exchange (ICE) acquired the BofA Merrill Lynch Global Research FICC index platform. As a result, all BofA Merrill Lynch indices have been rebranded to "ICE BofA Merrill Lynch".

Addendum

During the 1st quarter of 2018, Arrowstreet was reclassified as International Equity and the Internal Low Duration portfolio was funded.

During the 2nd quarter of 2018, Cohen & Steers, Grosvenor Diversified Hedge Funds, and Internal Diversified Hedge Funds were funded.

During the 2nd quarter of 2018, the Hybrid Assets Composite was created for convertibles, preferred stock, and MLPs.

During the 2nd quarter of 2018, RBC began the liquidation process.

During the 3rd quarter of 2018, Internal Equity Russell 2000 was funded.

During the 3rd quarter of 2018, Harvest was funded.

During the 4th quarter of 2018, Logan Circle, Internal Long Duration Fixed Income Portfolio, and State Street Low Duration were funded.

During the 1st quarter of 2019, Epoch began the liquidation process.

During the 2nd quarter of 2019, Allianz, Stone Harbor, Fisher, JPM Core, NB Credit, Seix, State Street TIPS, and State Street Low Duration began the liquidation process.

During the 3rd quarter of 2019, Credit Suisse, Octagon, and Internal Ladder Portfolio were funded.

During the 4th quarter of 2019, Harding Loevner, State Street Russell 2000, Harvest Passive, Payden & Rygel, and JPM MBS were funded, and CS McKee began the liquidation process.

During the 1st quarter of 2020, Van Berkomp was funded.

During the 2nd quarter of 2020, Grosvenor D was funded.

During the 3rd quarter of 2020, MS Prime and BlackRock Small Cap were funded.

During the 4th quarter of 2020, Eaton Vance and Global Evolution Hard were funded.

During the 1st quarter of 2021, Finisterre was funded.

During the 2nd quarter of 2021, Domestic Equity Quantamental, Domestic Equity Quantitative, and Small Cap Equity Quantamental were funded.

During the 3rd quarter of 2021, KKR and Wellington were funded.

During the 4th quarter of 2021, Pimco Low Duration was funded.

During the 1st quarter of 2022, Macquarie was funded.

During the 2nd quarter of 2022, Accel KKR was funded.

During the 3rd quarter of 2022, Morgan Stanley Ashbridge Secondaries II, Passive Large Cap Equity, Passive Core Fixed Income, International Equity ETF, Opportunistic, and MGIF were funded.

During the 4th quarter of 2022, Atalaya Evergreen Fund, BlackRock Global Credit Opportunities Fund II, and Octagon SMA were funded.

INVESTMENT MANAGER PEER GROUP GLOSSARY

IM U.S. All Cap Equity (SA+CF): The **U.S. All Cap Equity** universe includes products with a higher growth bias, products with a higher value bias, and products where the investment strategy permits investments in both value and growth equity securities across the complete Russell 3000 market cap spectrum.

IM U.S. Large Cap Core Equity (SA+CF): The **U.S. Large Cap Core Equity** universe includes products where the investment strategy can best be described as benchmark driven rather than style driven and can include a blend of both value and growth considerations. The weighted average market cap is in excess of \$10 billion.

IM U.S. Small Cap Core Equity (SA+CF): The **U.S. Small Cap Core Equity** universe includes products where the investment strategy can best be described as benchmark driven rather than style driven and can include a blend of both value and growth considerations. The weighted average market is between \$300 million and \$2 billion.

IM All ACWI ex US (SA+CF): The **All ACWI ex US** universe includes products where the investment strategy can be best described as benchmark driven and includes products investing in growth and value securities across the MSCI ACW Ex US Index.

IM U.S. Broad Mkt Core Fixed Income (SA+CF): The **U.S. Broad Mkt Core Fixed Income** universe includes products where the portfolio weighted average duration is greater than or equal to 4 years and less than 6 years. The average maturity can be between 3 and 8 years. The allocation to high yield bonds or emerging market debt is less than or equal to 5%.

IM Emerging Markets Debt (SA+CF): The **Emerging Markets Debt** universe includes products where the combined market allocation to emerging market debt in Asia, Africa/Europe and Latin America is approximately 75% or more. The JP Morgan Emerging Markets Bond and EMBI+ are commonly used benchmarks.

IM U.S. Government Bonds (SA+CF): The **U.S. Government Bonds** universe includes products where the investment style focuses on government bonds and the sector allocation to them is greater than or equal to 75%. The Barclays Capital U.S. Government or Government: Intermediate are commonly used benchmarks.

IM U.S. Short Duration Fixed Income (SA+CF): The **U.S. Short Duration Fixed Income** universe includes products where the portfolio weighted average duration is greater than or equal to 1 year and less than 2.5 years. The average maturity is between 1 and 3 years.

IM U.S. Long Duration Fixed Income (SA+CF): The **U.S. Long Duration Fixed Income** universe includes products where the portfolio weighted average duration is greater than or equal to 6 years. The average maturity can be greater than 6 years.

IM U.S. Bank Loans (SA+CF): The **U.S. Bank Loans** universe includes products where the sector allocation to bank loans is greater than or equal to 75%. The S&P/LSTA Leverage Loan Index or Credit Suisse Leveraged Loan Index are commonly used benchmarks.

Glossary

Active Return - The difference between the investment manager/composite performance relative to the performance of an appropriate market benchmark.

Active Share - Measures the degree to which the holdings of a fund differ from the holdings of the benchmark. Active share is calculated by taking the sum of the absolute value of the differences of the weight of each holding in the fund versus the weight of each holding in the benchmark and dividing by two.

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Alpha Ratio - A measure of a portfolio's non-systematic return per unit of downside risk. It is measured by dividing the alpha of a portfolio by the downside risk. The non-systematic return is a measure of a portfolio's historical performance not explained by movements of the market.

Average Quality - Bond quality ratings are reported using the investment managers' and the index providers' preferred rating agency. *Average Quality for managers unable to provide this statistic is instead provided by Morningstar; if unavailable on Morningstar, it has been estimated using a credit quality distribution provided by the manager.* There are two primary rating agencies in the US. *Moody's* assigns ratings on a system that employs up to four symbols (consisting of letters and numbers), such as, Aaa, Aa2, etc., with Aaa being the highest or safest rating. *Standard & Poor's (S&P)* employs a system that uses + and - along with letters, such as AAA, AA+, etc. The two rating agencies' systems are summarized below:

<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>	<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>
Higher Credit Quality – Investment Grade			Lower Credit Quality – Below Investment Grade		
AAA	Aaa	Prime/Highest credit quality	BB+	Ba1	Speculative/Low credit quality
AA+	Aa1	High credit quality	BB	Ba2	
AA	Aa2		BB-	Ba3	
AA-	Aa3		B+	B1	Highly speculative
A+	A1	Upper-medium credit quality	B	B2	
A	A2		B-	B3	
A-	A3		CCC+	Caa1	Substantial credit/default risk
BBB+	Baa1	Lower-medium credit quality	CCC	Caa2	Extremely speculative
BBB	Baa2		CCC-	Caa3	
BBB-	Baa3		CC	Ca	Vulnerable to default
			C	Ca	
			D	C	In default

Benchmark Effect - The difference between the blended return of each respective managers' benchmark within a composite and the composite's benchmark return.

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Box Plots - A graphical representation of the distribution of observations. From top to bottom, the four boxes represent the spread between the maximum value and the minimum value in each quartile. A quartile represents the values that divide the observations into four quarters (i.e., 1st quartile, 2nd quartile, 3rd quartile, and 4th quartile). The median observation is where the 2nd quartile and 3rd quartile meet.

Buy and Hold Attribution - At the beginning of the time period under analysis, the manager and benchmark portfolios are broken down into segments (i.e., styles, sectors, countries, and regions) based on the desired type of attribution. The formula assumes zero turn-over to the manager and benchmark portfolios throughout the period and calculates the segment returns ("buy and hold returns") to arrive at performance attribution. Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark. Country, region, sector, and style allocations are as of the date one quarter prior to the reporting date, and the returns shown are for those segments throughout the quarter reported. Due to disclosure guidelines set by each investment manager, equity characteristics shown are as of the most recent date available. The following is the methodology for segment classification:

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS), which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector as defined by S&P Capital IQ data. Attribution to "other" is the result of securities based in industries that do not fit into any GICS classification.

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data, and thus may differ from the classification of the investment manager and/or index provider. Attribution to "other" is the result of securities based in countries/regions that do not fit into any MSCI classification.

Style - Stocks are classified into the following style boxes: large/mid/small vs. growth/neutral/value. Stocks are classified along large/mid/small categories at the time of the Russell index rebalancing, using the index market cap boundaries as cutoff points. Stocks are classified along growth/neutral/value categories at the time of the Russell index rebalancing, using the price/book ratio as supplied by S&P Capital IQ. Stocks in the Russell 3000 Index portfolio are sorted by price/book ratio; names with the highest price/book ratio that make up 1/3 of the total market capitalization are assigned to the growth category, and names that make up the subsequent 1/3 of the total market capitalization are assigned to the neutral category, while the balance of the names are assigned to the value category. Stocks are unclassified when there is not enough data to determine a size and style metric.

Portfolio Characteristics and Buy and Hold Attribution reports utilize product-specific data for all mutual funds and commingled funds.

Capital Markets Review -

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflation-linked maturity curve and the yield of the closest nominal Treasury maturity.

Consumer Confidence - Measures domestic consumer confidence as defined by the degree of optimism on the state of the economy that consumers express through saving and spending.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

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- Federal Funds Rate** - The interest rate at which a depository institution lends funds maintained at the Federal Reserve to another depository institution overnight. It is one of the most influential interest rates in the US economy, since it affects monetary and financial conditions, which in turn have a bearing on key aspects of the broad economy including employment, growth and inflation.
- Option-Adjusted Spread** - Measures the flat spread of an index or bond to the Treasury yield curve after removing the effect of any embedded options.
- Purchasing Managers Index (PMI)** - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.
- Real Gross Domestic Product (Real GDP)** - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.
- Unemployment Rate** - The percentage of the total labor force that is unemployed but actively seeking employment.
- US Dollar Total Weighted Index** - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.
- VIX** - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."
- Cash Flow Effect** - The composite's active return minus the sum of each managers' active return minus the benchmark effect.
- Consistency** - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.
- Convexity** - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.
- Correlation** - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.
- Coupon Rate** - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.
- Current Yield** - The annual income of a security divided by the security's current price.
- Down Market Capture** - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.
- Downside Risk** - A measure similar to standard deviation that focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative returns for the selected periodicity. The higher the factor, the riskier the product.
- Earnings Per Share** - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.
- Effective Duration** - The approximate percentage change in a bond's price for a 100 basis point change in yield.
- Excess Return vs. Market** - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.
- Excess Return vs. Risk Free** - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) over a specified time period, shown on an annualized basis.
- Excess Risk** - A measure of the standard deviation of a portfolio's performance relative to the risk-free return.
- Expense Ratios** - Morningstar is the source for mutual fund expense ratios.
- Gain/Loss** - The net increase or decrease in the market value of a portfolio excluding its Net Cash Flow for a given period.
- Indices** - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used, or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability, and/or completeness.
- Information Ratio** - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager.
- Liability Driven Investing (LDI)** - A method to optimally structure asset investments relative to liabilities. The change in liabilities is estimated by the Ryan Labs Generic PPA Index of appropriate duration for that Plan. This benchmark is based on generic data and is therefore an approximation. RVK is not an actuarial firm, and does not have actuarial expertise.
- Estimated Funded Status** - The estimated ratio of a Plan's assets relative to its future liabilities. This is calculated by dividing the Plan's asset market value by the estimated present value of its liabilities. The higher the estimated funded status, the better the Plan's ability to cover its projected benefit obligations. An estimated funded status of 100% indicates a Plan that is fully funded.
- Estimated PV of Liabilities** - An estimate of a Plan's future liabilities in present value terms. The beginning of the period liability is provided by the Plan's actuary. The period-end present value liability estimate provided in this report is derived by applying the estimated percentage change generated using the Ryan Labs Generic PPA Index with duration similar to that reported on the most recent actuarial valuation report.
- Duration of Liabilities** - The sensitivity of the value of a Plan's liabilities to changes in interest rates, as calculated by the Plan's actuary.
- Duration of Assets** - The dollar-weighted average duration of all the individual Plan assets.
- Estimated Plan Hedge Ratio** - The estimate of how well a Plan's investment portfolio is hedged against changes in interest rates - a primary driver of funded status movements. This is calculated by dividing the dollar-weighted values of both the Plan asset duration by the liability duration and

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multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.

Modified Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield, assuming the bonds' expected cash flows do not change.

Mutual Fund Performance - Whenever possible, manager performance is extended for any share class that does not have 10 years of history. Using Morningstar's methodology, a single ticker within the same fund family (often the oldest share class) is chosen to append historical performance.

Net Cash Flow - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.

Peer Groups -

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client performance compiled from consultant and custodian data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans.

Investment Manager Peer Groups - RVK utilizes Investment Metrics' Peer Groups for investment manager peer comparison and ranking. The Investment Metrics Peer Group database includes performance and other quantitative data for over 840 investment management firms and 29,000 investments products, across more than 160 standard peer groups. Mutual Fund Peer Groups are net of fees.

Percentile Rankings - Percentile rank compares an individual fund's performance with those of other funds within a defined peer group of managers possessing a similar investment style. Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

1 - Highest Statistical Value

100 - Lowest Statistical Value

Example: American Funds AMCP;R-4 (RAFEX) is ranked in the 4th percentile within the IM US Equity Large-Cap Growth Funds (MF) Peer Group for the Sharpe Ratio. Within the IM US Equity Large-Cap Growth Funds peer group, 4% of the other funds performed better than American Funds AMCP;R-4 (RAFEX), while 96% of the funds performed worse.

Performance Methodology - RVK calculates performance for investment managers and composites using different methodologies.

Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of $\geq 10\%$ of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

Composites - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Portfolio Characteristics - Due to disclosure guidelines set by each investment manager, portfolio characteristics shown are as of the most recent date available.

Price to Earnings Ratio - The ratio valuing a company's current share price relative to its trailing 12-month per-share earnings (EPS).

Private Equity Quartile Ranks - Private Equity quartile ranks are generated using vintage year peer group data provided by Thomson Reuters, and are based on each fund's annualized, since inception internal rate of return (IRR). Three Private Equity peer groups are available via Thomson Reuters: Buyout, Venture, and All Private Equity. Ranks are available quarterly, at a one-quarter lag.

R-Squared - The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio's performance to the appropriate benchmark.

Return - Compounded rate of return for the period.

% Return - The time-weighted rate of return of a portfolio for a given period.

Risk Free Benchmark - ICE BofAML 3 Mo US T-Bill Index unless specified otherwise.

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RVK Liquidity Rating - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

<u>Asset Class</u>	<u>RVK Liquidity Rating</u>	<u>Asset Class</u>	<u>RVK Liquidity Rating</u>
<u>Liquid Investments</u>		<u>Less Liquid Investments</u>	
T-Bills and Treasuries	100	Fixed Income Plus Sector	50
Cash Equivalents	98	Stable Value (Plan Sponsor Directed)	50
TIPS	95	Hedge Funds of Funds	35
US Large Cap Equity	95		
Diversified Real Return	93		
Stable Value (Participant Directed)	91		
Global Equity	90	<u>Not Liquid Investments</u>	
Non-US Large Cap Equity	90	Core Real Estate	25
Global Tactical Asset Allocation	88	Core Plus Real Estate	15
MLPs	85	Non-Core Real Estate	5
US Mid Cap Equity	85	Private Equity	5
US SMid Cap Equity	85	Private Credit	5
US Small Cap Equity	85		
REITs	85		
Non-US Small Cap Equity	85		
Emerging Markets Equity	85		
Core Fixed Income	85		
Core Plus Fixed Income	80		

Sector Allocation - Negative fixed income sector allocation reflects manager's use of derivatives, short selling, or interest rate swaps.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return to the risk free asset. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Simple Alpha - The difference between the manager's return and the benchmark's return.

Spread Duration - The approximate percentage change in a bond's price for a 100 basis point change in its spread over a Treasury of the same maturity.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha, Capital Appreciation, Capital Preservation, and Inflation:

<u>Alpha</u>	<u>Capital Appreciation</u>	<u>Capital Preservation</u>	<u>Inflation</u>
Absolute Return Strategies	Public Equity	Core Fixed Income	TIPS
Currency Overlay	Private Equity	CMBS Fixed Income	Bank Loans
	Preferred Securities	Asset Backed Fixed Income	Core Real Estate
	High Yield	Domestic Core Plus Fixed Income	Real Return
	Convertible Fixed Income	Mortgage Backed Fixed Income	Inflation Hedges
	TALF Funds	International Developed Fixed Income	REITs
	Distressed Debt	Cash Equivalents	Commodities
	Emerging Market Fixed Income	Stable Value	
	Value Added Real Estate		
	Opportunistic Real Estate		

Time Period Abbreviations - **QTD** - Quarter-to-Date. **CYTD** - Calendar Year-to-Date. **FYTD** - Fiscal Year-to-Date. **YOY** - Year Over Year.

Total Fund Attribution - The Investment Decision Process (IDP) model provides an approach to evaluating investment performance that applies to all asset classes and investment styles. The IDP model is based on a top-down hierarchy framework of investment decisions, with each decision contributing to the overall profit or loss. The IDP approach starts from the strategic asset allocation and follows the flow of the investments down to the manager's skill.

Strategic Asset Allocation (SAA) - The percentage return gained or lost from the long-term strategic asset allocation decision, the most significant determinant of long-term performance. SAA is the product of the target asset allocation multiplied by the corresponding benchmark returns.

Tactical Asset Allocation (TAA) - The percentage return gained or lost from not having been precisely allocated at the target asset allocation mix, whether by deviations that are tactical in nature or a by-product of moving towards the target mix. TAA is the product of the actual asset allocation multiplied by the broad asset class benchmarks, less the SAA.

Style Selection (SS) - The percentage return gained or lost from intentional style biases within each asset class (e.g. value rather than core or overweight to emerging markets relative to benchmark). SS is the product of the actual manager allocation within each asset class multiplied by their specific benchmark, less TAA.

Manager's Skill (MS) - The percentage return gained or lost from manager value added relative to their specific benchmark. MS is the product of the actual manager allocation multiplied by their achieved excess return.

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.



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Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Treynor Ratio - Similar to Sharpe ratio, but focuses on beta rather than excess risk (standard deviation). Treynor ratio represents the excess rate of return over the risk-free rate (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of \$100, growing at the compounded rate of %Return for a given period.

Up Market Capture - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolio's return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return. The 30-Day SEC Yield is similar to the Yield to Maturity and is reported for mutual funds.

Yield to Worst - The bond yield calculated by using the worst possible yield taking into consideration all call, put, and optional sink dates.

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