



# Quarterly Investment Performance Analysis

Wyoming State Treasurer's Office

Period Ended: September 30, 2022





## Memorandum

To	Wyoming State Loan and Investment Board
From	RVK, Inc.
Subject	Investment Performance Analysis – Summary of Contents
Date	September 30, 2022

To assist in your review of the Investment Performance Analysis for the quarter ended September 30, 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

*THIRD QUARTER 2022*

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## Memorandum

To	Wyoming State Loan and Investment Board
From	RVK, Inc.
Subject	Investment Performance Analysis Commentary
Date	September 30, 2022

Outlined below please find a summary of significant observations regarding performance of the State's Funds for the period ended September 30, 2022. We hope this summary will facilitate your review of our Investment Performance Analysis Report.

The Total Fund returned -2.4% net of fees during the third quarter as public equity and risk assets produced negative returns. Long-term performance for the Total Fund remains strong, with the State earning returns of 4.2% and 4.0% per annum over the trailing seven- and ten-year periods.

Absolute results were negative for all of the State's investment pools, however each pool outperformed or kept pace with their respective benchmark during the quarter. The State's non-permanent funds generated higher returns on an absolute basis, but lower returns on a relative basis, compared to the State's permanent funds.

The Bloomberg US Aggregate Bond Index returned -4.8% in the quarter, one of the lowest on record. Diversification away from core US bonds had mixed results as low duration, EMD, and Bank Loans outperformed the broad market, while long duration underperformed. The State's core fixed income managers outperformed the broad market index, collectively returning -4.7%. Core, Opportunistic, EMD, and low duration outperformed their respective benchmarks during the quarter.

Large-cap stocks fell most sharply, followed by mid-cap stocks. The only exception was small-cap growth stocks, which had slightly positive returns. Overall, in a reversal of the style trend during the first half of the year, growth stocks outperformed value stocks during the quarter. The State's All Cap equity composite modestly outperformed its index during the quarter, but the Small Cap US equity composite underperformed its respective index.

Emerging markets underperformed developed international markets in Q3 with the MSCI EM Index returning -11.6%. The State's international equity composite returned -9.1% during the quarter, outperforming the MSCI ACW Ex US Index by 0.8%. Passively managed strategies within the State's international equity portfolio kept pace with their respective benchmarks,

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while Harding Loevner outperformed its benchmark by 2.6%.

MLPs generated positive absolute returns during the quarter. Harvest Active and Harvest Passive returned 6.6% and 3.7%, respectively. While Cohen & Steers Preferred Stock returned -1.6% in the quarter but outperformed its benchmark by 0.5%.

Core real estate generated a slightly positive return during the quarter. The State's core real estate composite earned 0.2% in the quarter, underperforming the NCREIF ODCE Index by 0.1%. Clarion earned 0.5%, outperforming by 0.2%, while UBS and MS Prime underperformed by 0.5% and 0.4%, respectively.

Diversified hedge funds returned 0.1% during the quarter, outperforming the HFRI FOF Composite Index by 0.4%. Grosvenor Diversified Hedge Funds and Internal Diversified Hedge Funds returned 0.5% and -0.2%, respectively.



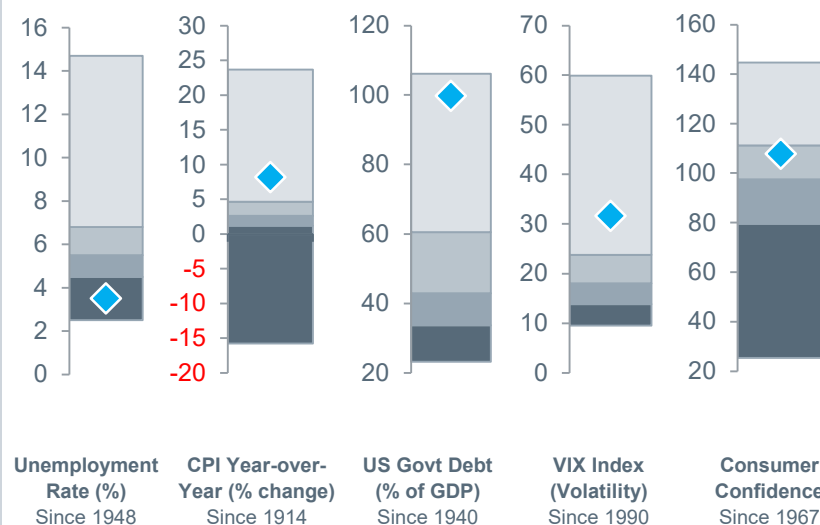
# Capital Markets Review



## Third Quarter Economic Environment

Investor sentiment and market movements continued to be driven by persistently high inflation levels and a corresponding tightening of monetary policy by most global central banks. Strong consumer demand, combined with supply chain disruptions and energy supply constraints caused by the war in Ukraine, exacerbated the difficulties for policymakers aiming to respond to inflation in an effective yet balanced manner. In its interim September 2022 economic outlook, OECD forecasted that headline inflation among G20 countries would finish 2022 above 8%—and only moderate to 6.6% in 2023. The OECD's inflation forecasts remain elevated compared to historical levels despite actions by global central banks, including the FOMC. In September, the FOMC increased the federal funds rate to a range of 3.00%-3.25%, which represented a third consecutive 0.75 percentage point hike. Global GDP growth forecasts continued to moderate during the quarter. The OECD forecasted real global GDP growth of 3.0% in 2022 and 2.2% in 2023, representing sharp declines from its December 2021 forecasts of 4.5% and 3.2%, respectively. Overall, economic and inflation forecasts are being impacted by multiple factors. In particular, the ongoing war in Ukraine could lead to sudden shifts in conditions, as global economic impacts could follow modifications to sanctions regimes, changes to external military support, pending NATO membership applications, or extreme energy supply shortages in Europe.

## Key Economic Indicators



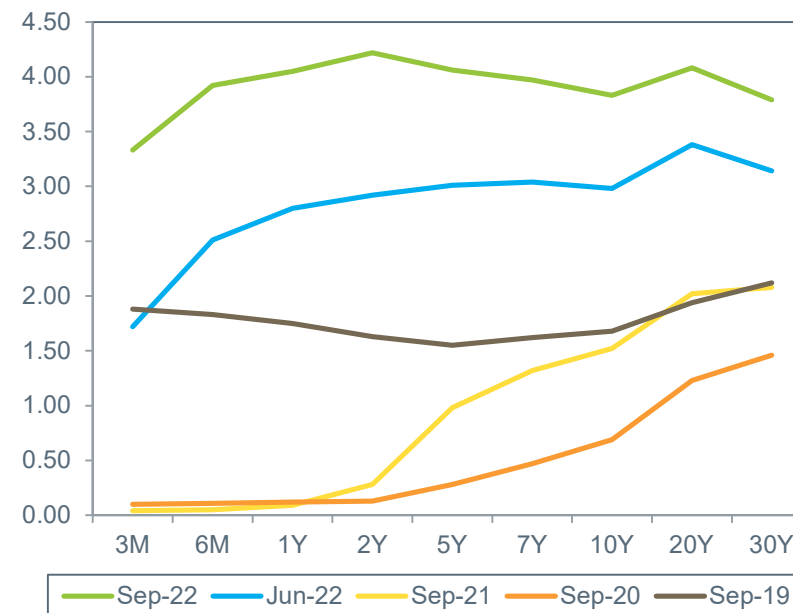
## Economic Indicators

	Sep-22	Jun-22	Sep-21	Sep-19	20 Yr
Federal Funds Rate (%)	3.08 ▲	1.58	0.06	1.90	1.27
Breakeven Infl. - 5 Yr (%)	2.16 ▼	2.62	2.53	1.35	1.91
Breakeven Infl. - 10 Yr (%)	2.15 ▼	2.34	2.38	1.52	2.07
CPI YoY (Headline) (%)	8.2 ▼	9.1	5.4	1.7	2.4
Unemployment Rate (%)	3.5 ▼	3.6	4.7	3.5	6.0
Real GDP YoY (%)	1.8 =	1.8	5.0	2.3	2.0
PMI - Manufacturing	50.9 ▼	53.0	60.5	48.1	53.7
USD Total Wtd Idx	127.64 ▲	121.05	114.67	117.95	103.22
WTI Crude Oil per Barrel (\$)	79.5 ▼	105.8	75.0	54.1	67.2
Gold Spot per Oz (\$)	1,661 ▼	1,807	1,757	1,472	1,143

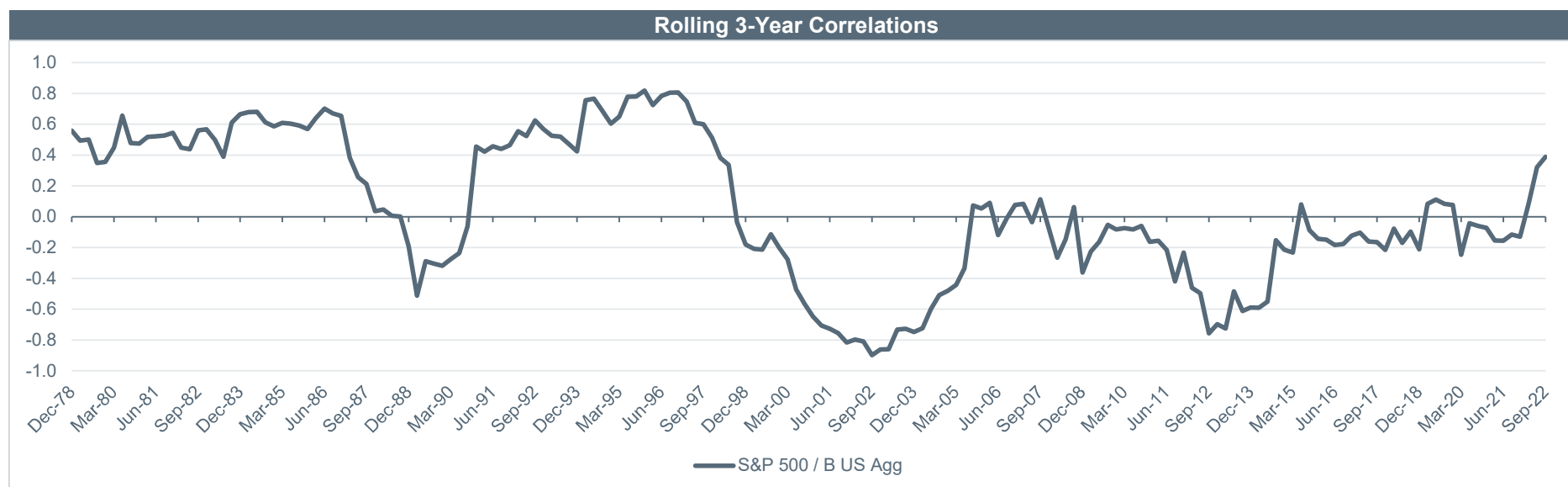
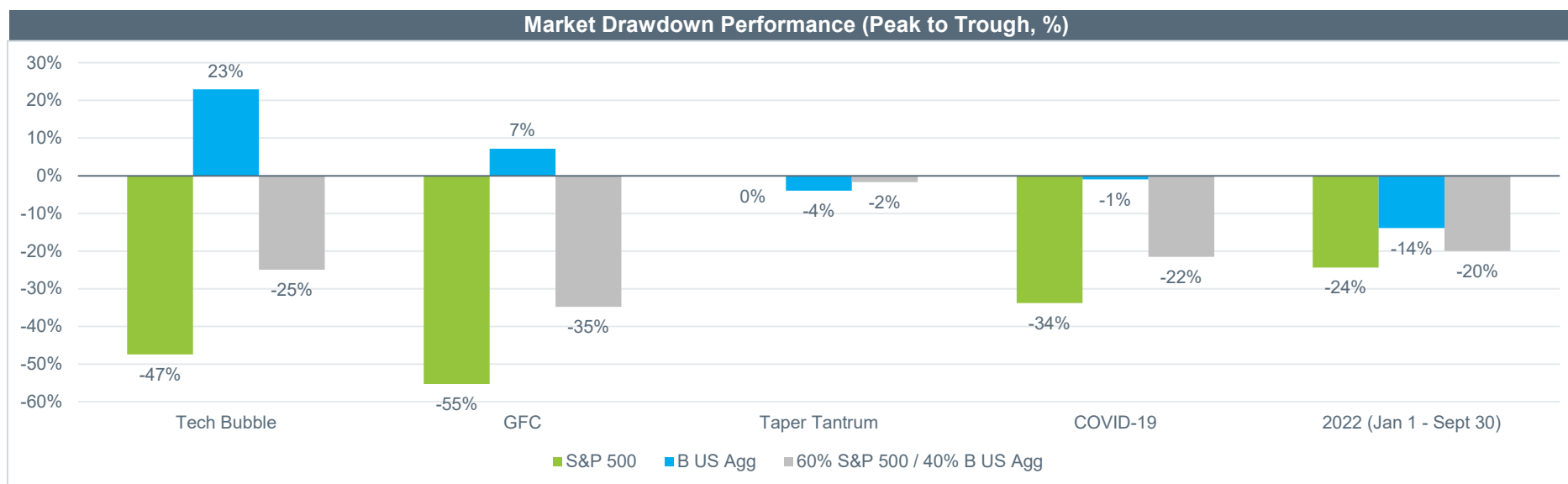
## Market Performance (%)

	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	-4.88	-23.87	-15.47	9.24	11.70
Russell 2000	-2.19	-25.10	-23.50	3.55	8.55
MSCI EAFE (Net)	-9.36	-27.09	-25.13	-0.84	3.67
MSCI EAFE SC (Net)	-9.83	-32.11	-32.06	-1.79	5.28
MSCI Emg Mkts (Net)	-11.57	-27.16	-28.11	-1.81	1.05
Bloomberg US Agg Bond	-4.75	-14.61	-14.60	-0.27	0.89
ICE BofAML 3 Mo US T-Bill	0.46	0.61	0.62	1.15	0.68
NCREIF ODCE (Gross)	0.52	13.08	22.09	10.24	10.92
FTSE NAREIT Eq REIT (TR)	-9.94	-28.13	-16.41	2.93	6.26
HFRI FOF Comp	-0.41	-6.97	-6.57	3.06	3.46
Bloomberg Cmdty (TR)	-4.11	13.57	11.80	6.96	-2.14

## Treasury Yield Curve (%)







Source: FactSet

Drawdown performance shown is cumulative. 2022 drawdown returns use a start (peak) date of January 1, 2022 and will differ slightly from CYTD returns.

Correlation is calculated using quarterly periodicity.

## Third Quarter Review

## Broad Market

US equity markets continued elevated volatility in Q3. Following three consecutive calendar years with returns above 20.0%, the Russell 3000 Index has declined -24.6% year-to-date. Consumer discretionary and energy sectors provided investors with positive returns, while all other sectors were negative.

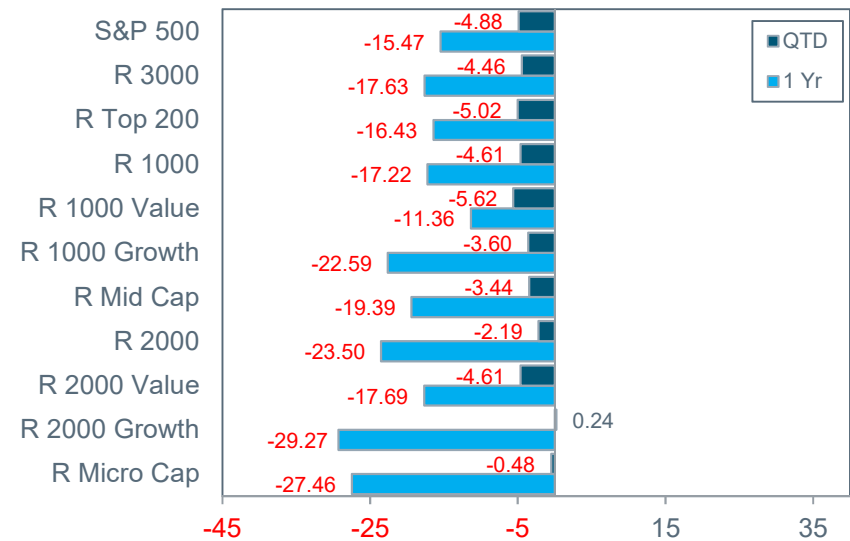
## Market Cap

Large-cap stocks fell most sharply, followed by mid-cap stocks. The only exception was small-cap growth stocks, which had slightly positive returns. Overall, in a reversal of the style trend during the first half of the year, growth stocks outperformed value stocks during the quarter.

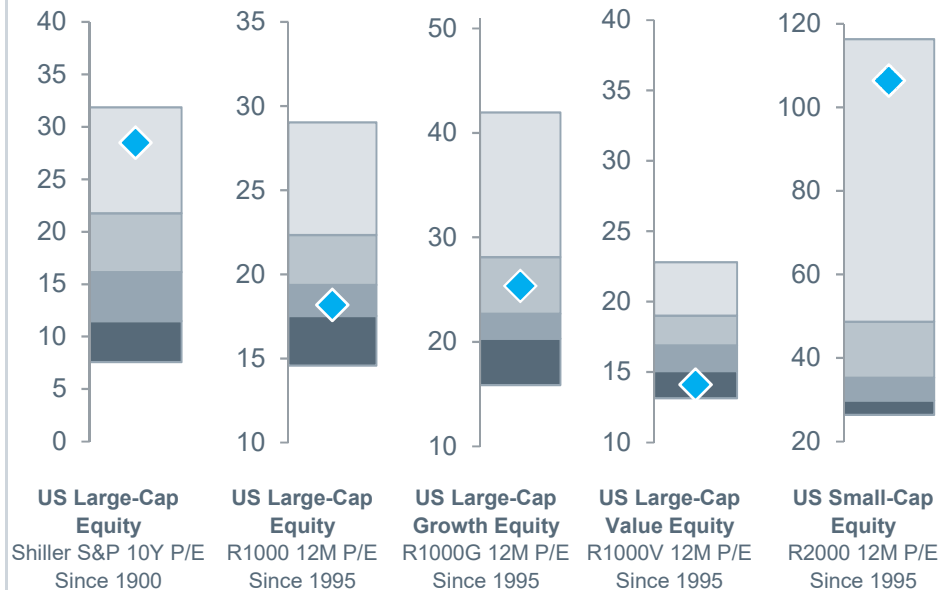
## Style and Sector

Value-oriented managers had a higher success rate than core or growth managers, on average. Mid - and small-cap manager success rates versus their respective benchmarks have been higher than large-cap managers, especially among value-oriented managers.

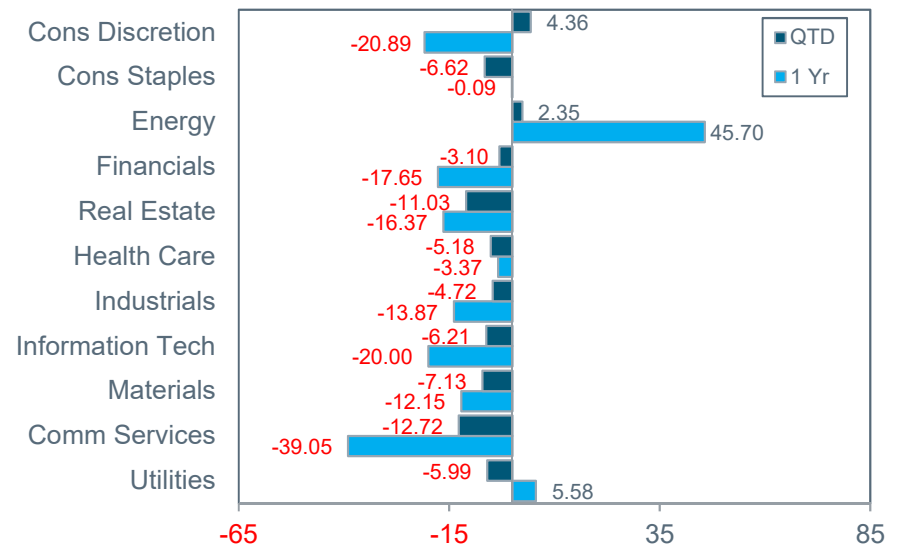
## Style and Capitalization Market Performance (%)



## Valuations



## S&amp;P 500 Index Sector Performance (%)



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, Irrational Exuberance, Second Edition.  
P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

## Third Quarter Review

## Developed Markets

Developed international stocks significantly lagged domestic stocks during Q3. Developed international growth stocks outperformed value stocks, and small-cap stocks marginally trailed large-cap stocks. European stocks slightly trailed other developed regions, although the returns of individual European countries continued to vary widely. Countries with the closest energy ties to Russia, such as Germany, faced significant sentiment headwinds. Japan, which has been largely unaffected by energy supply disruptions, was a relative bright spot among the largest developed international countries.

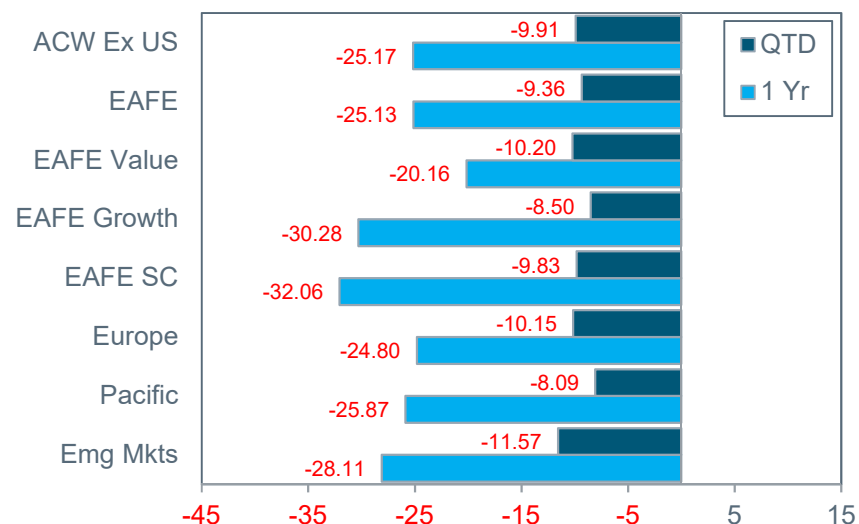
## Emerging Markets

Emerging markets underperformed developed international markets in Q3 with the MSCI EM Index returning -11.57%. Nearly all emerging market countries experienced negative returns.

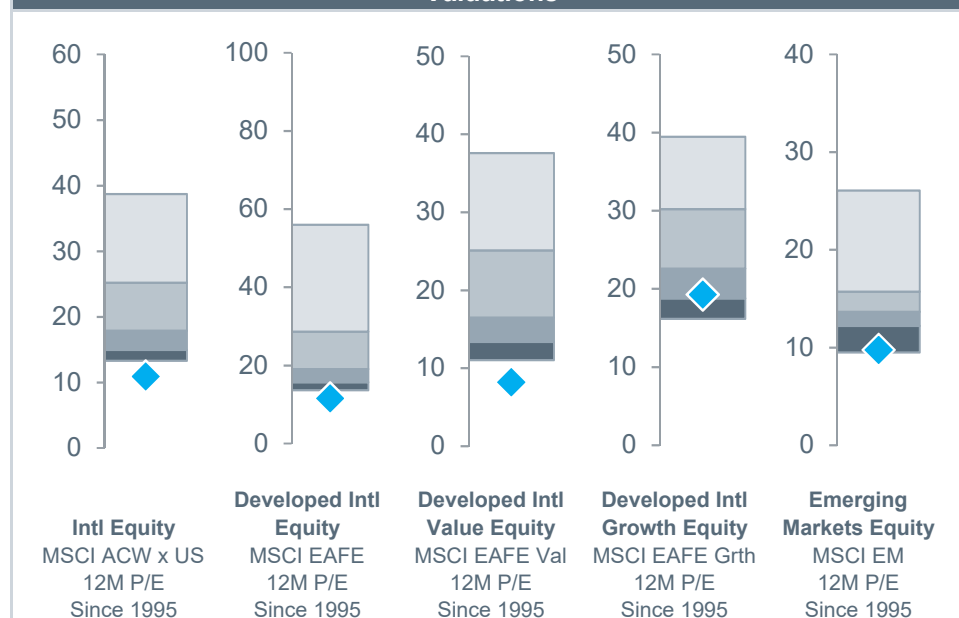
## Market Cap &amp; Style

In international markets, growth stocks outperformed value, while large-cap stocks trailed small by a wide margin.

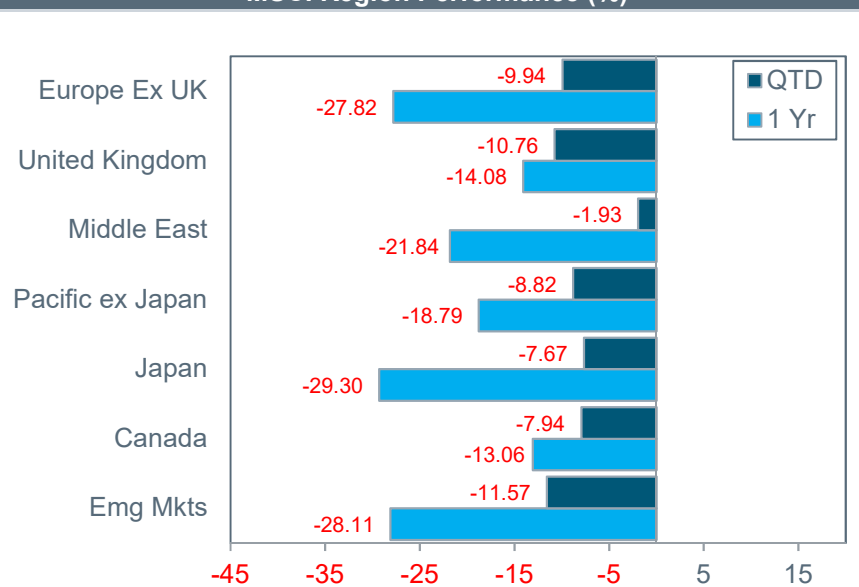
## MSCI Style and Capitalization Market Performance (%)



## 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.

## Third Quarter Review

## Broad Market

In Q3, the 10-year US Treasury yields rose 85 basis points from 2.98% to 3.83%. The Federal Reserve hiked the Federal Funds rate by 75 basis points twice during the quarter, as the FOMC continued to repond to inflationary pressures. The Bloomberg US Aggregate Bond Index ended Q3 with a return of -4.8%.

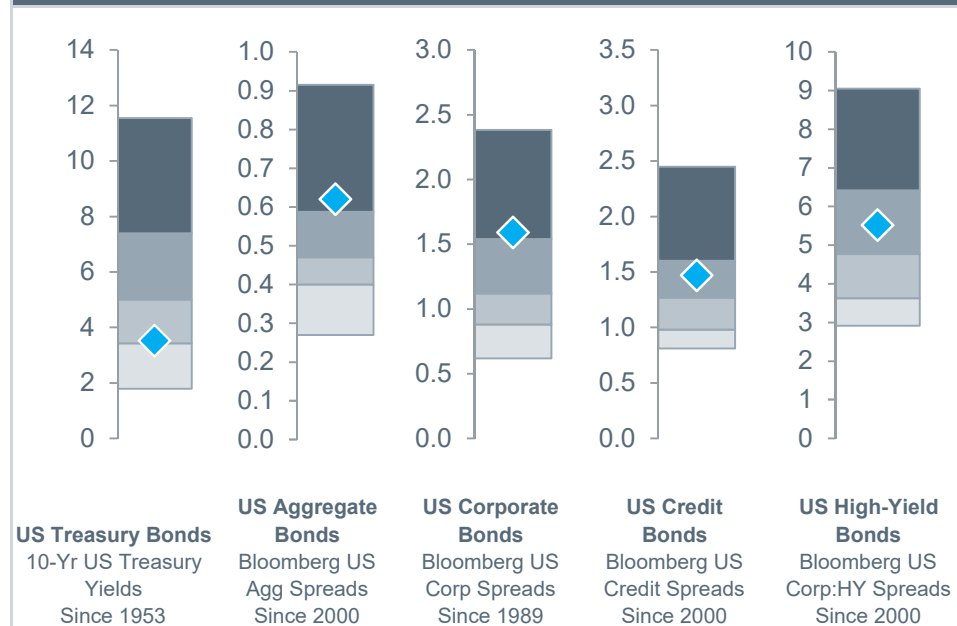
## Credit Market

Investment grade underperformed both high yield and bank loans, which have relatively less interest rate sensitivity.

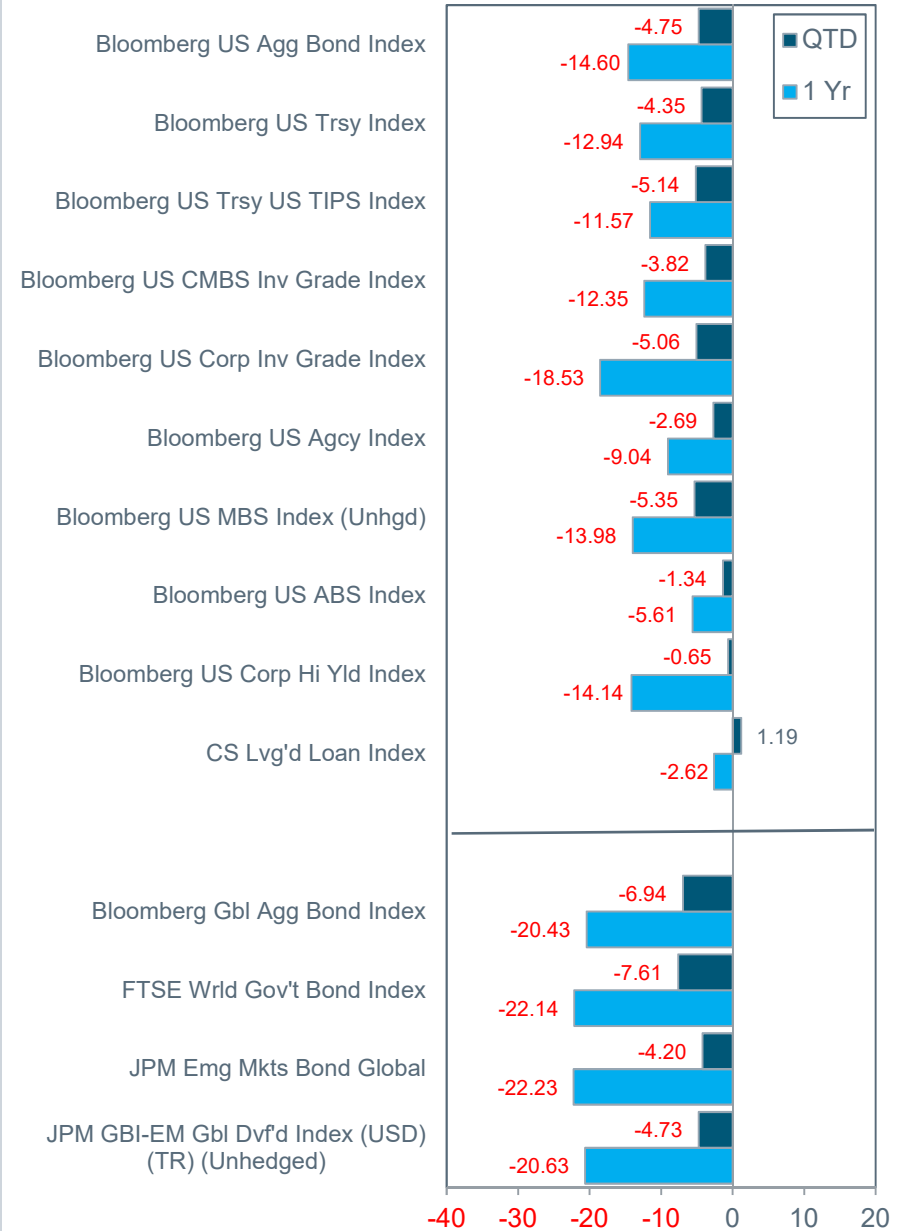
## Emerging Market Debt

Emerging market debt continues to experience headwinds from the ongoing Russia-Ukraine war and US Dollar strength. Hard currency emerging market bonds declined -4.6%, while foreign developed market debt declined -10.0%, as measured by the JPM EMBI Global Diversified Index and the FTSE Non-US WGBI (Unhedged) Index, respectively.

## 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.

### Third Quarter Review - Absolute Return

#### General Market - Hedge Funds

Dispersion continued to be the theme across hedge fund strategies during Q3. Consistent with the first six months of the year, Macro and Trend Following strategies produced positive results, taking advantage of continued upward trends in global interest rates and the US dollar. The HFRI Macro Index returned 1.7% in Q3, while the SG Trend Index rose 5.1%. For the year, Trend Followers are now up 35.6%, massively outperforming the rest of the hedge fund industry.

#### General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies that RVK follows closely posted losses for the second consecutive quarter. Given US dollar strength and a relatively strong quarter for US equity compared to other risk asset classes, nearly all active managers providing broader diversification underperformed a US-centric blend of 60% equity and 40% fixed income. The top-performing long-biased GTAA strategies were those that have been including meaningful market neutral, idiosyncratic relative valuation exposures.

### Third Quarter Review - Real Assets

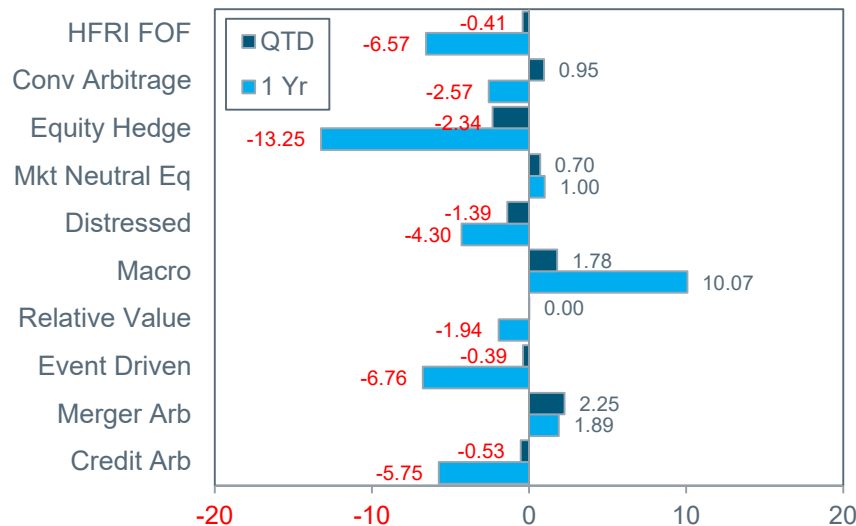
#### General Market - Diversified Inflation Strategies (DIS)

Despite headwinds that have affected nearly all asset classes, Diversified Inflation Strategies (DIS) tracked closely by RVK have outperformed a US-centric blend of 60% equity and 40% fixed income for the quarter and year. After responding positively to record inflationary pressures in Q1, DIS again posted losses for the second consecutive quarter ranging from the negative mid-single digits to negative low double digits.

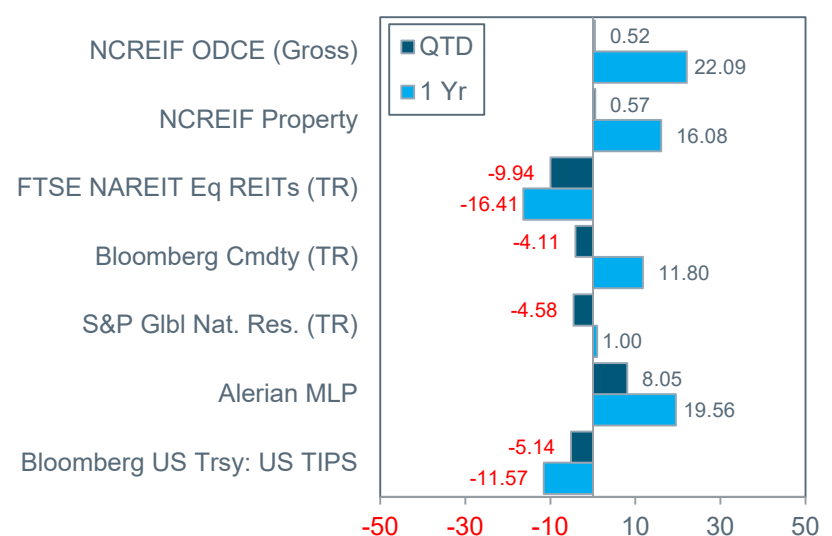
#### General Market - Real Estate

Core private real estate generated a positive 0.5% return in Q3 (on a preliminary and gross of fee basis), as reported by the NFI-ODCE Index, with a return contribution of 0.8% from income and -0.3% from price appreciation. The income return continues to trend at the lower end of historical levels while price appreciation turned negative. Investors of publicly traded real estate significantly underperformed their private market counterparts. Publicly traded real estate delivered a return of -11.2% in Q3, as measured by FTSE/NAREIT All REITs Index.

### HFRI Hedge Fund Performance (%)



### Real Asset Performance (%)





										Sharpe Ratio			Annualized Statistics (02/2006 - 09/2022)			
										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 9/22)	S&P 500 Index - US Large Cap			S&P 500 Index - US Large Cap			
	14.07	15.02	21.95	27.19	10.40	31.49	21.68	39.92	15.55	Russell 2000 Index - US Small Cap			Russell 2000 Index - US Small Cap			
	13.69	6.01	21.31	21.83	8.35	25.53	19.96	39.33	13.08	International Equity Custom Index - International			International Equity Custom Index - International			
	12.50	5.47	13.24	18.44	1.87	21.51	18.40	28.71	0.61	Cambridge US PE Index - Private Equity			Cambridge US PE Index - Private Equity			
	11.40	1.38	11.96	15.21	0.44	17.64	10.88	22.17	-3.41	NCREIF ODCE Index - Real Estate			NCREIF ODCE Index - Real Estate			
	7.66	0.55	10.16	14.65	0.01	13.82	10.65	14.82	-4.23	HFRI FOF Comp Index			HFRI FOF Comp Index			
	5.97	0.18	9.94	9.11	-4.02	13.47	7.97	7.82	-6.91	Preferred Stock Custom Index			Preferred Stock Custom Index			
	4.89	-0.27	8.77	7.77	-4.25	8.72	7.51	6.17	-14.81	MLP Custom Index			MLP Custom Index			
	3.37	-0.69	4.50	7.62	-4.38	8.64	3.12	5.71	-14.68	Bloomberg US Agg Bond Index - Fixed Income			Bloomberg US Agg Bond Index - Fixed Income			
	1.60	-4.41	2.65	4.12	-6.21	8.39	1.50	4.66	-19.60	Bank Loans Custom Index			Bank Loans Custom Index			
	0.18	-5.66	1.94	3.54	-11.01	7.55	1.19	0.05	-23.87	EMD Custom Index			EMD Custom Index			
	-3.87	-14.92	0.51	0.84	-11.67	5.34	0.67	-1.88	-25.10	JP Morgan Cash Custom Index - Cash Equiv			JP Morgan Cash Custom Index - Cash Equiv			
	-5.72	-35.07	0.38	-5.58	-14.20	2.47	-25.60	-3.26	-26.50							

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 Lvqd Loan Index through 06/30/2021, and the S&P LSTA US Lvqd Loan 100 Index thereafter.

The EMD Custom Index consists of the JPM GBI-EM Gbl Dvfd Index through 02/29/2020, 70% JPM GBI-EM Gbl Dvfd Index / 30% JPM CEMBI Brd Dvfd Index thereafter through 11/30/2020, and 1/3 JPM GBI-EM Gbl Dvfd Index, 1/3 JPM CEMBI Brd Dvfd Index, and 1/3 JPM EMBI Gbl Dvfd 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 structures. Investments also include exposure to direct co-investments and secondaries. Recent commitments within this asset class have added global diversification to the portfolio.

**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 **JPMorgan 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 September 30, 2022

Asset Allocation & Performance			
	Allocation		Performance (%)
	Market Value (\$)	%	FYTD
<b>Total Fund</b>	<b>23,329,020,086</b>	<b>100.00</b>	<b>-2.38</b>
<b>All Cap US Equity Composite</b>	<b>1,500,317,323</b>	<b>6.43</b>	<b>-4.80</b>
State Street All Cap	1,431,568,125	6.14	-4.89
Domestic Equity Quantamental	68,642	0.00	-1.40
Domestic Equity Quantitative	68,643,700	0.29	-3.92
Internal Passive Large Cap Equity	36,856	0.00	N/A
UW Portfolio Mgmt Program	1,645,505	0.01	-3.03
<b>Small Cap US Equity Composite</b>	<b>351,061,639</b>	<b>1.50</b>	<b>-3.38</b>
Van Berkum	170,840,239	0.73	-3.12
BlackRock Small Cap	68,813,896	0.29	-1.92
Small Cap Equity Quantamental	45,190,098	0.19	-4.35
Small Cap Equity Quantitative	66,217,405	0.28	-4.90
<b>Int'l Equity Composite</b>	<b>2,468,023,442</b>	<b>10.58</b>	<b>-9.11</b>
Northern Trust	1,106,738,367	4.74	-9.90
Arrowstreet	804,190,534	3.45	-9.40
Harding Loevner	557,134,154	2.39	-7.30
<b>Preferred Stock Composite</b>	<b>267,923,762</b>	<b>1.15</b>	<b>-1.63</b>
Cohen & Steers Preferred Stock	267,923,762	1.15	-1.63
<b>MLPs Composite</b>	<b>939,368,708</b>	<b>4.03</b>	<b>5.22</b>
Harvest Fund Advisors	477,831,451	2.05	6.60
Harvest Fund Advisors Passive	461,537,258	1.98	3.73
<b>Private Equity Composite</b>	<b>1,062,081,935</b>	<b>4.55</b>	<b>1.80</b>
Access Venture Partners II	837,446	0.00	N/A
Cheyenne Equity Capital Fund, L.P.	112,032,289	0.48	N/A
Hamilton Lane Nowood Fund, L.P.	136,361,234	0.58	N/A
Neuberger Berman Sauger Fund, L.P.	166,082,810	0.71	N/A
BlackRock LTPC, L.P.	439,150,558	1.88	N/A
Valor Equity Partners V LP	61,017,365	0.26	N/A
GTCR Fund XIII	43,436,241	0.19	N/A
Veritas Capital Vantage Fund	12,661,455	0.05	N/A
StepStone Fund V	23,120,063	0.10	N/A
Nautic Partners X	15,401,755	0.07	N/A
Dragoneer Opp Fund VI	3,940,950	0.02	N/A
Accel KKR Growth Partners IV	3,412,269	0.01	N/A
Morgan Stanley Ashbridge Secondaries II (CF)	44,627,500	0.19	N/A
<b>Core Real Estate Composite</b>	<b>1,737,250,746</b>	<b>7.45</b>	<b>0.24</b>
Clarion Lion	1,066,764,310	4.57	0.46
UBS Trumbull	200,538,218	0.86	-0.17
MS Prime	469,948,218	2.01	-0.06
<b>Non-Core Real Estate Composite</b>	<b>664,061,585</b>	<b>2.85</b>	<b>0.93</b>
SC Capital	107,333,191	0.46	N/A

Asset Allocation & Performance			
	Allocation		Performance (%)
	Market Value (\$)	%	FYTD
Realterm	345,844,938	1.48	N/A
M&G	3,497,004	0.01	N/A
Northwood	198,888,069	0.85	N/A
WestRiver	8,498,384	0.04	N/A
<b>Infrastructure Composite</b>	<b>137,687,278</b>	<b>0.59</b>	<b>-6.01</b>
Macquarie Infrastructure	112,686,722	0.48	-6.06
MGIF Co-Investment 3	25,000,556	0.11	N/A
<b>Diversified Hedge Funds Composite</b>	<b>1,107,471,290</b>	<b>4.75</b>	<b>0.07</b>
PAAMCO - Jackalope Fund	2,819,887	0.01	N/A
Grosvenor Diversified Hedge Funds	439,453,289	1.88	0.45
Internal Diversified Hedge Funds	665,198,113	2.85	-0.16
<b>Core Fixed Income Composite</b>	<b>2,922,639,564</b>	<b>12.53</b>	<b>-4.65</b>
Internal Intermediate Gov't Fixed Income	931,417,473	3.99	-4.25
Payden & Rygel IGC	478,760,118	2.05	-5.19
JP Morgan MBS	607,570,493	2.60	-4.74
Internal Passive Core FI	9,654	0.00	N/A
PIMCO	904,881,826	3.88	-4.61
<b>Laddered Treasury Composite</b>	<b>3,790,869,247</b>	<b>16.25</b>	<b>-1.04</b>
Internal Ladder Portfolio	3,790,869,247	16.25	-1.04
<b>Bank Loans Composite</b>	<b>1,499,597,555</b>	<b>6.43</b>	<b>1.28</b>
Credit Suisse	448,955,666	1.92	1.45
Octagon	659,295,236	2.83	1.08
KKR	391,346,653	1.68	1.45
<b>Emerging Market Debt Composite</b>	<b>830,203,438</b>	<b>3.56</b>	<b>-2.87</b>
Global Evolution	95,609,750	0.41	-3.00
Global Evolution Hard	122,441,249	0.52	-4.43
Goldman Sachs	186,668,320	0.80	-1.45
Eaton Vance	156,589,823	0.67	-1.46
Finistere	188,283,812	0.81	-3.98
Wellington	80,610,483	0.35	-4.05
<b>Long Duration Fixed Income Composite</b>	<b>556,884,923</b>	<b>2.39</b>	<b>-9.13</b>
Internal Long Duration Fixed Income	247,363,361	1.06	-9.60
Metlife	309,521,562	1.33	-8.75
<b>Low Duration Fixed Income Composite</b>	<b>632,560,866</b>	<b>2.71</b>	<b>-1.15</b>
Internal Low Duration Fixed Income	632,560,866	2.71	-1.15
<b>Transition Low Duration Composite</b>	<b>1,163,557,968</b>	<b>4.99</b>	<b>0.19</b>
PIMCO Transition Low Duration	1,163,557,968	4.99	0.19
<b>Grosvenor Silvery Lupine Fund</b>	<b>24,761,031</b>	<b>0.11</b>	<b>1.76</b>
<b>Composite - Opportunistic Investments</b>	<b>102,510,925</b>	<b>0.44</b>	<b>2.28</b>
Grosvenor Opportunistic Class D	102,475,047	0.44	2.28
Internal Opportunistic	35,878	0.00	N/A
<b>Cash Equivalents</b>	<b>1,350,467,285</b>	<b>5.79</b>	<b>0.50</b>
<b>Public Purpose Investments</b>	<b>218,074,071</b>	<b>0.93</b>	<b>N/A</b>

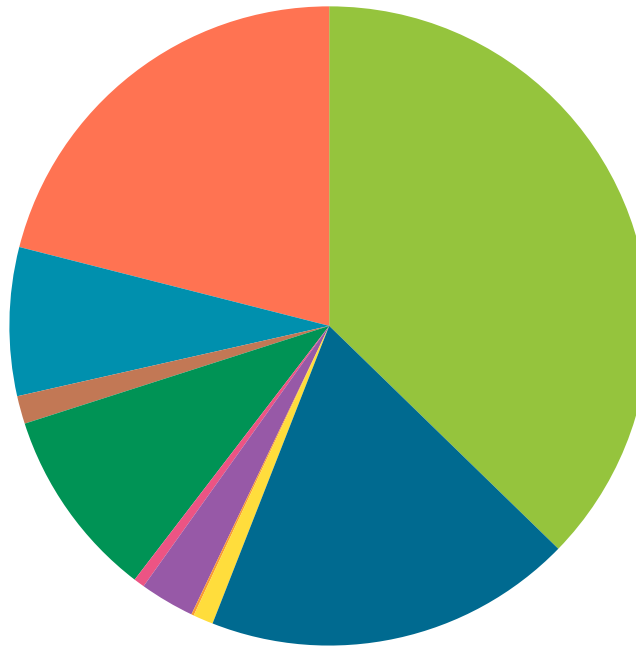
Schedule of Investable Assets - Total Fund Composite Ex Public Purpose Investments

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	Unit Value
<b>FYTD</b>	<b>23,546,842,812</b>	<b>107,159,087</b>	<b>-543,055,884</b>	<b>23,110,946,015</b>	<b>97.70</b>

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 09/30/2022. 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.



September 30, 2022 : \$23,329,020,086



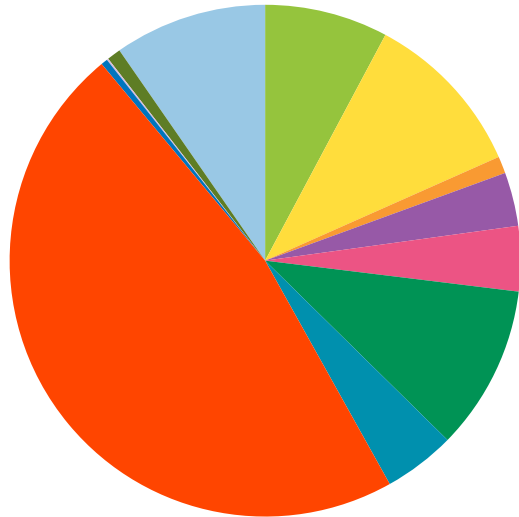
	Market Value (\$)	Allocation (%)
Permanent Mineral Trust	8,697,099,434	37.28
Common School PLF	4,354,128,946	18.66
Permanent Land Fund	238,245,123	1.02
University Permanent Land Fund	27,536,347	0.12
Hathaway Scholarship	647,259,938	2.77
Higher Education	128,277,456	0.55
Workers Compensation Fund	2,250,913,917	9.65
Pool A	329,173,615	1.41
LSRA	1,750,383,575	7.50
State Agency Pool	4,906,001,737	21.03

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



Asset Allocation by Asset Class - Prior Quarter

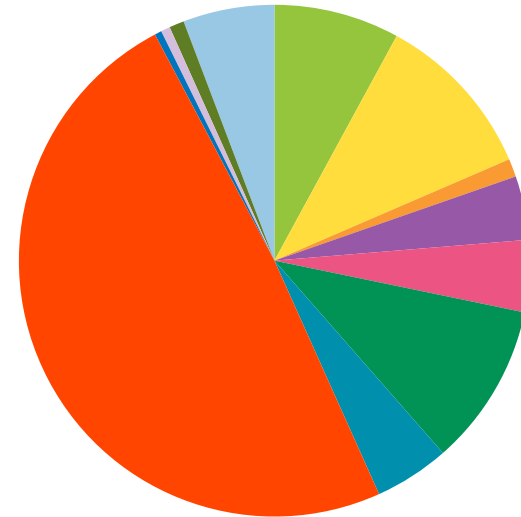
June 30, 2022 : \$23,752,420,683



	Market Value (\$)	Allocation (%)
US Equity	1,852,054,095	7.80
International Equity	2,508,584,818	10.56
Preferred Stock	256,059,245	1.08
MLPs	804,678,345	3.39
Private Equity	976,236,555	4.11
Real Estate	2,474,945,426	10.42
Diversified Hedge Funds	1,076,988,978	4.53
Fixed Income	11,176,663,615	47.05
Opportunistic Investments	100,185,751	0.42
Infrastructure	26,508,238	0.11
Public Purpose Investments	205,577,871	0.87
Cash	2,293,937,746	9.66

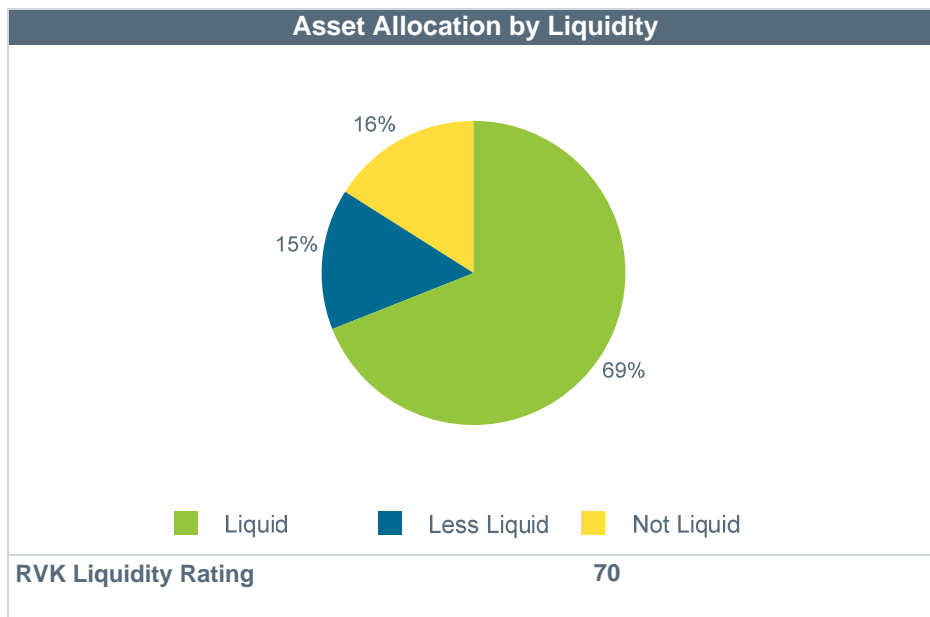
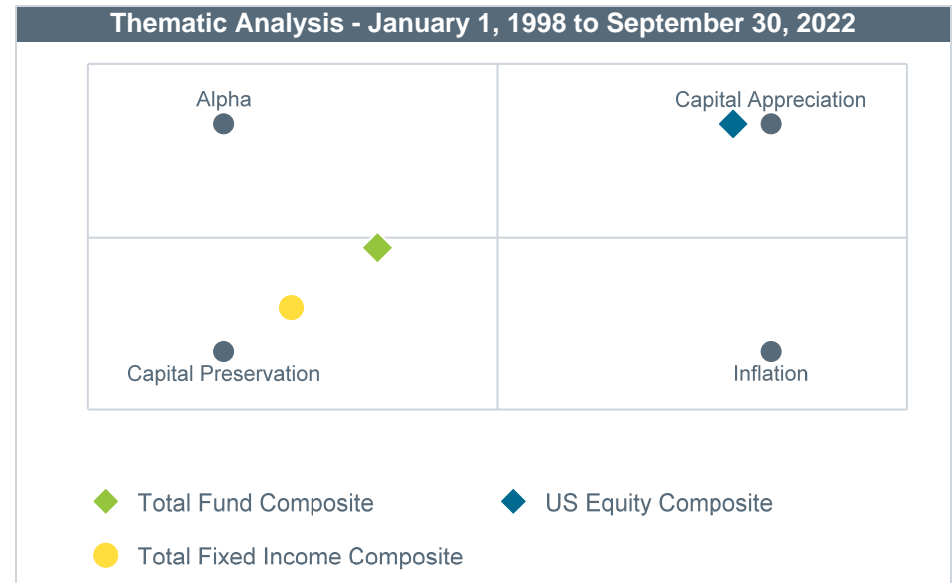
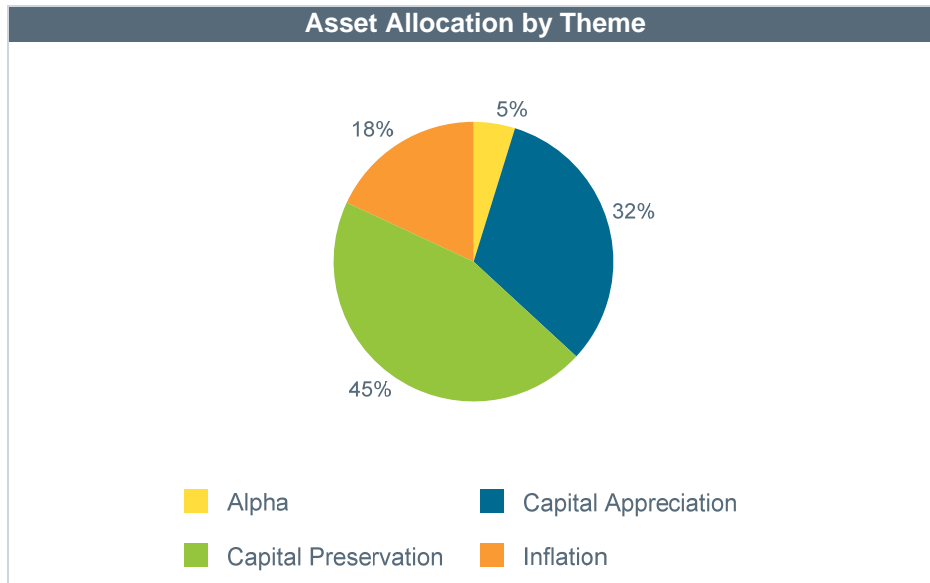
Asset Allocation by Asset Class - Current Quarter

September 30, 2022 : \$23,329,020,086



	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	1,062,081,935	4.55
Real Estate	2,401,312,331	10.29
Diversified Hedge Funds	1,107,471,290	4.75
Fixed Income	11,421,074,592	48.96
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

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



### Correlation Matrix - 10 Years

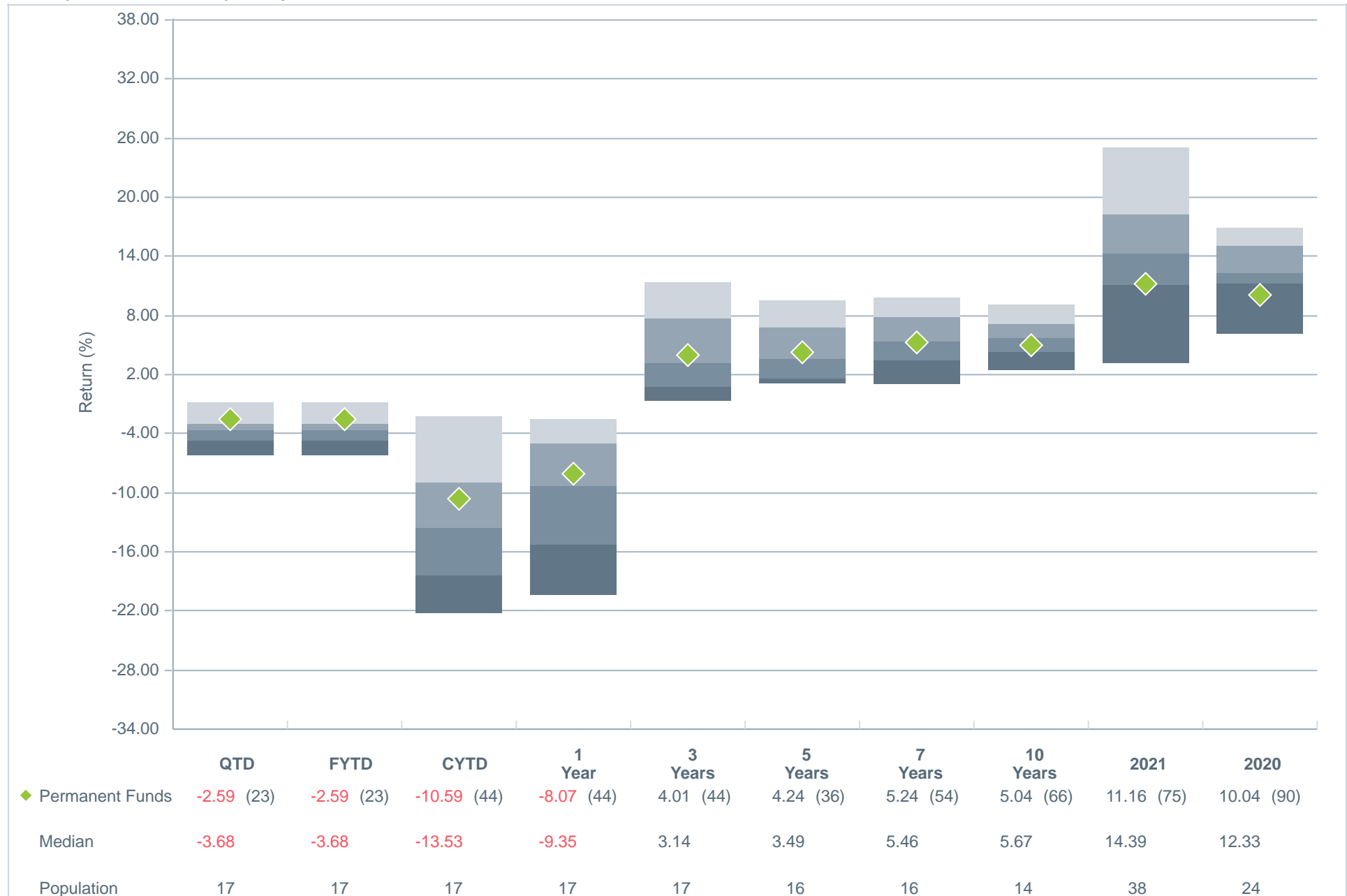
	A	B	C	D
A	1.00			
B	0.56	1.00		
C	-0.15	-0.03	1.00	
D	0.48	0.77	0.10	1.00

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

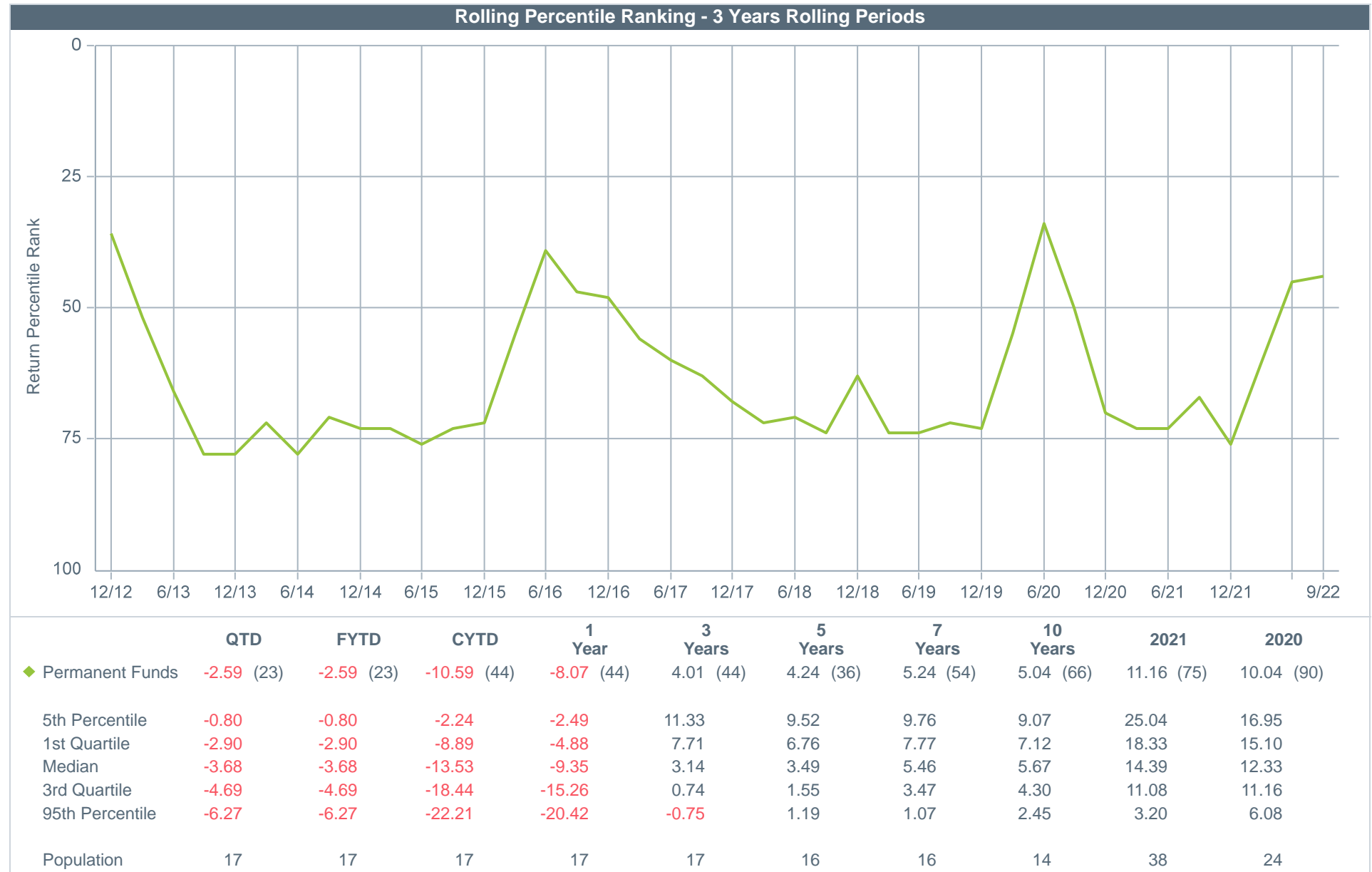
As of September 30, 2022



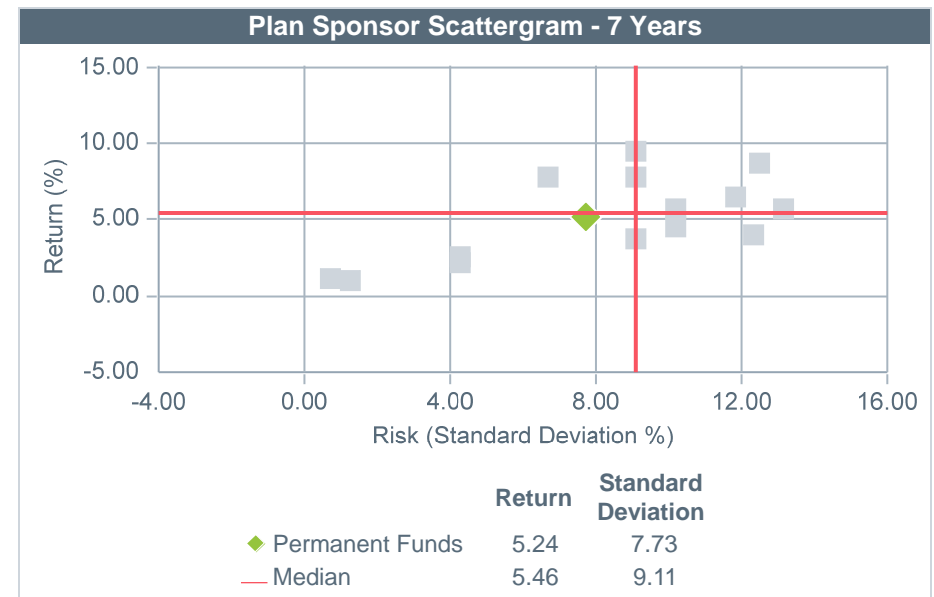
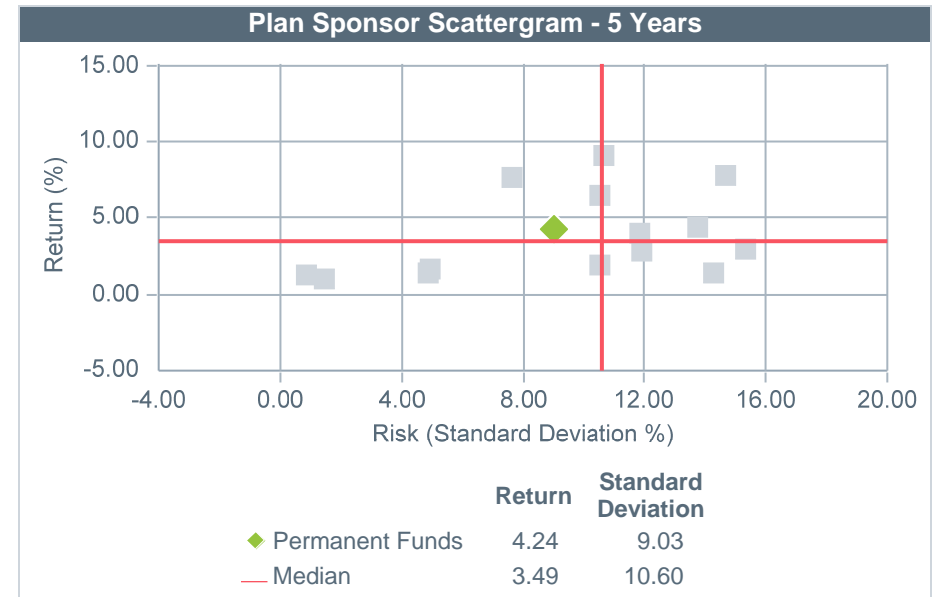
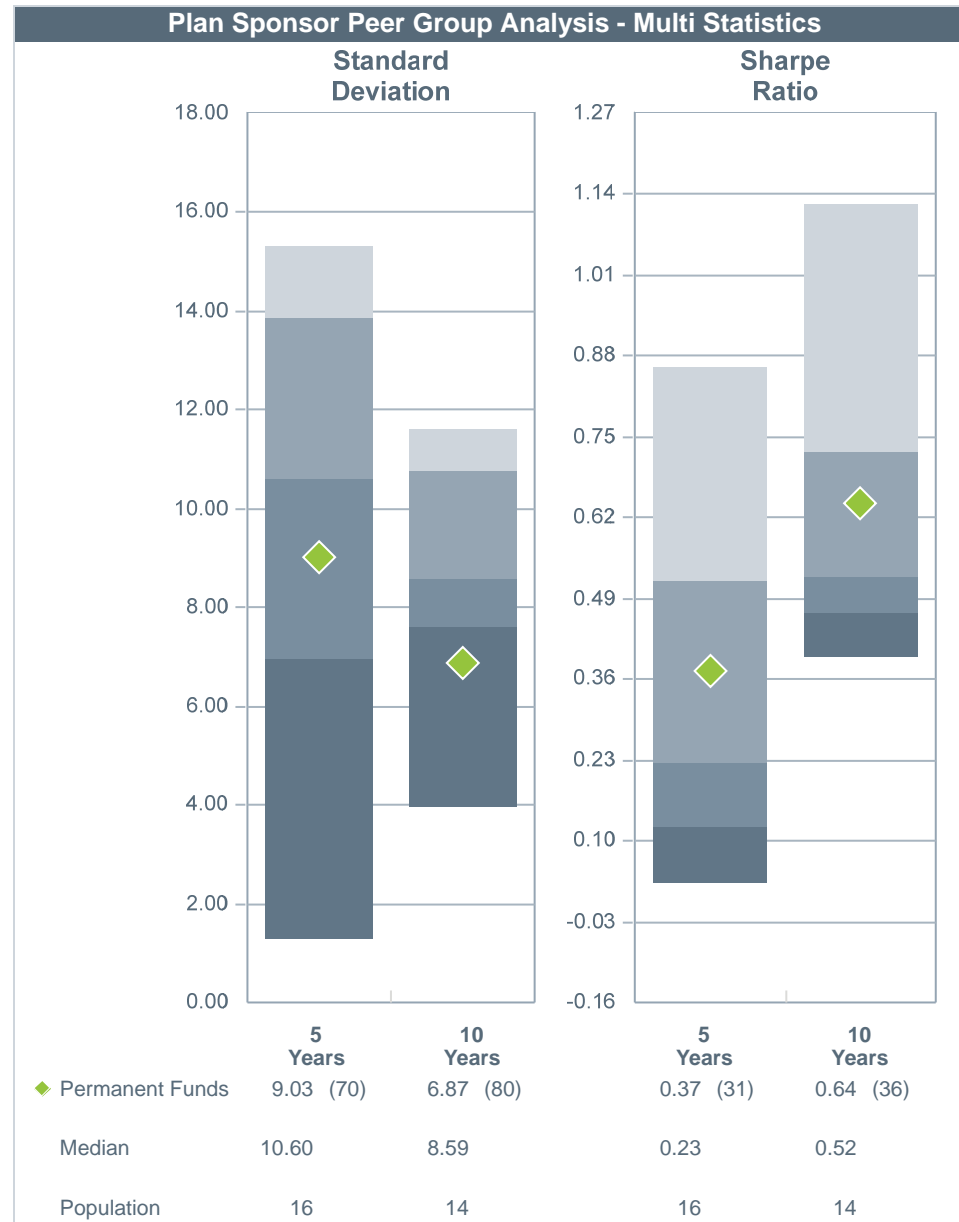
Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.  
Wyoming State Treasurer's Office fiscal year ends on June 30th.

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

As of September 30, 2022

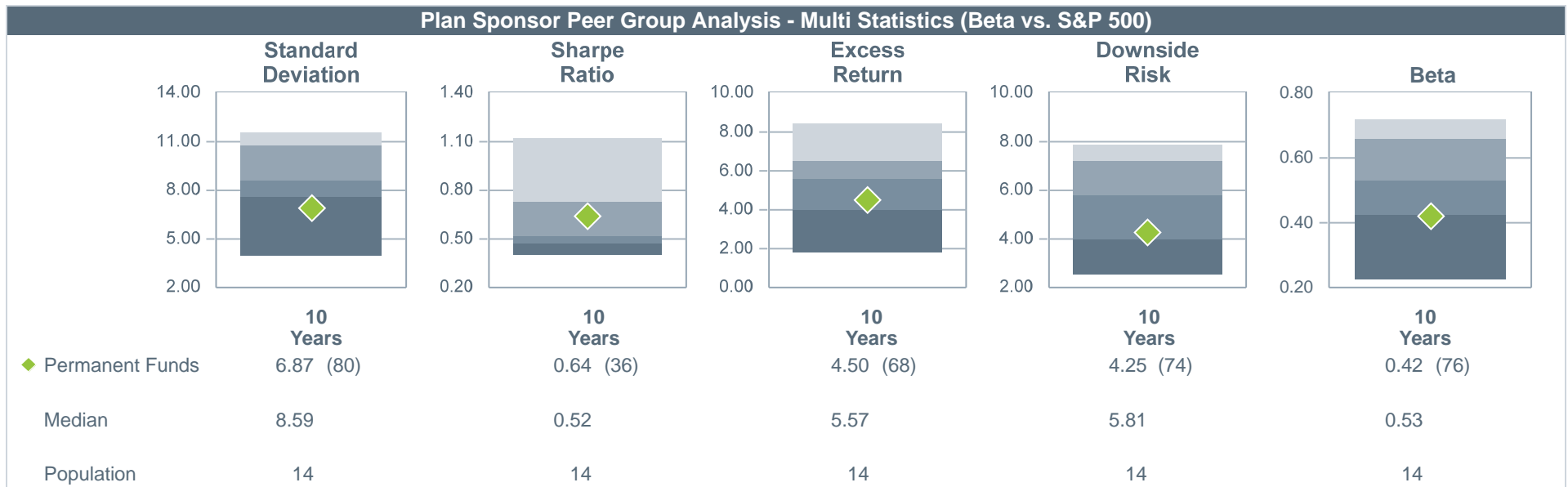
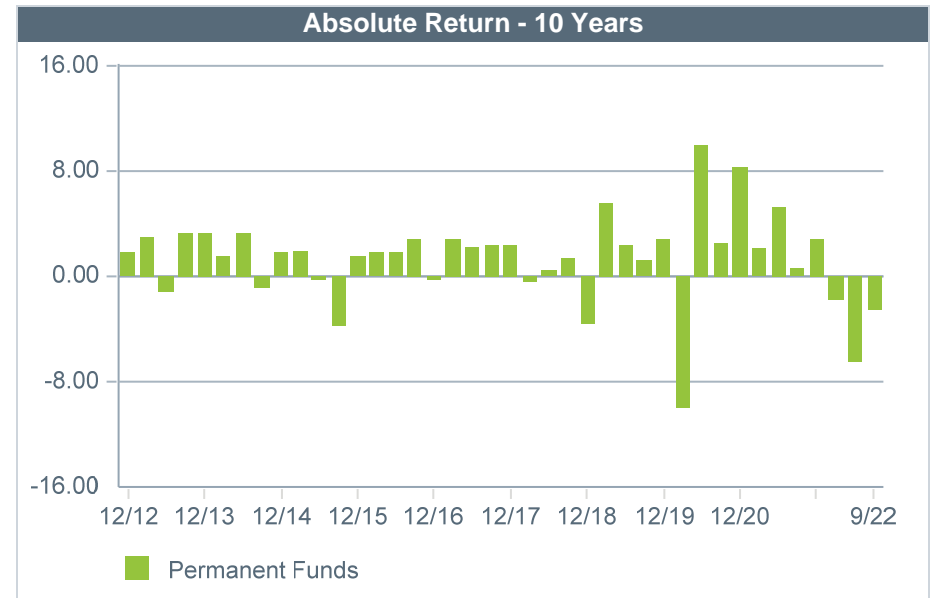
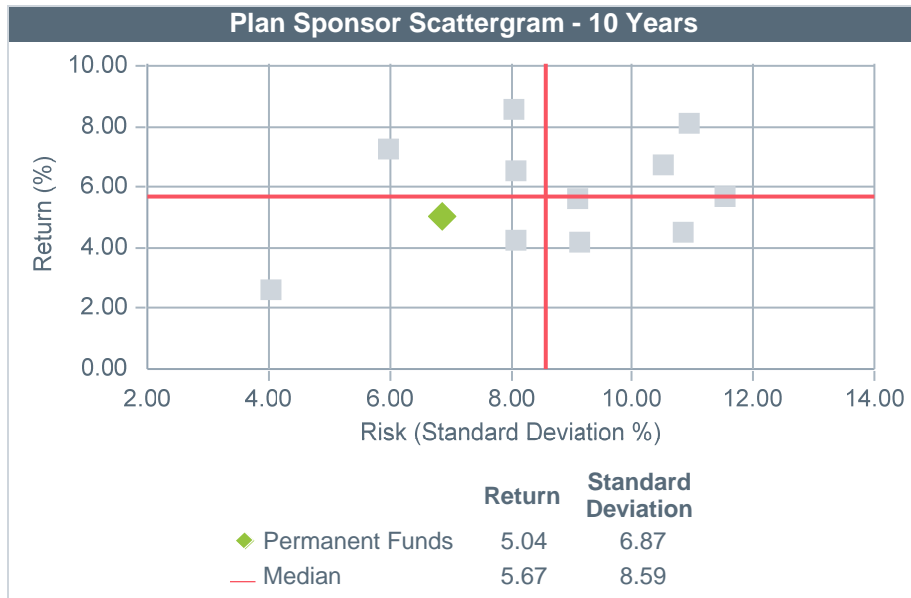


Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.  
Wyoming State Treasurer's Office fiscal year ends on June 30th.



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





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

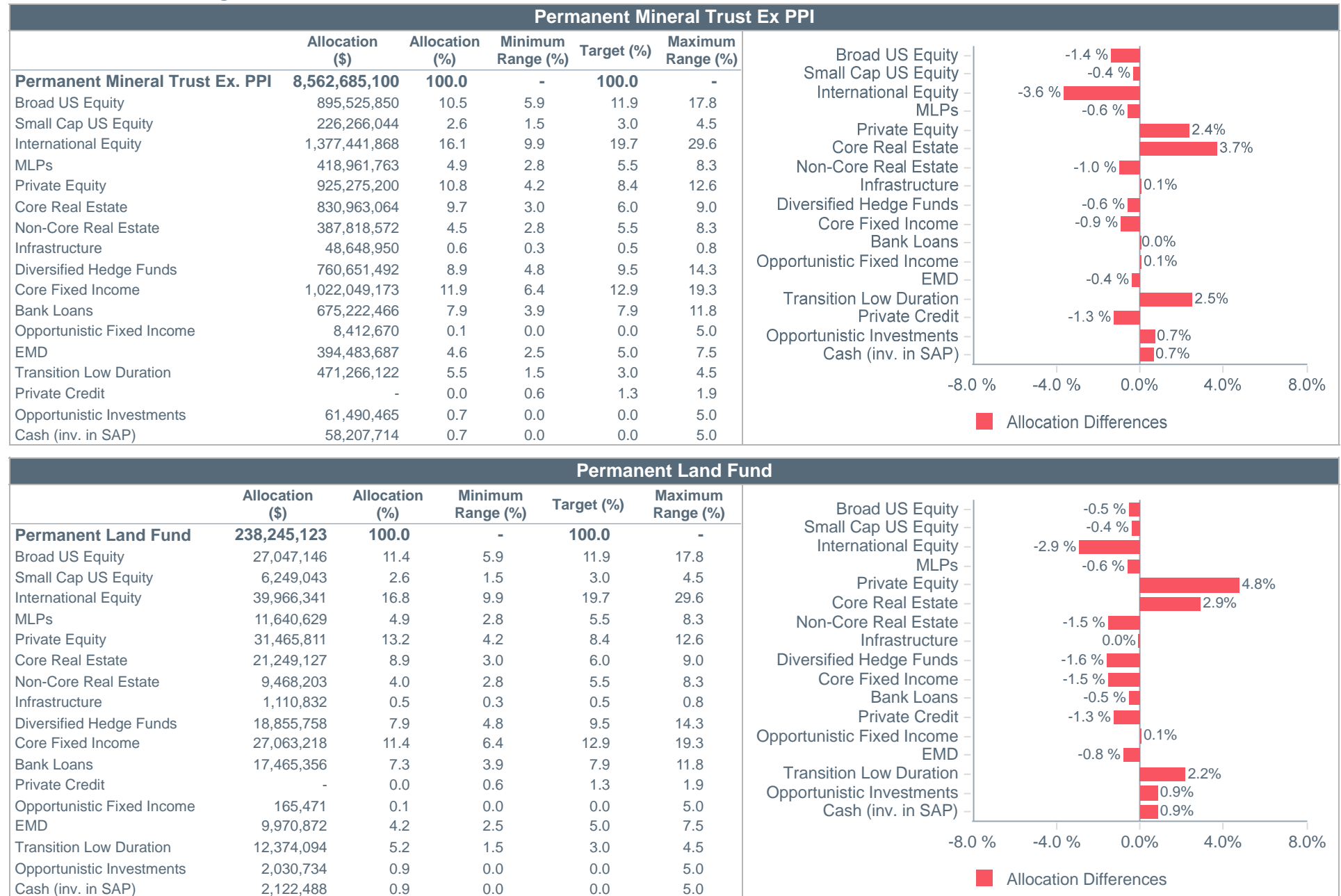
Investment Profile					Target Allocation								
<p><b>Fund Type:</b> Permanent Fund</p> <p><b>Main Objective:</b> Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity.</p> <p><b>Primary Investment Goals:</b> Capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals.</p> <p><b>Long-Term Target Equity Allocation:</b> 73%</p> <p><b>Spending Policy</b></p> <ul style="list-style-type: none"><li>• <b>Permanent Mineral Trust Fund:</b> 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%.</li><li>• <b>Hathaway Scholarship:</b> The amount necessary to fully fund scholarships awarded under W.S. 21-16-1301 <i>et seq.</i></li></ul>					Minimum Range (%)	Target (%)	Maximum Range (%)						
					<b>Permanent Mineral Trust</b>				-	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								
					5 Years				10 Years				
					PMTF	PLF	UPLF	Hath	PMTF	PLF	UPLF	Hath	
					Sharpe Ratio	0.4	0.4	0.4	0.4	0.6	0.7	0.6	0.6
					Standard Deviation	9.9	9.5	10.8	9.6	7.5	7.2	8.1	7.2
					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			
<b>Permanent Mineral Trust</b>		8,697,099,434	-2.4	-2.4	-10.5	-7.6	5.1	4.7	5.7	5.4			
PMTF - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.3	4.3	5.3	5.2			
Difference			0.7	0.7	1.1	1.3	0.8	0.4	0.4	0.2			
<b>Permanent Land Fund</b>		238,245,123	-2.3	-2.3	-10.1	-7.1	5.2	4.8	5.7	5.4			
PLF - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.3	4.3	5.3	5.1			
Difference			0.8	0.8	1.5	1.8	0.9	0.5	0.4	0.3			
<b>University Permanent Land Fund</b>		27,536,347	-2.1	-2.1	-10.0	-6.8	5.2	5.1	6.1	5.7			
UPLF - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.1	4.5	5.6	5.4			
Difference			1.0	1.0	1.6	2.1	1.1	0.6	0.5	0.3			
<b>Hathaway Scholarship</b>		647,259,938	-1.5	-1.5	-8.5	-5.3	5.8	5.0	5.7	5.2			
Hathaway - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.2	4.2	5.0	4.8			
Difference			1.6	1.6	3.1	3.6	1.6	0.8	0.7	0.4			

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

As of September 30, 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.

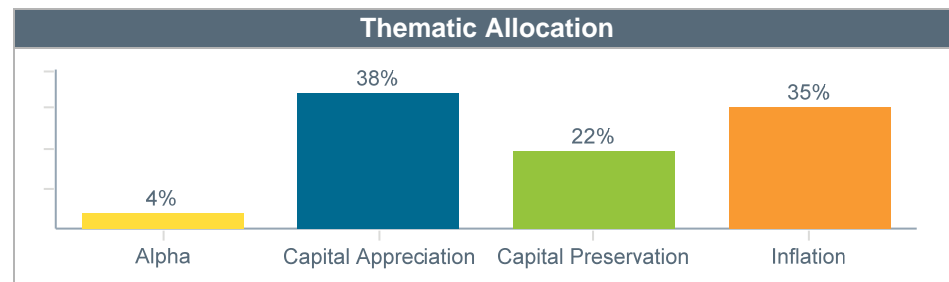
Wyoming State Treasurer's Office  
Permanent Funds - Total Return Focus  
Asset Allocation vs. Target

As of September 30, 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
<b>Fund Type:</b> Permanent Fund <b>Main Objective:</b> Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity. <b>Primary Investment Goals:</b> Income generation, capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals. <b>Long-Term Target Equity Allocation:</b> 62%
<b>Spending Policy</b> <ul style="list-style-type: none"> <li>• <b>Common School Permanent Land Fund:</b> 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%.</li> <li>• <b>Higher Education:</b> 4.75% of the five-year trailing average market value, calculated on the first day of the fiscal year.</li> </ul>



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
<b>Common School Perm Land Fund</b>	<b>4,354,128,946</b>	<b>-2.1</b>	<b>-2.1</b>	<b>-8.6</b>	<b>-6.4</b>	<b>3.4</b>	<b>3.8</b>	<b>5.1</b>	<b>5.0</b>
CSPLF - Total Fund Index		-2.5	-2.5	-9.8	-7.7	2.4	3.2	4.5	4.7
Difference		0.4	0.4	1.2	1.3	1.0	0.6	0.6	0.3
<b>Higher Education</b>	<b>128,277,456</b>	<b>-1.8</b>	<b>-1.8</b>	<b>-8.4</b>	<b>-6.3</b>	<b>3.2</b>	<b>3.5</b>	<b>4.6</b>	<b>4.4</b>
Higher Education - Total Fund Index		-2.5	-2.5	-9.8	-7.7	2.4	3.1	4.2	4.2
Difference		0.7	0.7	1.4	1.4	0.8	0.4	0.4	0.2

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Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>Common School PLF</b>	-	<b>100.00</b>	-
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

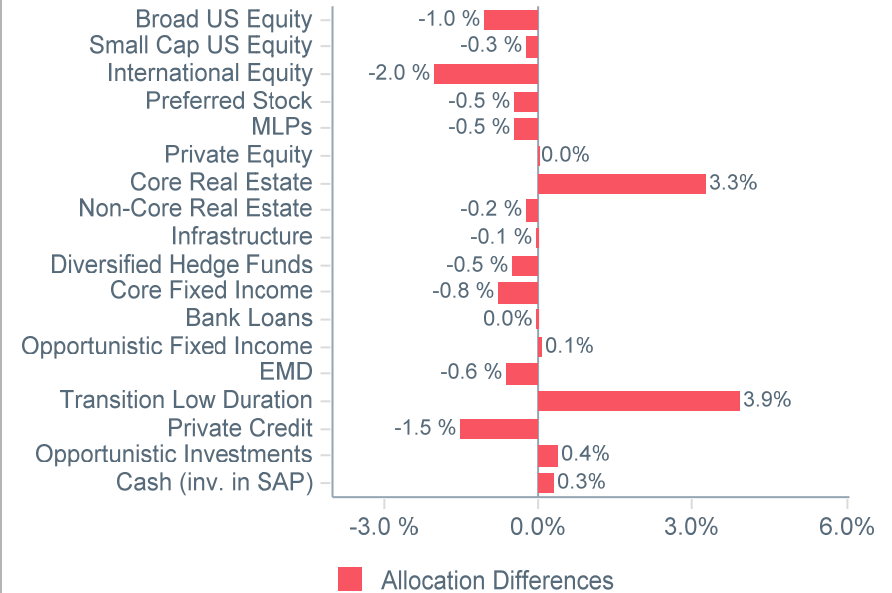
	5 Years		10 Years	
	CSPLF	HiEd	CSPLF	HiEd
Sharpe Ratio	0.3	0.3	0.7	0.6
Standard Deviation	8.5	8.6	6.6	6.5
Beta	0.4	0.4	0.4	0.4

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

As of September 30, 2022

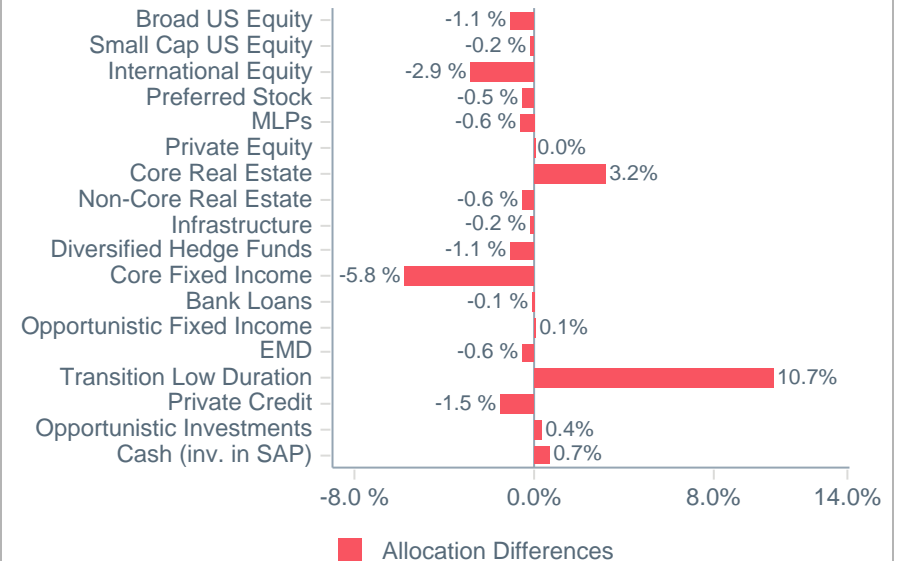
Common School PLF Ex. PPI

	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>Common School PLF Ex. PPI</b>	<b>4,335,769,208</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>-</b>
Broad US Equity	302,239,031	7.0	4.0	8.0	12.0
Small Cap US Equity	75,854,136	1.7	1.0	2.0	3.0
International Equity	563,526,128	13.0	7.5	15.0	22.5
Preferred Stock	239,300,307	5.5	3.0	6.0	9.0
MLPs	283,245,693	6.5	3.5	7.0	10.5
Private Equity	76,157	0.0	0.0	0.0	0.0
Core Real Estate	596,330,149	13.8	5.3	10.5	15.8
Non-Core Real Estate	142,106,933	3.3	1.8	3.5	5.3
Infrastructure	51,803,166	1.2	0.6	1.3	1.9
Diversified Hedge Funds	194,148,081	4.5	2.5	5.0	7.5
Core Fixed Income	601,220,078	13.9	7.3	14.6	21.9
Bank Loans	632,391,072	14.6	7.3	14.6	21.9
Opportunistic Fixed Income	3,366,455	0.1	0.0	0.0	5.0
EMD	277,169,061	6.4	3.5	7.0	10.5
Transition Low Duration	343,039,874	7.9	2.0	4.0	6.0
Private Credit	-	0.0	0.8	1.5	2.3
Opportunistic Investments	17,211,451	0.4	0.0	0.0	5.0
Cash (inv. in SAP)	12,741,435	0.3	0.0	0.0	5.0



Higher Education

	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>Higher Education</b>	<b>128,277,456</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>-</b>
Broad US Equity	8,883,071	6.9	4.0	8.0	12.0
Small Cap US Equity	2,322,377	1.8	1.0	2.0	3.0
International Equity	15,579,667	12.1	7.5	15.0	22.5
Preferred Stock	7,006,213	5.5	3.0	6.0	9.0
MLPs	8,180,189	6.4	3.5	7.0	10.5
Private Equity	2,874	0.0	0.0	0.0	0.0
Core Real Estate	17,551,397	13.7	5.3	10.5	15.8
Non-Core Real Estate	3,780,444	2.9	1.8	3.5	5.3
Infrastructure	1,350,682	1.1	0.6	1.3	1.9
Diversified Hedge Funds	4,996,608	3.9	2.5	5.0	7.5
Core Fixed Income	11,367,985	8.9	7.3	14.6	21.9
Bank Loans	18,634,956	14.5	7.3	14.6	21.9
Opportunistic Fixed Income	112,011	0.1	0.0	0.0	5.0
EMD	8,237,727	6.4	3.5	7.0	10.5
Transition Low Duration	18,862,628	14.7	2.0	4.0	6.0
Private Credit	-	0.0	0.8	1.5	2.3
Opportunistic Investments	470,824	0.4	0.0	0.0	5.0
Cash (inv. in SAP)	937,801	0.7	0.0	0.0	5.0



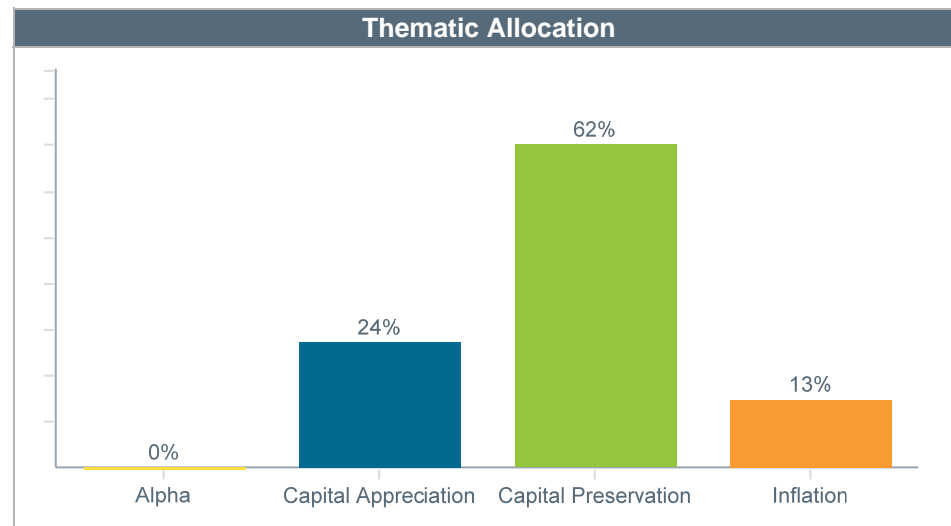
Allocations shown may not sum up to 100% exactly due to rounding. Market value shown for CSPLF excludes Public Purpose Investments (PPIs). Asset class targets shown represent 09/01/2022 interim targets.



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

As of September 30, 2022

Investment Profile
<b>Fund Type:</b> Permanent Fund <b>Main Objective:</b> 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. <b>Primary Investment Goals:</b> Long-term return, safety of capital, yield and capital appreciation. <b>Long-Term Target Equity Allocation:</b> 34% <b>Actuarial Discount Rate:</b> 2.5%* <b>Funded Status:</b> >100%* <b>Duration of Liabilities:</b> 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	2,250,913,917	-4.6	-4.6	-15.4	-13.6	0.8	3.0	3.8	3.6
WC - Total Fund Index		-5.0	-5.0	-16.2	-14.7	-0.2	2.4	3.2	3.3
Difference		0.4	0.4	0.8	1.1	1.0	0.6	0.6	0.3

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Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>Workers Compensation Fund</b>	-	<b>100.00</b>	-
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

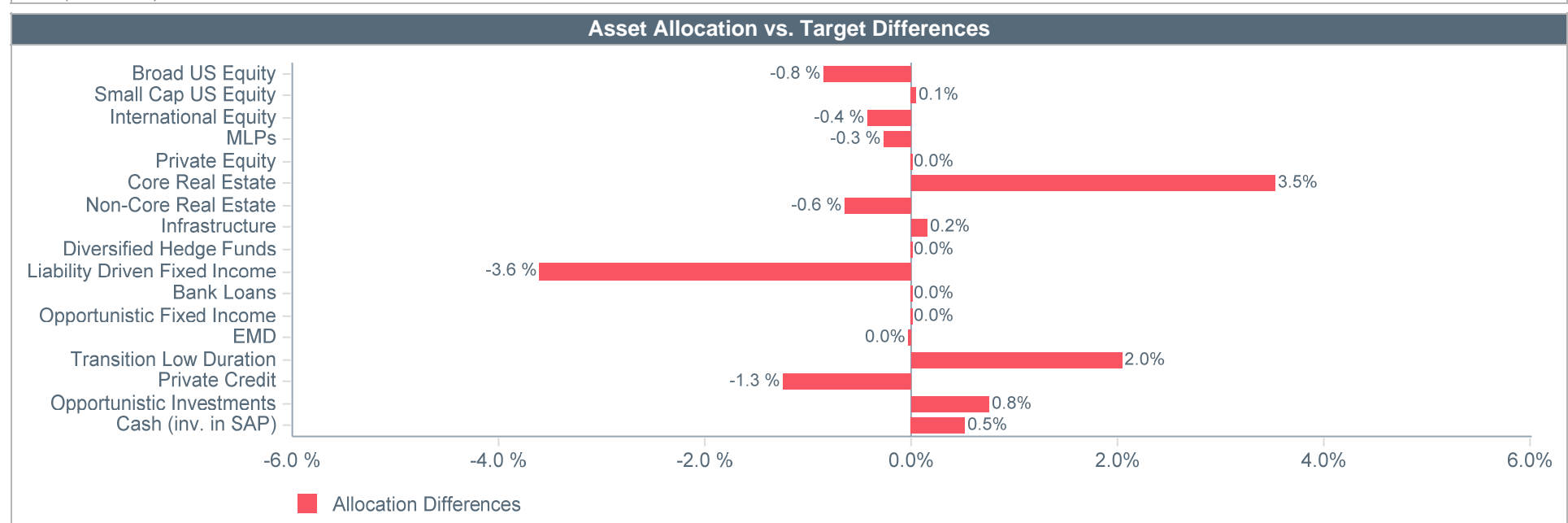
Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	8.3	6.2
Avg. Quality	A1	Aa1/Aa2
Yield To Maturity (%)	5.8	4.8
Coupon Rate (%)	3.5	2.6

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	0.3	0.5
Standard Deviation	7.7	5.8
Beta	0.3	0.3

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

As of September 30, 2022

Asset Allocation vs. Target					
	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>Workers Compensation Fund</b>	<b>2,250,913,917</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>
Broad US Equity	116,040,257	5.16	3.00	6.00	9.00
Small Cap US Equity	1,235,015	0.05	0.00	0.00	0.00
International Equity	193,170,145	8.58	4.50	9.00	13.50
MLPs	106,413,798	4.73	2.50	5.00	7.50
Private Equity	49,761	0.00	0.00	0.00	0.00
Core Real Estate	191,874,279	8.52	2.50	5.00	7.50
Non-Core Real Estate	75,679,109	3.36	2.00	4.00	6.00
Infrastructure	31,515,521	1.40	0.63	1.25	1.88
Diversified Hedge Funds	-	0.00	0.00	0.00	0.00
Liability Driven Fixed Income	1,179,475,041	52.40	28.00	56.00	84.00
Bank Loans	-	0.00	0.00	0.00	0.00
Opportunistic Fixed Income	14,394	0.00	0.00	0.00	5.00
EMD	111,933,493	4.97	2.50	5.00	7.50
Transition Low Duration	214,746,074	9.54	3.75	7.50	11.25
Private Credit	-	0.00	0.63	1.25	1.88
Opportunistic Investments	17,127,504	0.76	0.00	0.00	5.00
Cash (inv. in SAP)	11,639,527	0.52	0.00	0.00	5.00



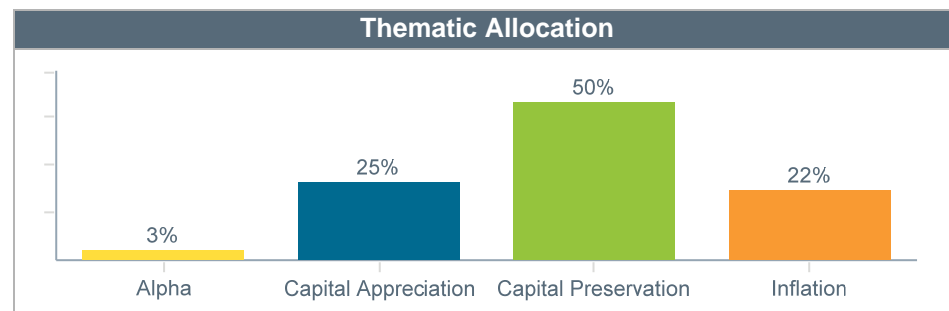
Allocations shown may not sum up to 100% exactly due to rounding. Asset class targets shown represent 09/01/2022 interim targets.

Wyoming State Treasurer's Office  
Pool A Investment Account

As of September 30, 2022

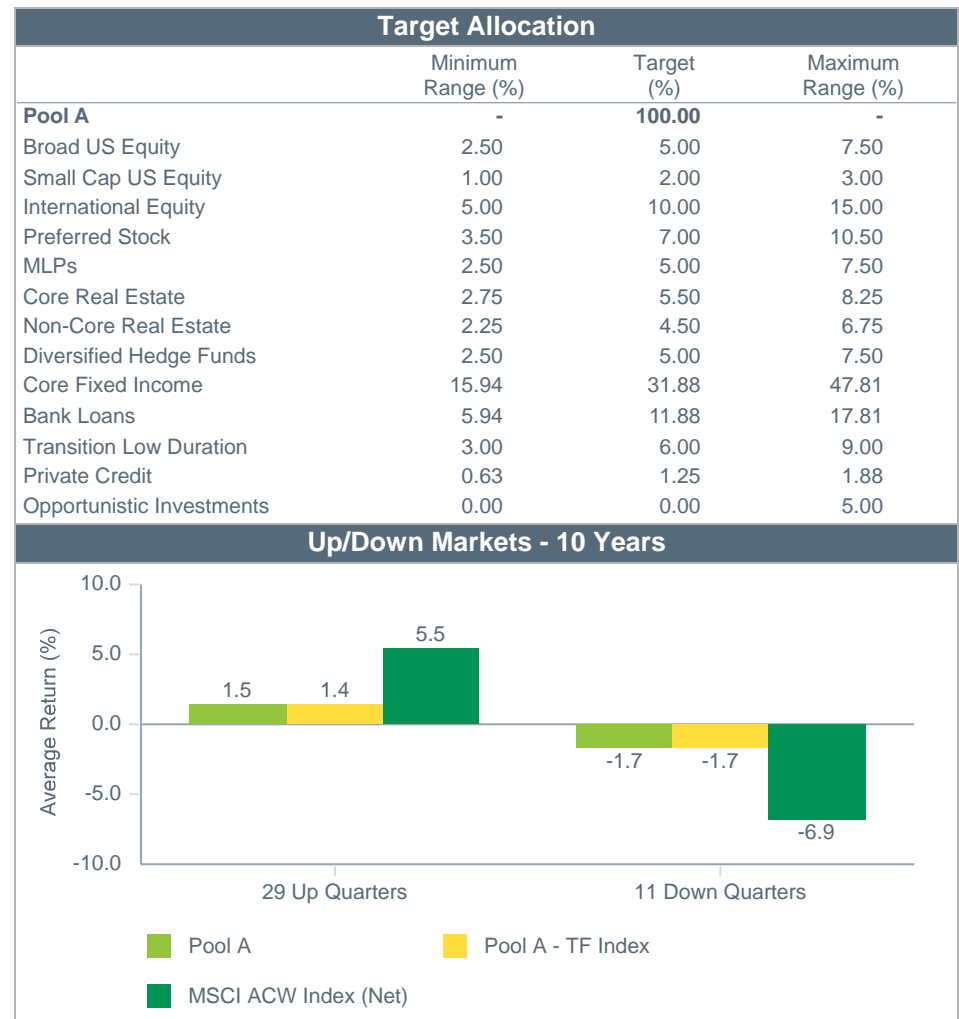
Investment Profile	
<b>Fund Type:</b> Non-Permanent Fund	
<b>Main Objective:</b> Provide a diverse array of securities including equities, while maintaining adequate liquidity, stability, and return on investment.	
<b>Primary Investment Goal:</b> Pool A is intended to be moderately liquid and safely invested but also be invested for return and growth.	
<b>Target Equity Allocation:</b> 50%	
<b>Participating Funds:</b>	
• 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	6.4	5.0
Beta	0.3	0.3



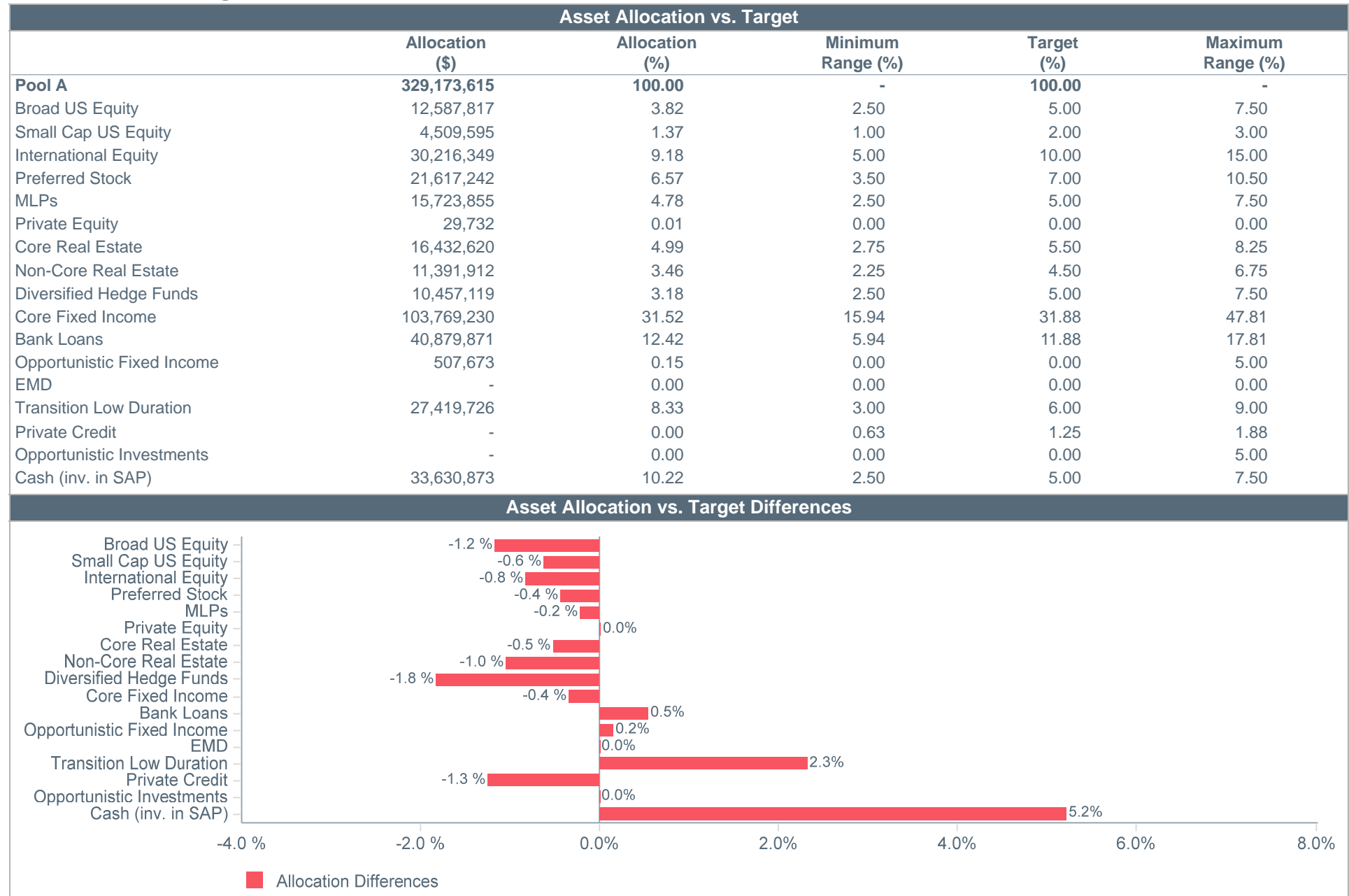
Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
<b>Pool A</b>	<b>329,173,615</b>	<b>-2.5</b>	<b>-2.5</b>	<b>-9.7</b>	<b>-8.3</b>	<b>2.1</b>	<b>2.7</b>	<b>2.9</b>	<b>2.4</b>
Pool A - Total Fund Index		-2.6	-2.6	-9.9	-8.4	1.4	2.1	2.3	2.1
Difference		0.1	0.1	0.2	0.1	0.7	0.6	0.6	0.3

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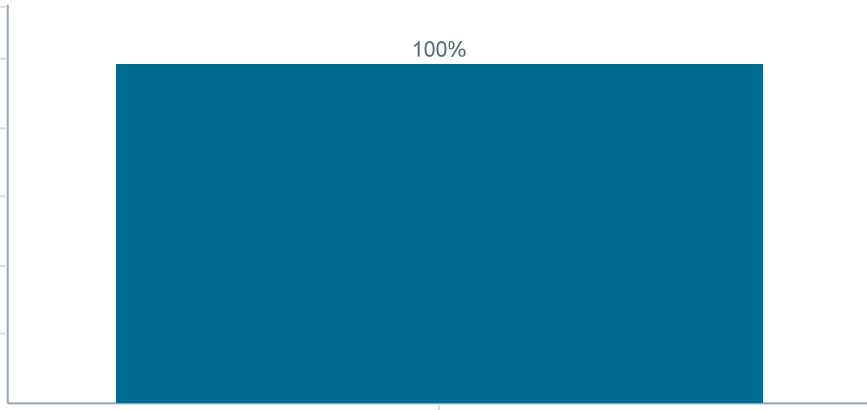
Wyoming State Treasurer's Office  
Non-Permanent Funds - Pool A Investment Account  
Asset Allocation vs. Target

As of September 30, 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				
<b>Fund Type:</b> Non-Permanent Fund <b>Main Objective:</b> Produce an investment return so that State agencies have the advantage of better income from their invested funds, while maintaining stability. <b>Primary Investment Goal:</b> Capital preservation, yield, and liquidity <b>Liquidity Constraints:</b> The Fund must meet the day-to-day cash flow needs of the State <b>Maximum Equity Allocation:</b> 0% <b>Current Target Equity Allocation:</b> 0%				
Target Allocation				
	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	
	
Capital Preservation	

Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	1.9	6.2
Avg. Quality	Aa1	Aa1/Aa2
Yield To Maturity (%)	4.5	4.8
Coupon Rate (%)	1.1	2.6

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

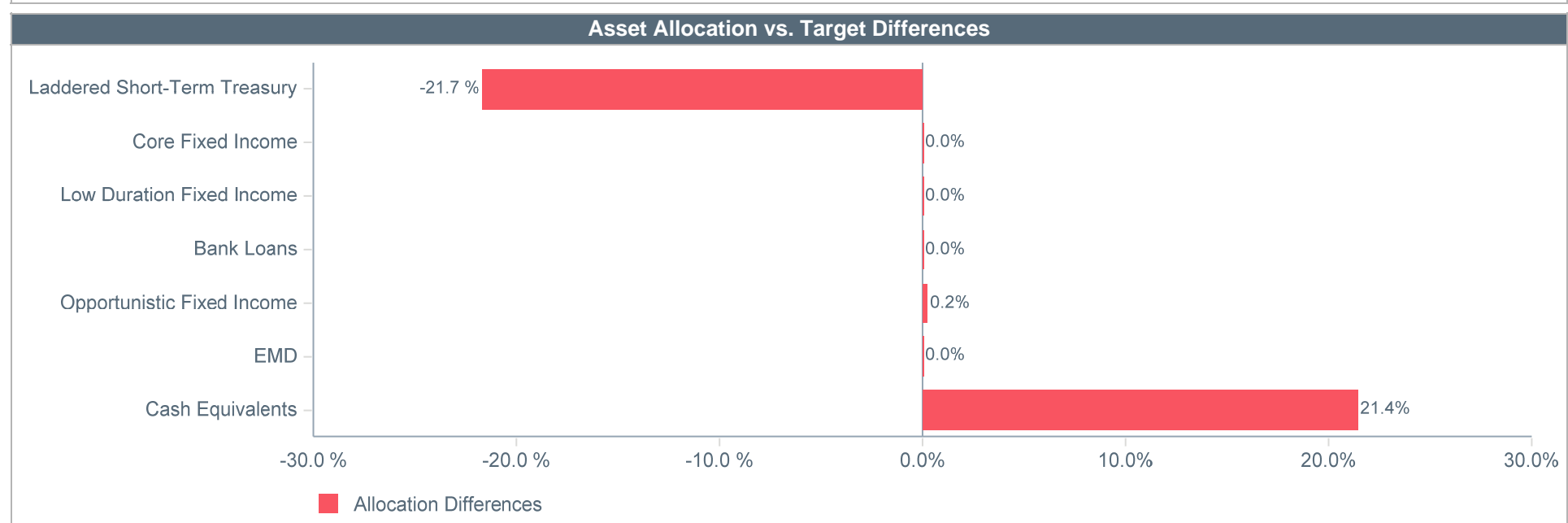
Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
State Agency Pool	4,906,001,737	-1.0	-1.0	-3.3	-3.6	-0.2	1.0	1.5	1.4
State Agency Pool - Actual Allocation Index		-1.0	-1.0	-3.4	-3.7	-0.2	0.8	1.3	1.4
Difference		0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.0

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

As of September 30, 2022

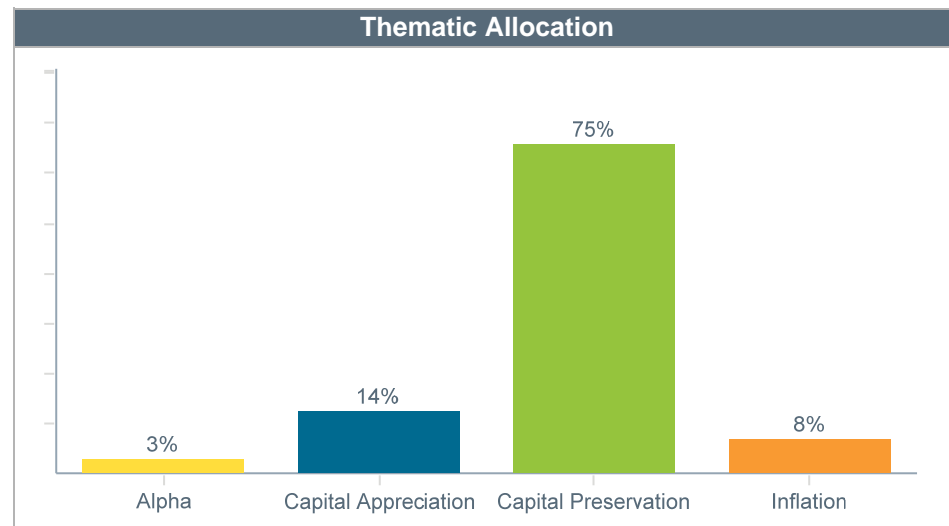
Asset Allocation vs. Target					
	Allocation (\$)	Allocation (%)	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>State Agency Pool Excluding PPI</b>	<b>4,840,701,737</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>
Laddered Short-Term Treasury	3,790,869,247	78.31	100.00	100.00	100.00
Core Fixed Income	-	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	11,621,625	0.24	0.00	0.00	0.00
EMD	-	0.00	0.00	0.00	0.00
Cash Equivalents	1,038,210,865	21.45	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
<b>Fund Type:</b> Non-Permanent Fund <b>Main Objective:</b> 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. <b>Primary Investment Goal:</b> liquidity, capital preservation, and capital appreciation. <b>LSRA LT Reserve Target Equity Allocation:</b> 87.5% <b>Spending Policy:</b> Legislative Appropriation <b>Participating Funds:</b> <ul style="list-style-type: none"> <li>Long Term Reserve</li> <li>Intermediate Term Reserve: 100% Core Fixed Income</li> <li>Short Term Reserve: 100% Low Duration Fixed Income</li> </ul>



Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
<b>LSRA Long Term Reserve</b>	-	<b>100.00</b>	-
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	7.4	07/01/2019
Beta	0.3	
Sharpe Ratio	0.0	

Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
<b>LSRA</b>	<b>1,750,383,575</b>	<b>-3.3</b>	<b>-3.3</b>	<b>-10.0</b>	<b>-9.2</b>	<b>0.5</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
LSRA - Total Fund Index		-3.4	-3.4	-10.1	-9.4	0.5	N/A	N/A	N/A
Difference		0.1	0.1	0.1	0.2	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.

**Wyoming State Treasurer's Office**  
**Asset Allocation**

**As of September 30, 2022**

	<b>Asset Allocation (\$)</b>	<b>Asset Allocation (%)</b>
<b>LSRA</b>	<b>1,750,383,575</b>	<b>100.00</b>
Broad US Equity	77,508,966	4.43
Small Cap US Equity	18,421,117	1.05
International Equity	147,886,526	8.45
Core Fixed Income	499,321,429	28.53
Bank Loans	66,977,426	3.83
Low Duration Fixed Income	632,560,866	36.14
Private Equity	22,224	0.00
MLPs	64,814,159	3.70
Diversified Hedge Funds	59,290,538	3.39
Opportunistic Investments	-	0.00
Cash (inv. in SAP)	183,580,325	10.49

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  
Asset Allocation

As of September 30, 2022

	Asset Allocation (\$)	Asset Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
<b>LSRA Long Term Reserve</b>	<b>618,501,280</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>
Broad US Equity	77,508,966	12.53	17.00	22.00	27.00
Small Cap US Equity	18,421,117	2.98	4.00	6.00	8.00
International Equity	147,886,526	23.91	21.00	28.00	35.00
Bank Loans	66,977,426	10.83	10.00	12.50	15.00
Private Equity	22,224	0.00	0.00	0.00	0.00
MLPs	64,814,159	10.48	10.00	12.50	15.00
Diversified Hedge Funds	59,290,538	9.59	15.00	19.00	23.00
Opportunistic Investments	-	0.00	0.00	0.00	0.00
Cash (inv. in SAP)	183,580,325	29.68	0.00	0.00	0.00

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

**Wyoming State Treasurer's Office**  
**Asset Allocation**

**As of September 30, 2022**

	<b>Asset Allocation (\$)</b>	<b>Asset Allocation (%)</b>	<b>Minimum Allocation (%)</b>	<b>Target Allocation (%)</b>	<b>Maximum Allocation (%)</b>
<b>LSRA Intermediate Term Reserve</b>	<b>499,321,429</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>
Core Fixed Income	499,321,429	100.00	100.00	100.00	100.00

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

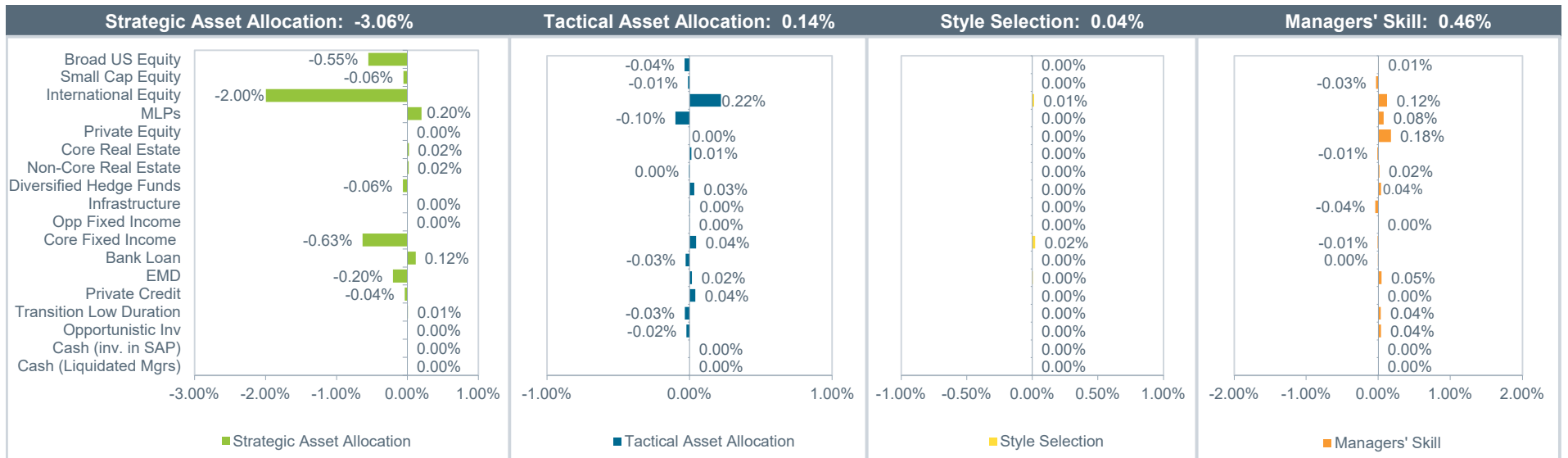
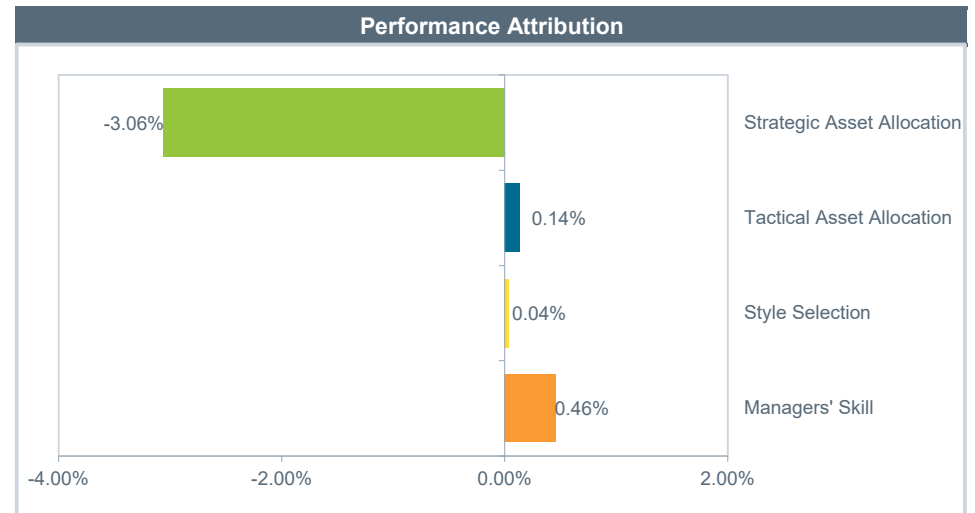
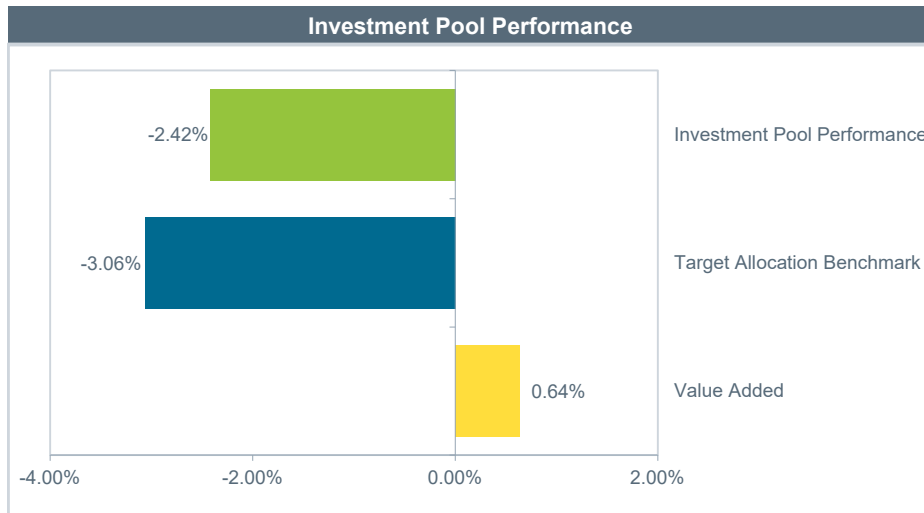
**Wyoming State Treasurer's Office**  
**Asset Allocation**

**As of September 30, 2022**

	<b>Asset Allocation (\$)</b>	<b>Asset Allocation (%)</b>	<b>Minimum Allocation (%)</b>	<b>Target Allocation (%)</b>	<b>Maximum Allocation (%)</b>
<b>LSRA Short Term Reserve</b>	<b>632,560,866</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>
Low Duration Fixed Income	632,560,866	100.00	100.00	100.00	100.00

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

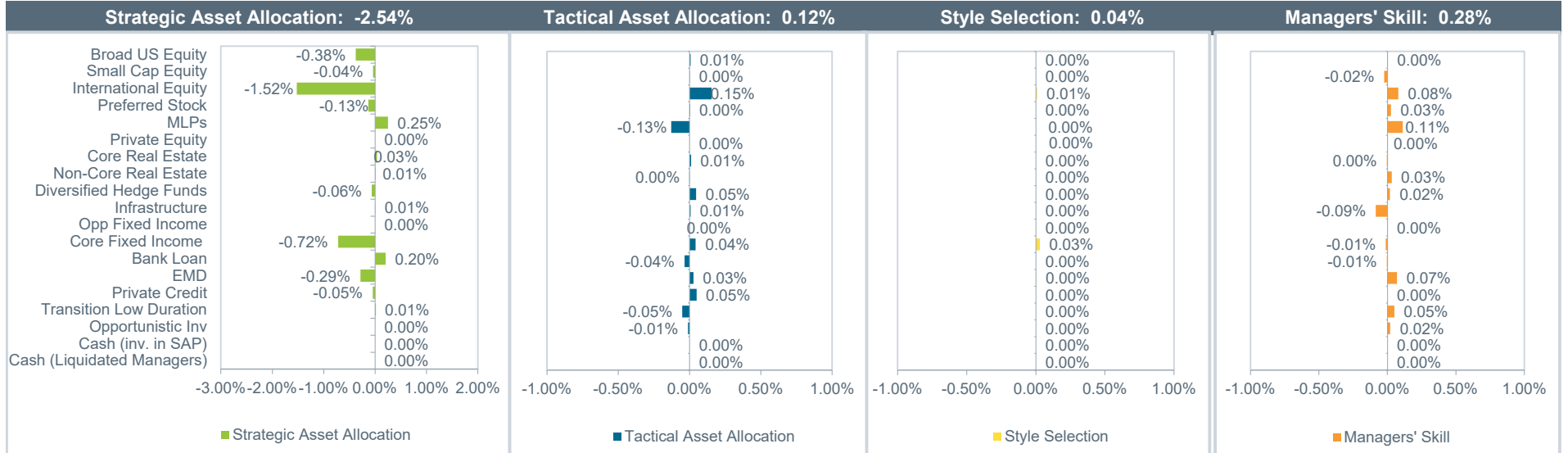
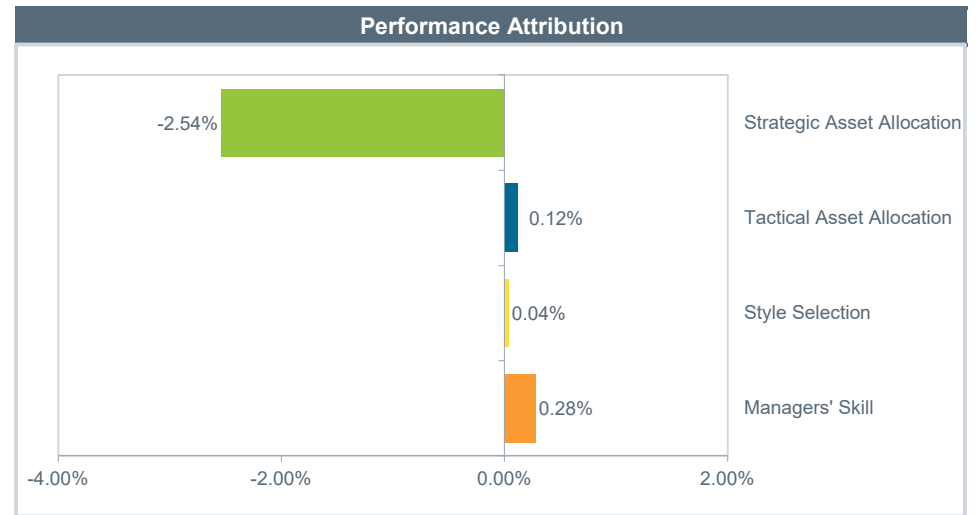
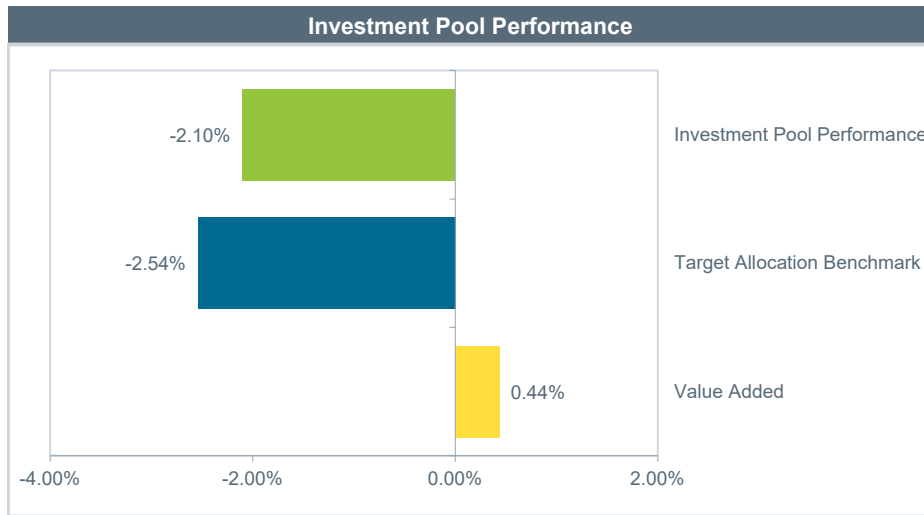
**Wyoming State Treasurer's Office**  
**Pool Attribution - IDP Methodology**  
**Permanent Mineral Trust Fund vs. Target Allocation Index**  
**FYTD Ending September 30, 2022**



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 September 30, 2022**

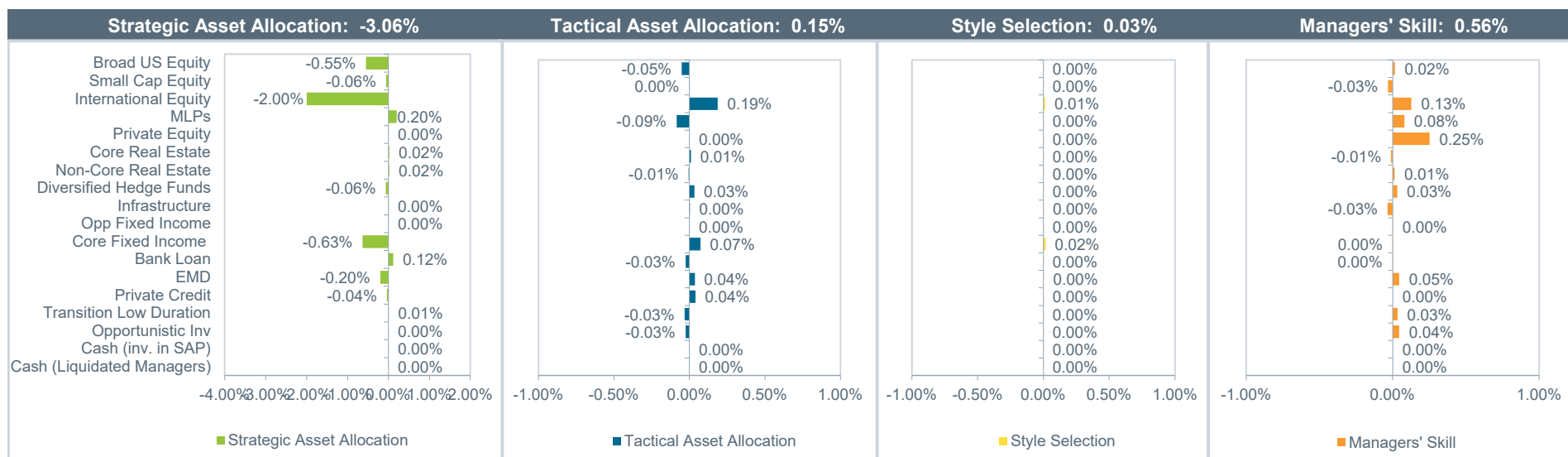
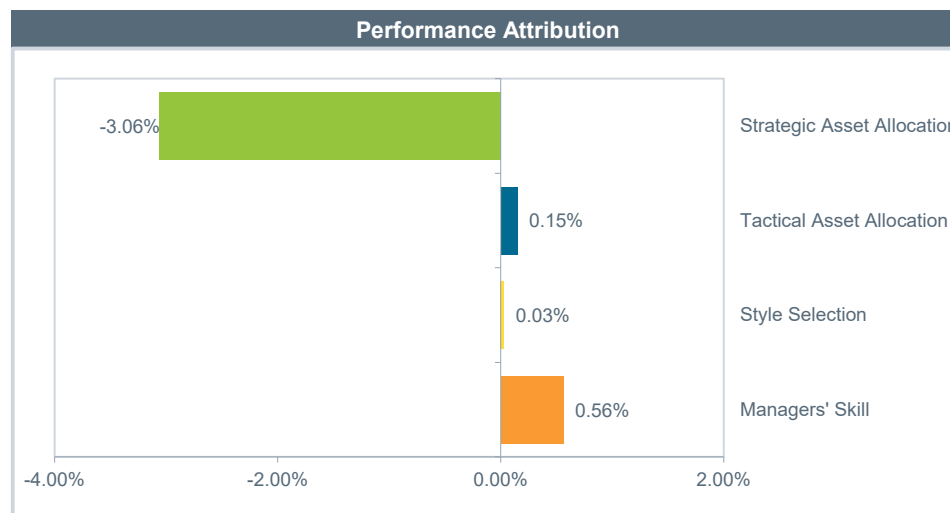
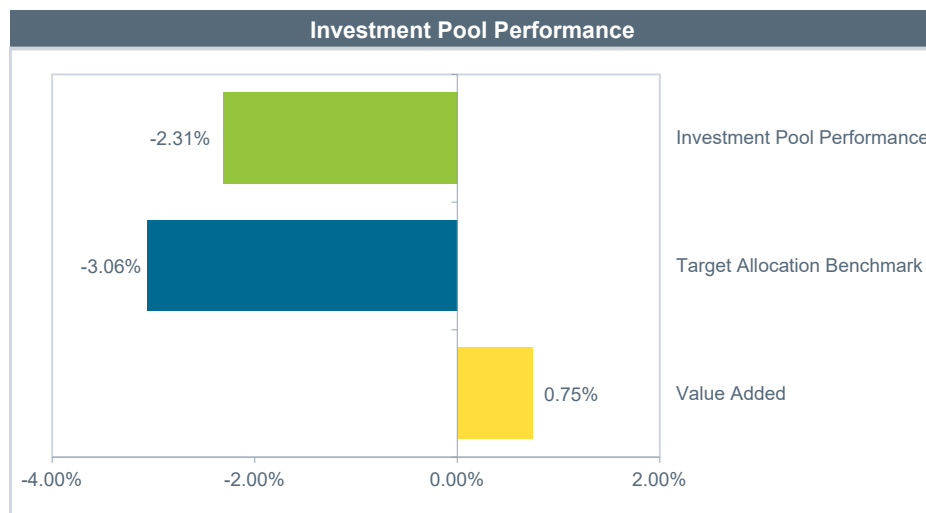


Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.

The benchmark utilized in this analysis is a passive target allocation index rather than an active actual allocation index.

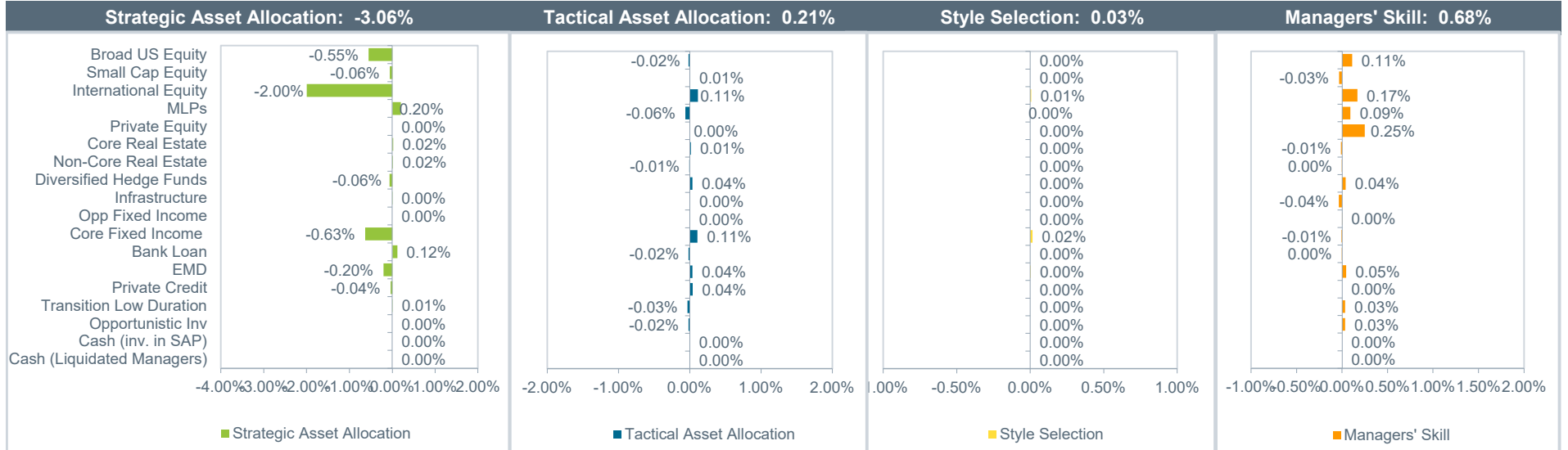
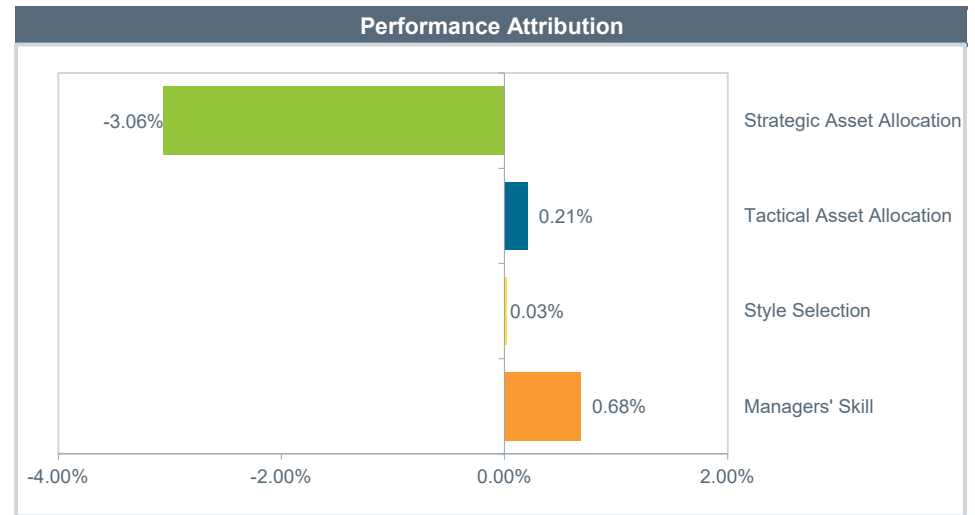
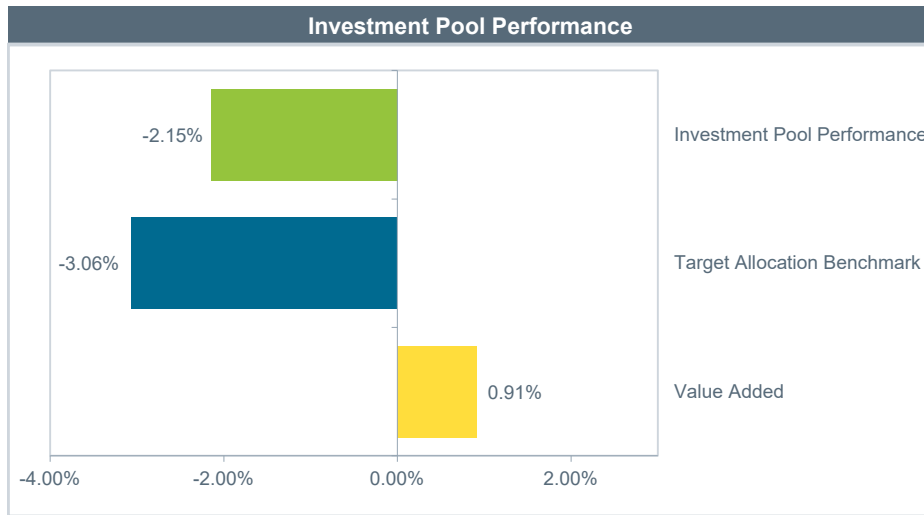
Actual Allocation Index = Target Allocation Benchmark + Tactical Asset Allocation. The underlying parts may not exactly sum to the category totals due to rounding. FY begins 7/1/2022.

**Wyoming State Treasurer's Office  
Pool Attribution - IDP Methodology  
Permanent Land Fund vs. Target Allocation Index  
FYTD Ending September 30, 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 September 30, 2022**

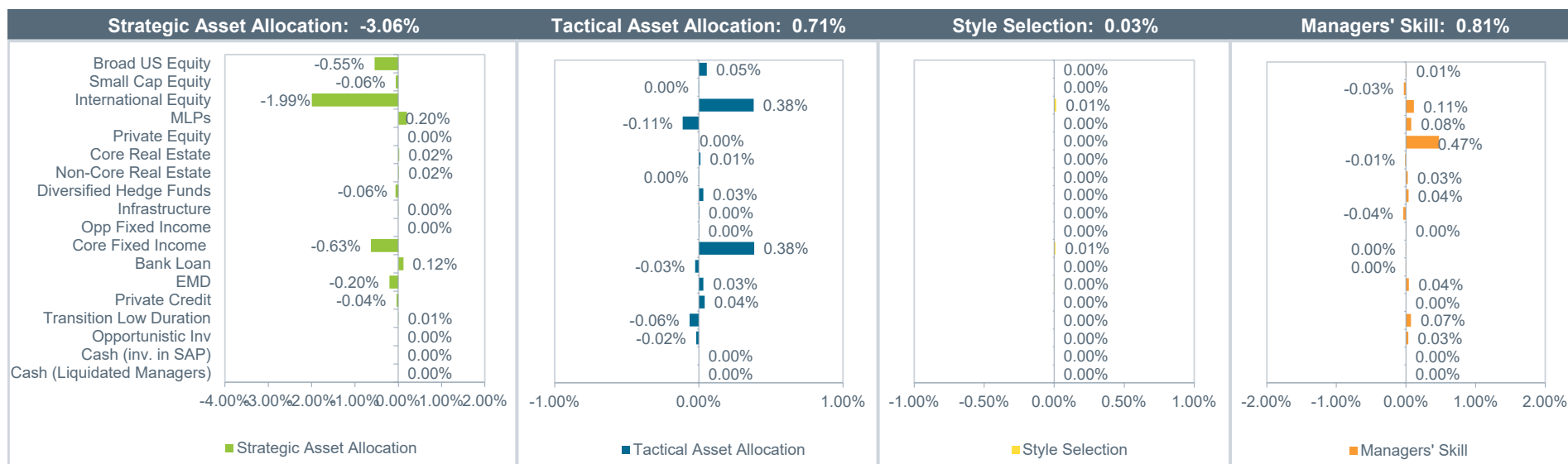
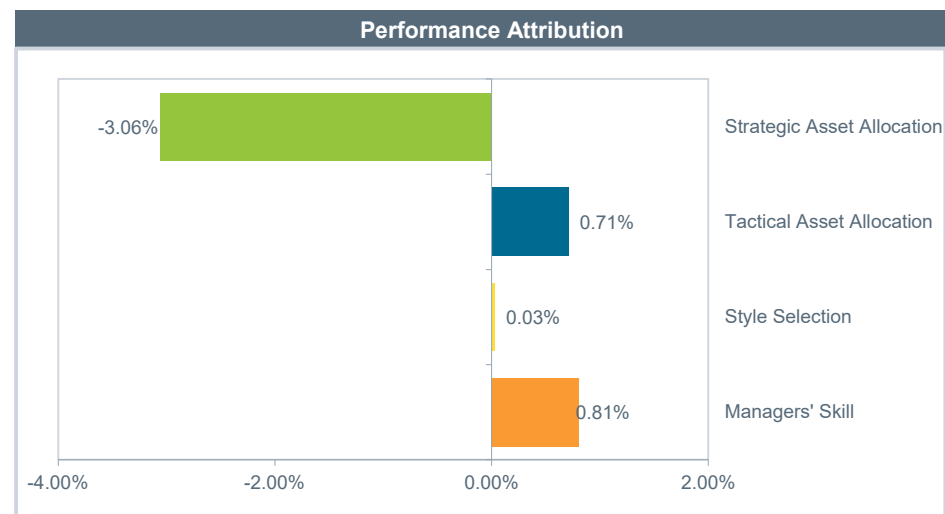
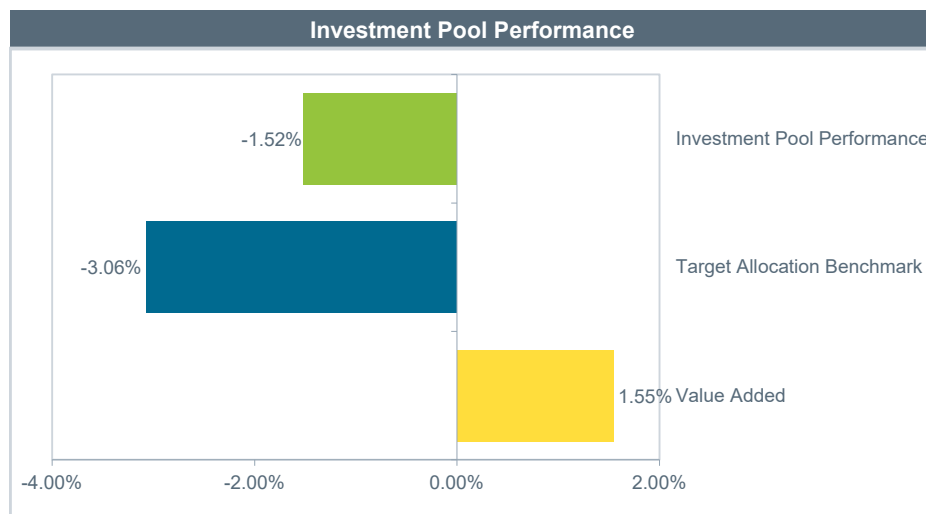


Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.

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 September 30, 2022**

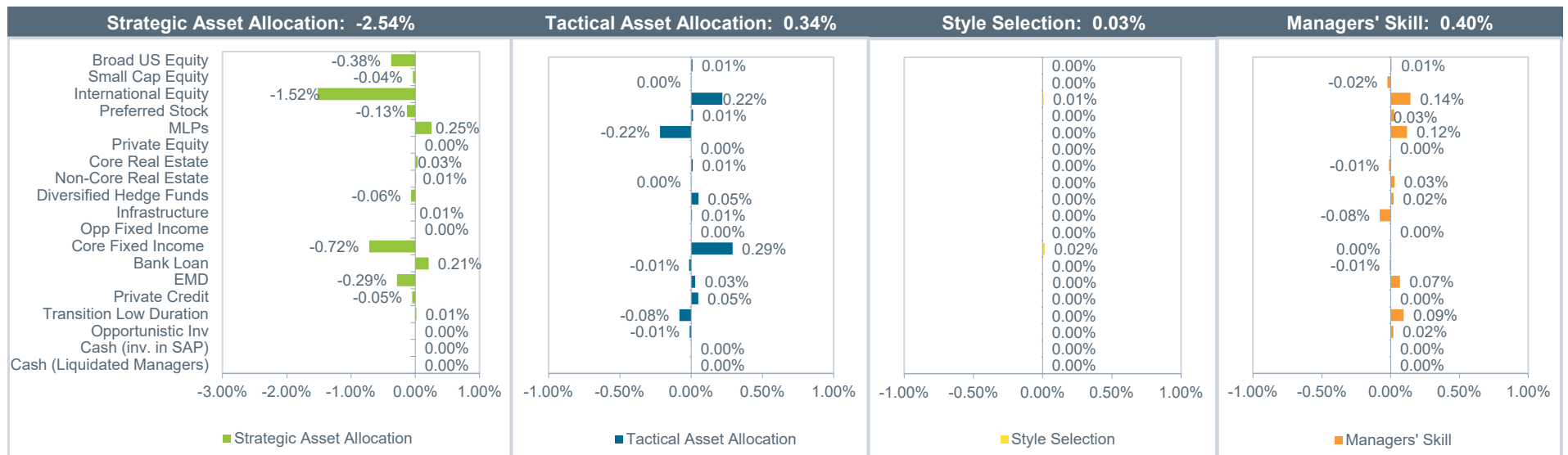
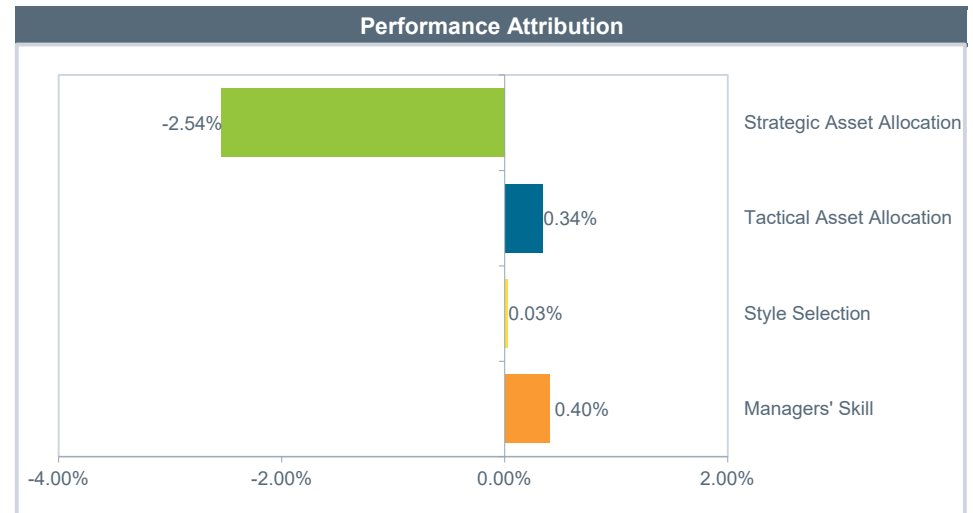
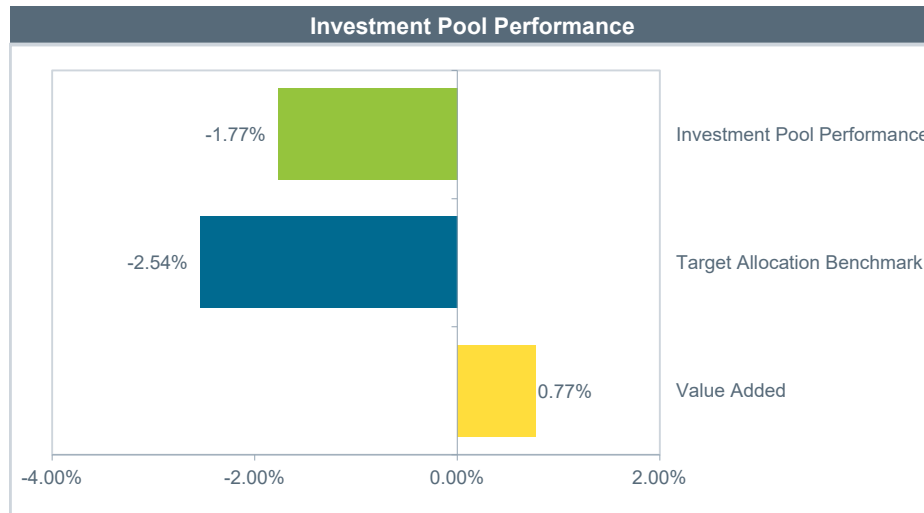


Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.

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 September 30, 2022**

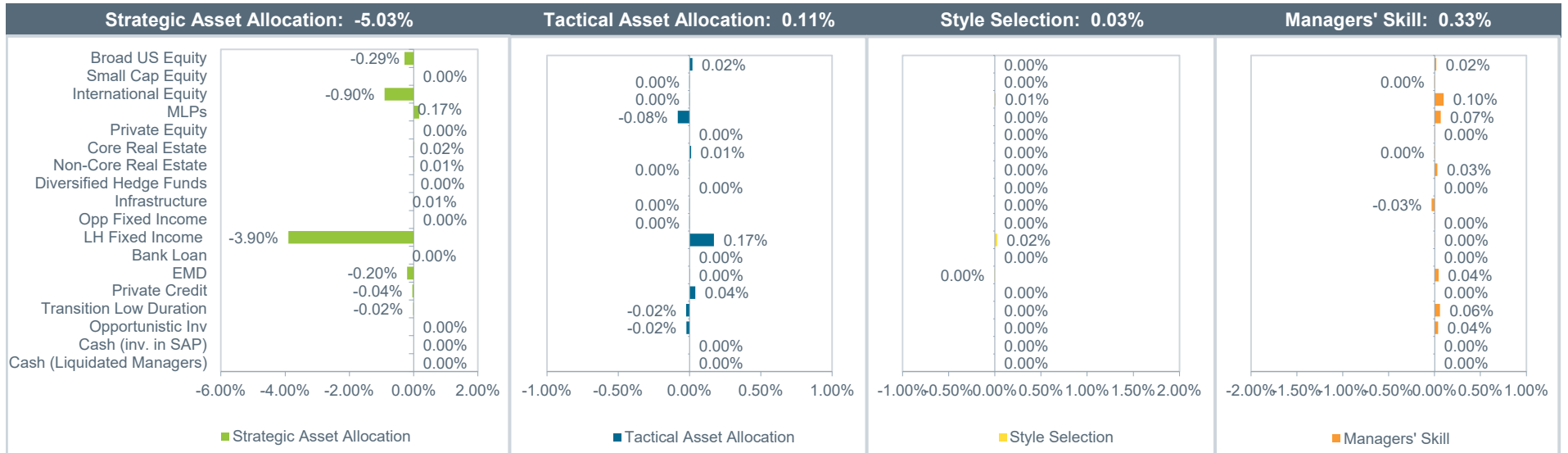
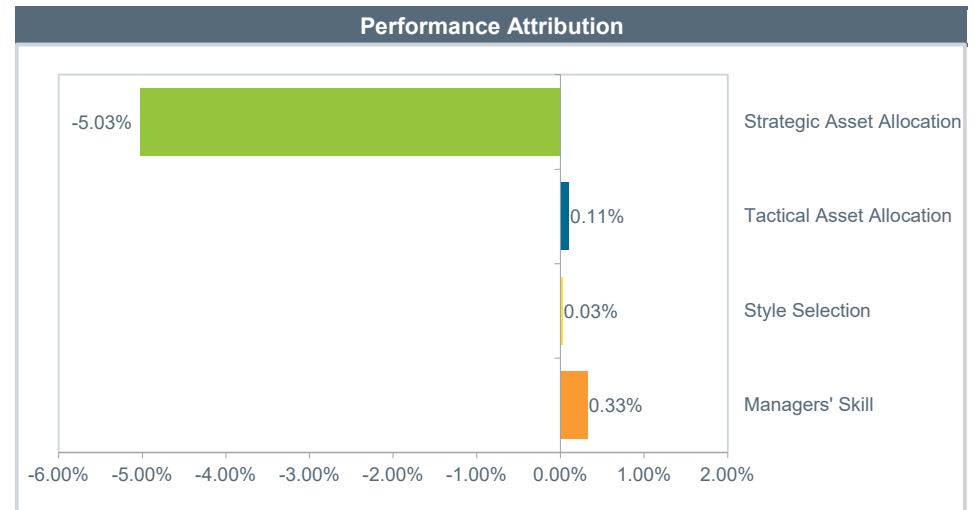
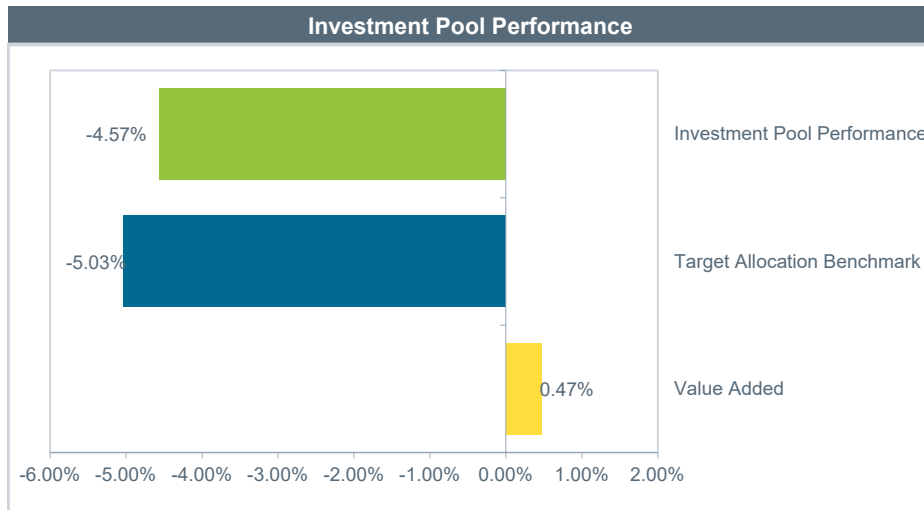


Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.

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 September 30, 2022**



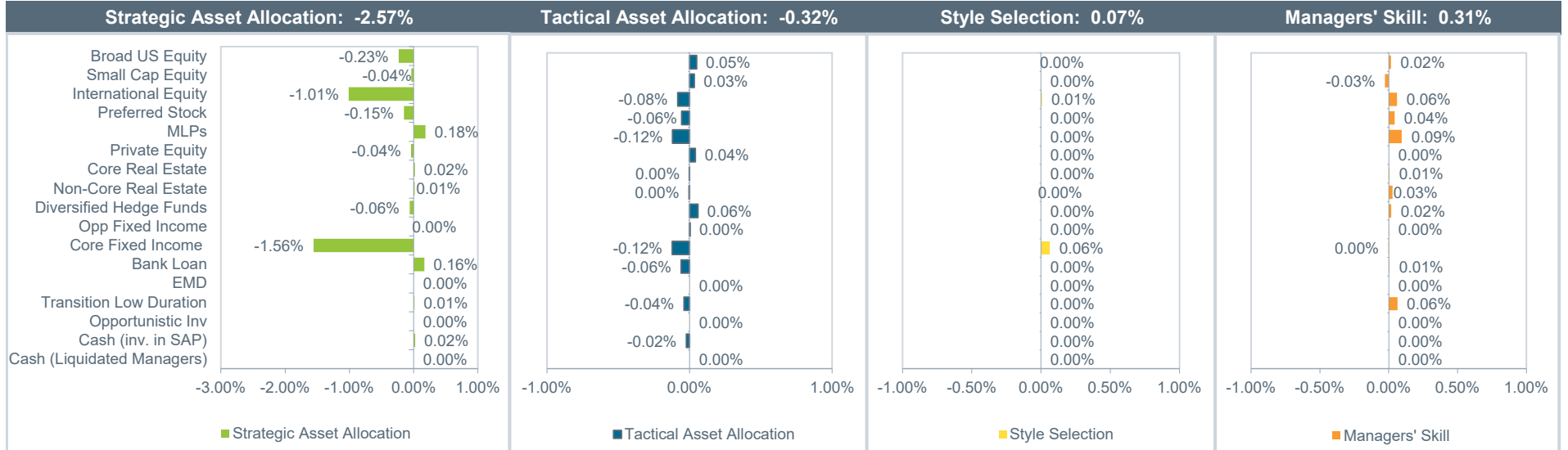
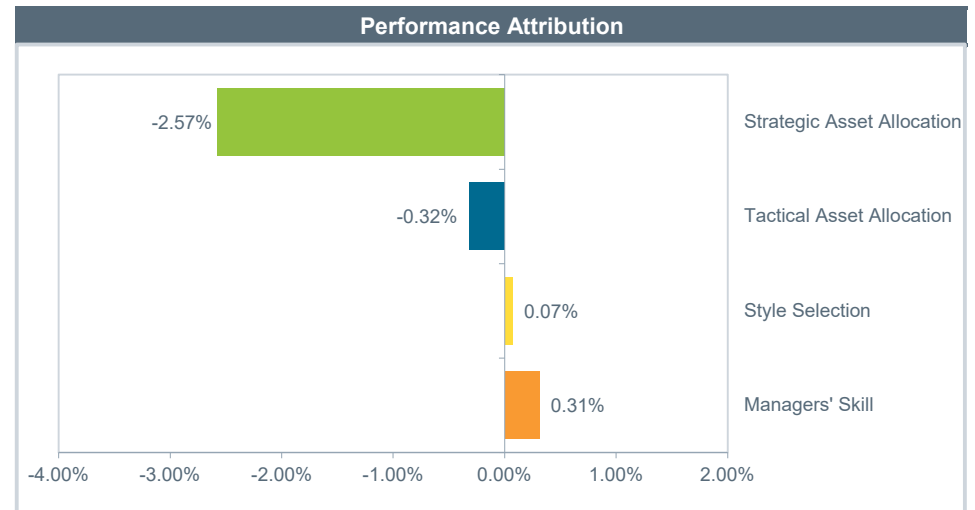
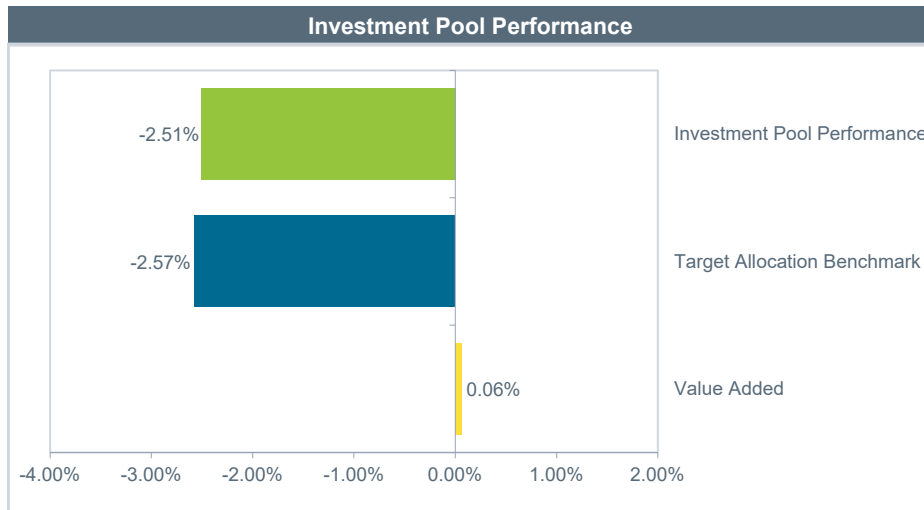
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.

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 September 30, 2022

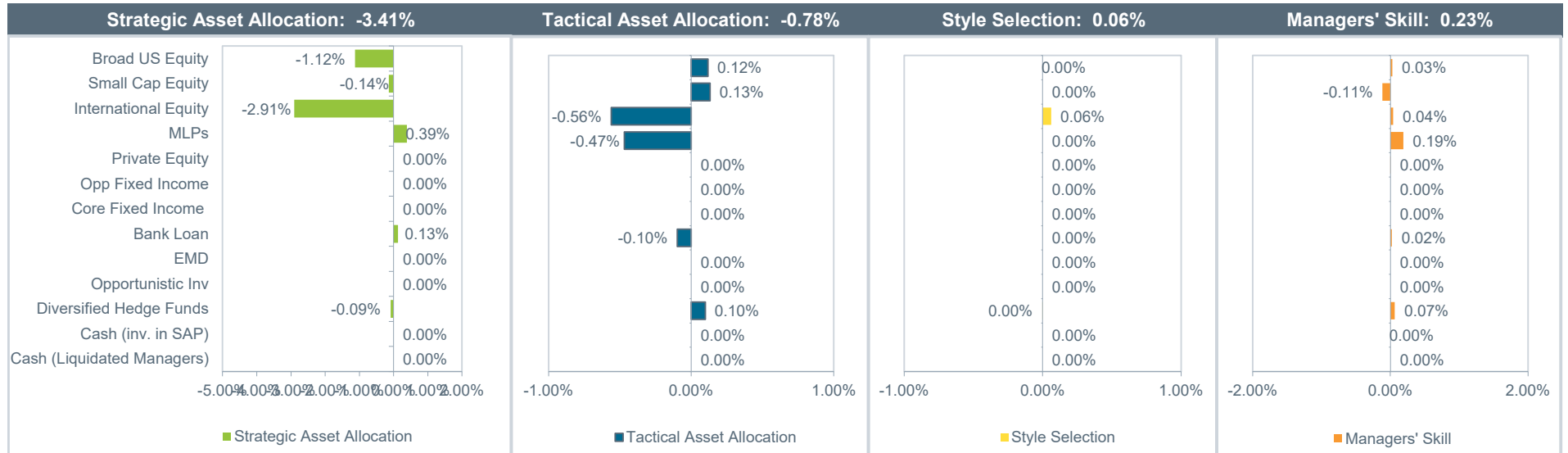
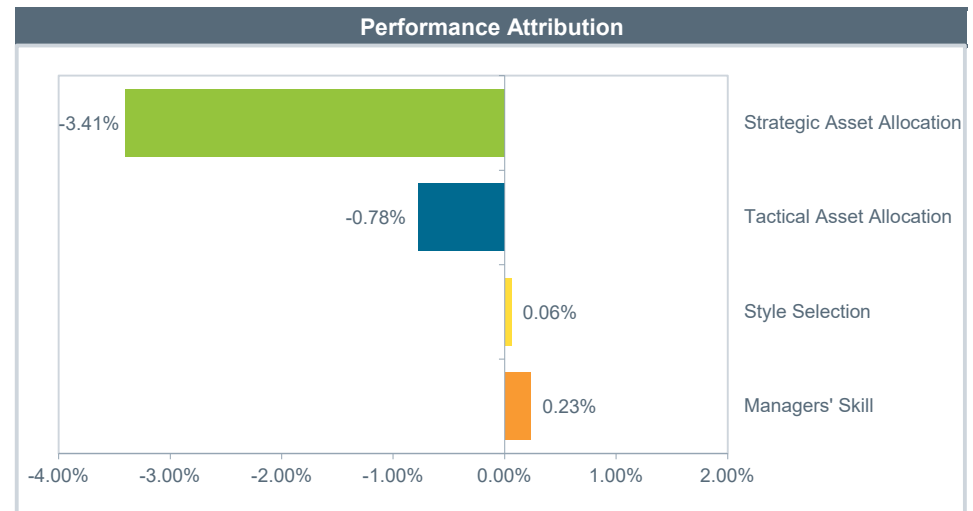
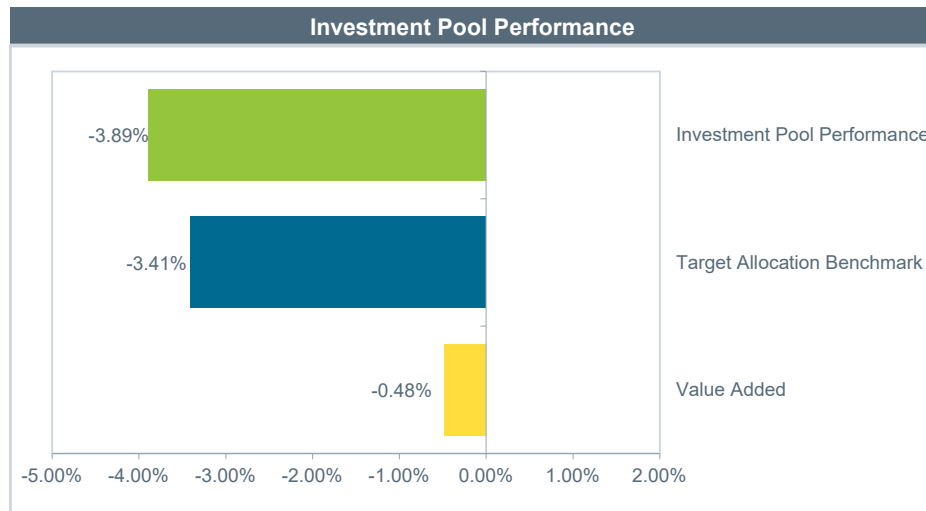


Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity.

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 September 30, 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

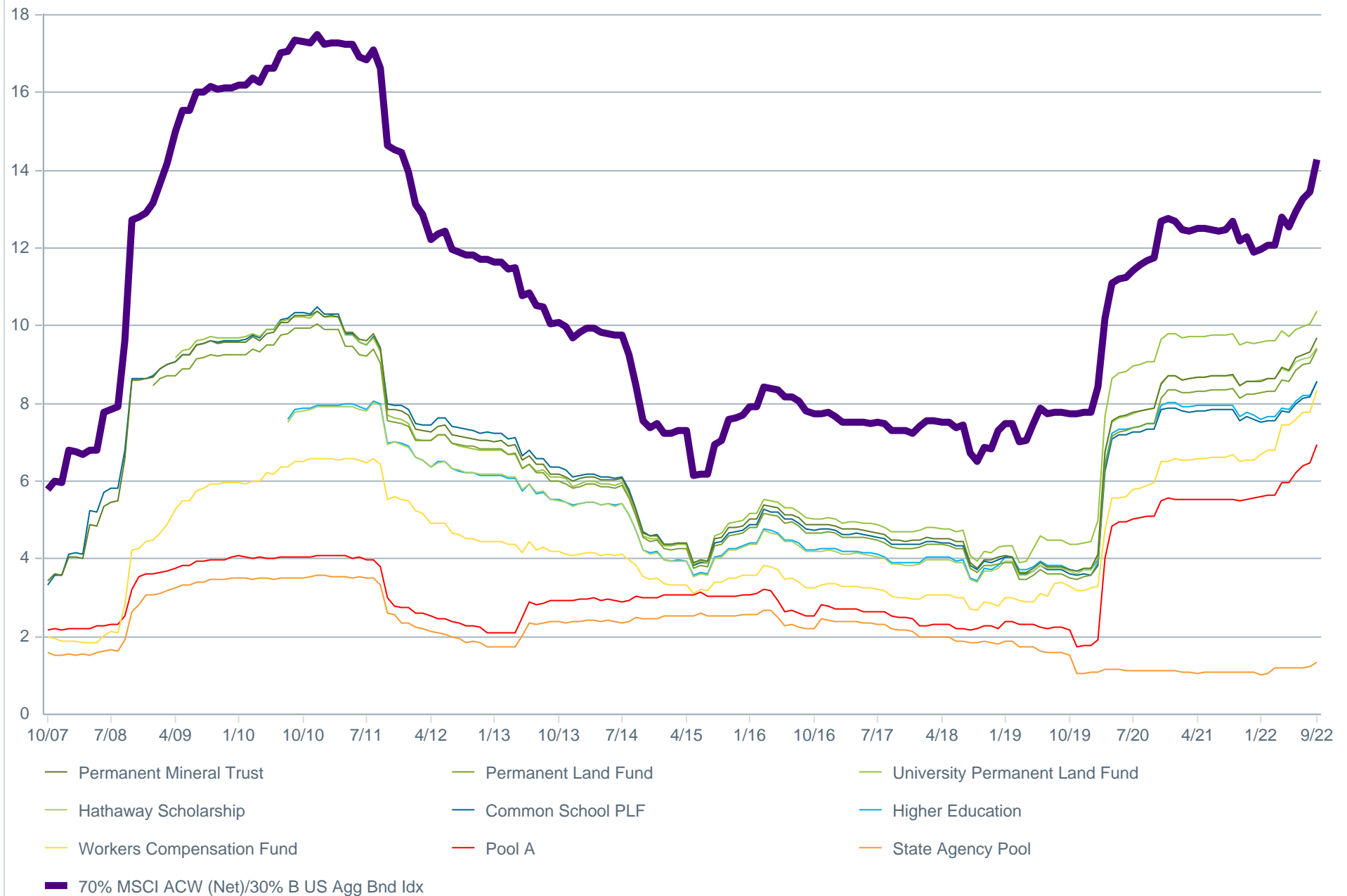
As of September 30, 2022

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Permanent Funds</b>	16,343,461,160	70.1	-2.6	-2.6	-10.6	-8.1	4.0	4.2	5.2	5.0	5.7	07/01/2002
Permanent Mineral Trust	8,697,099,434	37.3	-2.4	-2.4	-10.5	-7.6	5.1	4.7	5.7	5.4	5.8	06/01/2001
PMTF - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.3	4.3	5.3	5.2	5.2	
Difference			0.7	0.7	1.1	1.3	0.8	0.4	0.4	0.2	0.6	
<b>Common School Permanent Land Fund</b>	4,354,128,946	18.7	-2.1	-2.1	-8.6	-6.4	3.4	3.8	5.1	5.0	5.8	06/01/2001
Common School - Total Fund Index			-2.5	-2.5	-9.8	-7.7	2.4	3.2	4.5	4.7	5.0	
Difference			0.4	0.4	1.2	1.3	1.0	0.6	0.6	0.3	0.8	
<b>Permanent Land Fund</b>	238,245,123	1.0	-2.3	-2.3	-10.1	-7.1	5.2	4.8	5.7	5.4	5.2	02/01/2006
PLF - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.3	4.3	5.3	5.1	4.8	
Difference			0.8	0.8	1.5	1.8	0.9	0.5	0.4	0.3	0.4	
<b>University Permanent Land Fund</b>	27,536,347	0.1	-2.1	-2.1	-10.0	-6.8	5.2	5.1	6.1	5.7	5.2	05/01/2006
University PLF - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.1	4.5	5.6	5.4	4.9	
Difference			1.0	1.0	1.6	2.1	1.1	0.6	0.5	0.3	0.3	
<b>Hathaway Scholarship</b>	647,259,938	2.8	-1.5	-1.5	-8.5	-5.3	5.8	5.0	5.7	5.2	5.4	09/01/2007
Hathaway - Total Fund Index			-3.1	-3.1	-11.6	-8.9	4.2	4.2	5.0	4.8	4.9	
Difference			1.6	1.6	3.1	3.6	1.6	0.8	0.7	0.4	0.5	
<b>Higher Education</b>	128,277,456	0.5	-1.8	-1.8	-8.4	-6.3	3.2	3.5	4.6	4.4	4.8	09/01/2007
Higher Education - Total Fund Index			-2.5	-2.5	-9.8	-7.7	2.4	3.1	4.2	4.2	4.5	
Difference			0.7	0.7	1.4	1.4	0.8	0.4	0.4	0.2	0.3	
<b>Workers Compensation Fund</b>	2,250,913,917	9.6	-4.6	-4.6	-15.4	-13.6	0.8	3.0	3.8	3.6	5.0	06/01/2001
Workers Comp - Total Fund Index			-5.0	-5.0	-16.2	-14.7	-0.2	2.4	3.2	3.3	4.6	
Difference			0.4	0.4	0.8	1.1	1.0	0.6	0.6	0.3	0.4	
<b>Non-Permanent Funds</b>	6,985,558,926	29.9	-1.8	-1.8	-5.3	-5.3	0.1	1.1	1.6	1.4	3.3	07/01/2002
<b>Pool A</b>	329,173,615	1.4	-2.5	-2.5	-9.7	-8.3	2.1	2.7	2.9	2.4	4.0	01/01/2000
Pool A - Total Fund Index			-2.6	-2.6	-9.9	-8.4	1.4	2.1	2.3	2.1	4.5	
Difference			0.1	0.1	0.2	0.1	0.7	0.6	0.6	0.3	-0.5	
<b>LSRA</b>	1,750,383,575	7.5	-3.3	-3.3	-10.0	-9.2	0.5	N/A	N/A	N/A	0.6	07/01/2019
LSRA - Total Fund Index			-3.4	-3.4	-10.1	-9.4	0.5	N/A	N/A	N/A	0.5	
Difference			0.1	0.1	0.1	0.2	0.0	N/A	N/A	N/A	0.1	
<b>LSRA Long Term Reserve</b>	618,501,280	2.7	-3.9	-3.9	-15.3	-12.5	3.1	N/A	N/A	N/A	3.1	07/01/2019
LSRA Long Term Reserve - Total Fund Index			-3.4	-3.4	-14.7	-12.0	3.7	N/A	N/A	N/A	3.5	
Difference			-0.5	-0.5	-0.6	-0.5	-0.6	N/A	N/A	N/A	-0.4	
<b>LSRA Intermediate Term Reserve</b>	499,321,429	2.1	-4.5	-4.5	-15.0	-15.2	-3.1	N/A	N/A	N/A	-2.3	08/01/2019
LSRA Int Term Reserve - Total Fund Index			-4.8	-4.8	-14.6	-14.6	-3.3	N/A	N/A	N/A	-2.5	
Difference			0.3	0.3	-0.4	-0.6	0.2	N/A	N/A	N/A	0.2	
<b>LSRA Short Term Reserve</b>	632,560,866	2.7	-1.1	-1.1	-3.7	-3.9	N/A	N/A	N/A	N/A	-0.3	01/01/2020
LSRA Short Term Reserve - Total Fund Index			-1.5	-1.5	-4.5	-5.1	N/A	N/A	N/A	N/A	-0.8	
Difference			0.4	0.4	0.8	1.2	N/A	N/A	N/A	N/A	0.5	
<b>State Agency Pool</b>	4,906,001,737	21.0	-1.0	-1.0	-3.3	-3.6	-0.2	1.0	1.5	1.4	3.4	06/01/2001
State Agency Pool - Actual Allocation Index			-1.0	-1.0	-3.4	-3.7	-0.2	0.8	1.3	1.4	3.2	
Difference			0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.0	0.2	
<b>Total Fund</b>	23,329,020,086	100.0	-2.4	-2.4	-9.3	-7.4	2.9	3.4	4.2	4.0	5.1	10/01/1996
Wyoming State Total Fund Index			-2.8	-2.8	-10.2	-8.4	2.3	3.0	3.9	3.8	5.0	
Difference			0.4	0.4	0.9	1.0	0.6	0.4	0.3	0.2	0.1	

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

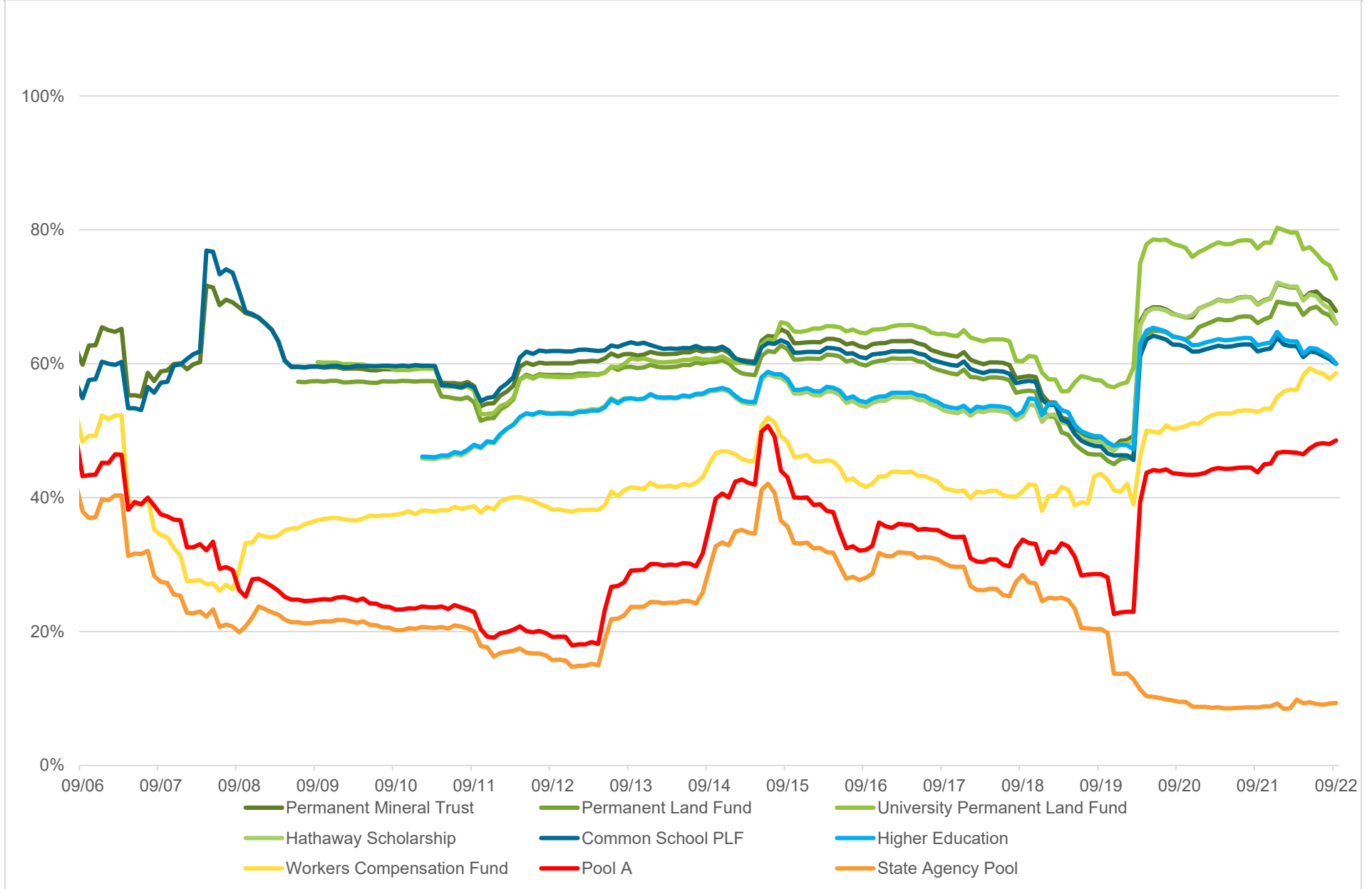


## Standard Deviation



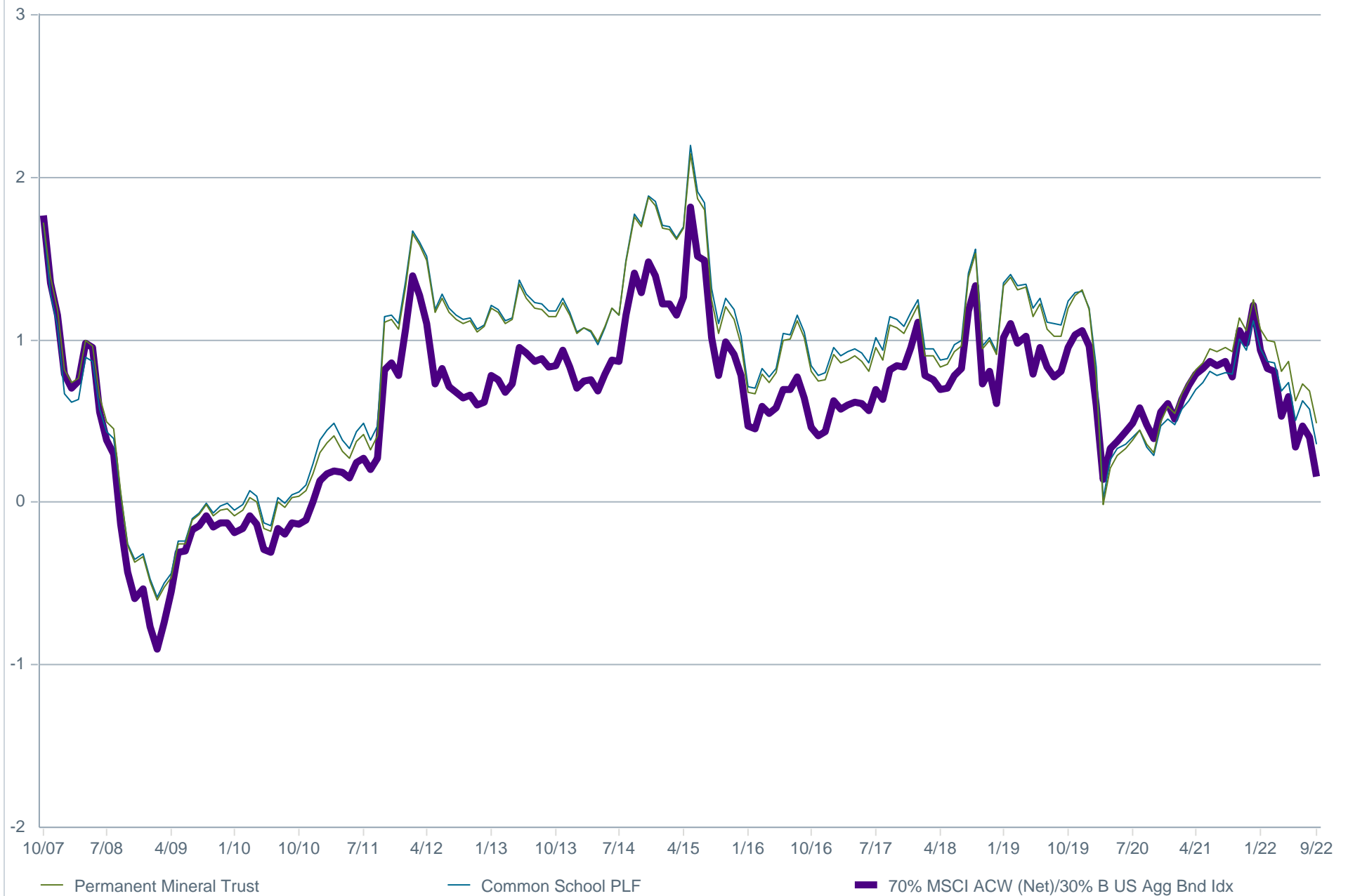
Performance shown is net of fees and excludes Public Purpose Investments (PPIs) and operational cash. Calculation is based on monthly periodicity.

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



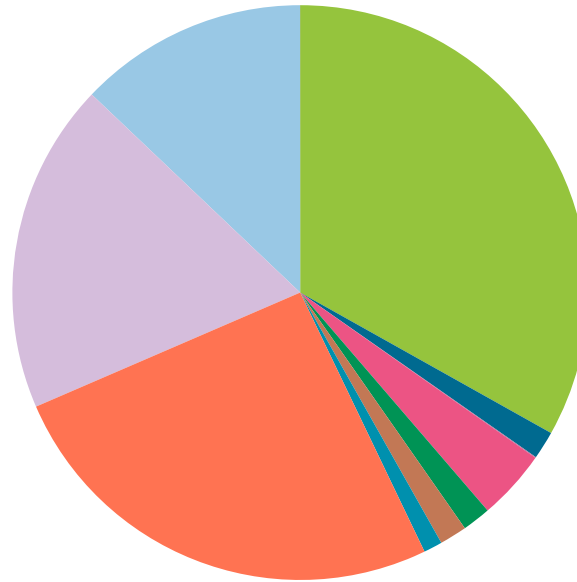
Performance shown is net of fees and excludes PPIs and operational cash. Calculation is based on monthly periodicity.

## Sharpe Ratio



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

September 30, 2022 : \$4,321,047,908



	Market Value (\$)	Allocation (%)
State Street All Cap	1,431,568,125	33.13
Domestic Equity Quantitative	68,643,700	1.59
Domestic Equity Quantamental	68,642	0.00
Internal Passive Large Cap Equity	36,856	0.00
UW Portfolio Mgmt Program	1,645,505	0.04
Van Berkomp	170,840,239	3.95
BlackRock Small Cap	68,813,896	1.59
Small Cap Equity Quantitative	66,217,405	1.53
Small Cap Equity Quantamental	45,190,098	1.05
Northern Trust	1,106,738,367	25.61
Arrowstreet	804,190,534	18.61
Harding Loevner	557,134,154	12.89

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



Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of September 30, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>All Cap US Equity Composite</b>	<b>1,500,317,323</b>	<b>34.72</b>	<b>-4.80</b>	<b>-4.80</b>	<b>-24.14</b>	<b>-15.89</b>	<b>7.49</b>	<b>8.23</b>	<b>10.31</b>	<b>N/A</b>	<b>28.36</b>	<b>9.47</b>	<b>11/01/2014</b>
All Cap US Equity Custom Index			-4.88	-4.88	-23.87	-15.47	8.16	8.90	11.10	11.53	28.71	9.31	
Difference			0.08	0.08	-0.27	-0.42	-0.67	-0.67	-0.79	N/A	-0.35	0.16	
<b>State Street All Cap</b>	<b>1,431,568,125</b>	<b>33.13</b>	<b>-4.89</b>	<b>-4.89</b>	<b>-23.89</b>	<b>-15.51</b>	<b>7.69</b>	<b>8.59</b>	<b>10.81</b>	<b>N/A</b>	<b>28.64</b>	<b>8.88</b>	<b>01/01/2015</b>
State Street All Cap Custom Index			-4.88	-4.88	-23.87	-15.47	7.74	8.55	10.81	11.36	28.71	8.89	
Difference			-0.01	-0.01	-0.02	-0.04	-0.05	0.04	0.00	N/A	-0.07	-0.01	
<b>Domestic Equity Quantamental</b>	<b>68,642</b>	<b>0.00</b>	<b>-1.40</b>	<b>-1.40</b>	<b>-30.94</b>	<b>-26.61</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-13.65</b>	<b>04/01/2021</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	-5.21	
Difference			3.48	3.48	-7.07	-11.14	N/A	N/A	N/A	N/A	N/A	-8.44	
<b>Domestic Equity Quantitative</b>	<b>68,643,700</b>	<b>1.59</b>	<b>-3.92</b>	<b>-3.92</b>	<b>-22.67</b>	<b>-14.67</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-10.02</b>	<b>06/01/2021</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	-9.91	
Difference			0.96	0.96	1.20	0.80	N/A	N/A	N/A	N/A	N/A	-0.11	
<b>Internal Passive Large Cap Equity</b>	<b>36,856</b>	<b>0.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-8.99</b>	<b>09/01/2022</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	-9.21	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.22	
<b>UW Portfolio Mgmt Program</b>	<b>1,645,505</b>	<b>0.04</b>	<b>-3.03</b>	<b>-3.03</b>	<b>-21.63</b>	<b>-14.45</b>	<b>6.19</b>	<b>6.39</b>	<b>9.06</b>	<b>9.41</b>	<b>23.24</b>	<b>5.31</b>	<b>04/01/2006</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	8.54	
Difference			1.85	1.85	2.24	1.02	-1.97	-2.85	-2.34	-2.29	-5.47	-3.23	
<b>Small Cap US Equity Composite</b>	<b>351,061,639</b>	<b>8.12</b>	<b>-3.38</b>	<b>-3.38</b>	<b>-24.60</b>	<b>-21.56</b>	<b>3.71</b>	<b>1.73</b>	<b>6.18</b>	<b>N/A</b>	<b>17.53</b>	<b>4.07</b>	<b>11/01/2014</b>
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	5.92	
Difference			-1.19	-1.19	0.50	1.94	-0.58	-1.82	-1.33	N/A	2.71	-1.85	
<b>Van Berkomp</b>	<b>170,840,239</b>	<b>3.95</b>	<b>-3.12</b>	<b>-3.12</b>	<b>-23.03</b>	<b>-19.25</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>15.75</b>	<b>3.75</b>	<b>03/01/2020</b>
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	6.05	
Difference			-0.93	-0.93	2.07	4.25	N/A	N/A	N/A	N/A	0.93	-2.30	
<b>BlackRock Small Cap</b>	<b>68,813,896</b>	<b>1.59</b>	<b>-1.92</b>	<b>-1.92</b>	<b>-24.90</b>	<b>-22.98</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>15.44</b>	<b>7.45</b>	<b>08/01/2020</b>
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	6.82	
Difference			0.27	0.27	0.20	0.52	N/A	N/A	N/A	N/A	0.62	0.63	

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 September 30, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Small Cap Equity Quantamental</b>	<b>45,190,098</b>	<b>1.05</b>	<b>-4.35</b>	<b>-4.35</b>	<b>-30.54</b>	<b>-28.05</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-21.51</b>	<b>06/01/2021</b>
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	-19.74	
Difference			-2.16	-2.16	-5.44	-4.55	N/A	N/A	N/A	N/A	N/A	-1.77	
<b>Small Cap Equity Quantitative</b>	<b>66,217,405</b>	<b>1.53</b>	<b>-4.90</b>	<b>-4.90</b>	<b>-22.61</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-22.12</b>	<b>11/01/2021</b>
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	-26.62	
Difference			-2.71	-2.71	2.49	N/A	N/A	N/A	N/A	N/A	N/A	4.50	

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.

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Asset Allocation & Performance

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	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Int'l Equity Composite</b>	<b>2,468,023,442</b>	<b>57.12</b>	<b>-9.11</b>	<b>-9.11</b>	<b>-25.29</b>	<b>-23.67</b>	<b>1.61</b>	<b>1.07</b>	<b>4.77</b>	<b>4.19</b>	<b>9.98</b>	<b>4.77</b>	<b>01/01/2004</b>
International Equity Custom Index			-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	7.82	3.92	
Difference			0.80	0.80	1.21	1.50	3.13	1.88	1.48	1.18	2.16	0.85	
<b>Northern Trust</b>	<b>1,106,738,367</b>	<b>25.61</b>	<b>-9.90</b>	<b>-9.90</b>	<b>-26.35</b>	<b>-24.91</b>	<b>-1.49</b>	<b>-0.68</b>	<b>3.39</b>	<b>3.13</b>	<b>7.83</b>	<b>3.32</b>	<b>08/01/2010</b>
MSCI ACW Ex US Index (USD) (Net)			-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	7.82	3.21	
Difference			0.01	0.01	0.15	0.26	0.03	0.13	0.10	0.12	0.01	0.11	
<b>Arrowstreet</b>	<b>804,190,534</b>	<b>18.61</b>	<b>-9.40</b>	<b>-9.40</b>	<b>-22.15</b>	<b>-22.09</b>	<b>6.21</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>13.92</b>	<b>2.49</b>	<b>03/01/2018</b>
MSCI ACW Ex US IM Index (USD) (Net)			-9.69	-9.69	-26.92	-25.72	-1.27	-0.78	3.38	3.19	8.53	-2.08	
Difference			0.29	0.29	4.77	3.63	7.48	N/A	N/A	N/A	5.39	4.57	
<b>Harding Loevner</b>	<b>557,134,154</b>	<b>12.89</b>	<b>-7.30</b>	<b>-7.30</b>	<b>-27.43</b>	<b>-23.64</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.19</b>	<b>-2.05</b>	<b>01/01/2020</b>
MSCI ACW Ex US Index (USD) (Net)			-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	7.82	-4.66	
Difference			2.61	2.61	-0.93	1.53	N/A	N/A	N/A	N/A	0.37	2.61	

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.

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Asset Allocation & Performance

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	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>All Cap US Equity Composite</b>	<b>1,500,317,323</b>	<b>34.72</b>	<b>-4.79</b>	<b>-4.79</b>	<b>-24.12</b>	<b>-15.86</b>	<b>7.53</b>	<b>8.30</b>	<b>10.41</b>	<b>N/A</b>	<b>28.41</b>	<b>9.59</b>	<b>11/01/2014</b>
All Cap US Equity Custom Index			-4.88	-4.88	-23.87	-15.47	8.16	8.90	11.10	11.53	28.71	9.31	
Difference			0.09	0.09	-0.25	-0.39	-0.63	-0.60	-0.69	N/A	-0.30	0.28	
<b>State Street All Cap</b>	<b>1,431,568,125</b>	<b>33.13</b>	<b>-4.88</b>	<b>-4.88</b>	<b>-23.86</b>	<b>-15.47</b>	<b>7.73</b>	<b>8.64</b>	<b>10.86</b>	<b>N/A</b>	<b>28.69</b>	<b>8.92</b>	<b>01/01/2015</b>
State Street All Cap Custom Index			-4.88	-4.88	-23.87	-15.47	7.74	8.55	10.81	11.36	28.71	8.89	
Difference			0.00	0.00	0.01	0.00	-0.01	0.09	0.05	N/A	-0.02	0.03	
IM U.S. All Cap Equity (SA+CF) Median			-4.53	-4.53	-23.72	-16.73	6.60	7.68	9.93	10.73	25.28	8.08	
State Street All Cap Rank			56	56	53	47	37	39	35	N/A	27	38	
<b>Domestic Equity Quantamental</b>	<b>68,642</b>	<b>0.00</b>	<b>-1.40</b>	<b>-1.40</b>	<b>-30.94</b>	<b>-26.61</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-13.64</b>	<b>04/01/2021</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	-5.21	
Difference			3.48	3.48	-7.07	-11.14	N/A	N/A	N/A	N/A	N/A	-8.43	
IM U.S. Large Cap Core Equity (SA+CF) Median			-4.75	-4.75	-22.84	-15.09	7.88	8.90	10.96	11.70	27.80	-5.22	
Domestic Equity Quantamental Rank			6	6	99	98	N/A	N/A	N/A	N/A	N/A	98	
<b>Domestic Equity Quantitative</b>	<b>68,643,700</b>	<b>1.59</b>	<b>-3.92</b>	<b>-3.92</b>	<b>-22.67</b>	<b>-14.67</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-10.02</b>	<b>06/01/2021</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	-9.91	
Difference			0.96	0.96	1.20	0.80	N/A	N/A	N/A	N/A	N/A	-0.11	
IM U.S. Large Cap Core Equity (SA+CF) Median			-4.75	-4.75	-22.84	-15.09	7.88	8.90	10.96	11.70	27.80	-9.93	
Domestic Equity Quantitative Rank			24	24	46	46	N/A	N/A	N/A	N/A	N/A	51	
<b>Internal Passive Large Cap Equity</b>	<b>36,856</b>	<b>0.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-8.98</b>	<b>09/01/2022</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	-9.21	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.23	
IM U.S. Large Cap Core Equity (MF) Median			-5.00	-5.00	-23.96	-16.63	8.04	9.26	11.27	11.73	27.89	-8.99	
Internal Passive Large Cap Equity Rank			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50	
<b>UW Portfolio Mgmt Program</b>	<b>1,645,505</b>	<b>0.04</b>	<b>-3.03</b>	<b>-3.03</b>	<b>-21.63</b>	<b>-14.45</b>	<b>6.19</b>	<b>6.39</b>	<b>9.06</b>	<b>9.41</b>	<b>23.24</b>	<b>5.31</b>	<b>04/01/2006</b>
S&P 500 Index (Cap Wtd)			-4.88	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70	28.71	8.54	
Difference			1.85	1.85	2.24	1.02	-1.97	-2.85	-2.34	-2.29	-5.47	-3.23	
IM U.S. Large Cap Core Equity (SA+CF) Median			-4.75	-4.75	-22.84	-15.09	7.88	8.90	10.96	11.70	27.80	8.61	
UW Portfolio Mgmt Program Rank			14	14	38	44	76	90	89	94	80	99	

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.

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	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	351,061,639	8.12	-3.26	-3.26	-24.32	-21.17	4.18	2.15	6.68	N/A	18.21	4.58	11/01/2014
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	5.92	
Difference			-1.07	-1.07	0.78	2.33	-0.11	-1.40	-0.83	N/A	3.39	-1.34	
Van Berkom	170,840,239	3.95	-2.94	-2.94	-22.57	-18.60	N/A	N/A	N/A	N/A	16.73	4.58	03/01/2020
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	6.05	
Difference			-0.75	-0.75	2.53	4.90	N/A	N/A	N/A	N/A	1.91	-1.47	
IM U.S. Small Cap Core Equity (SA+CF) Median			-3.27	-3.27	-23.28	-18.85	6.54	6.05	9.08	10.38	24.14	9.04	
Van Berkom Rank			46	46	39	48	N/A	N/A	N/A	N/A	86	95	
BlackRock Small Cap	68,813,896	1.59	-1.82	-1.82	-24.65	-22.64	N/A	N/A	N/A	N/A	15.95	7.93	08/01/2020
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	6.82	
Difference			0.37	0.37	0.45	0.86	N/A	N/A	N/A	N/A	1.13	1.11	
IM U.S. Small Cap Core Equity (SA+CF) Median			-3.27	-3.27	-23.28	-18.85	6.54	6.05	9.08	10.38	24.14	9.45	
BlackRock Small Cap Rank			22	22	62	80	N/A	N/A	N/A	N/A	89	70	
Small Cap Equity Quantamental	45,190,098	1.05	-4.35	-4.35	-30.54	-28.05	N/A	N/A	N/A	N/A	N/A	-21.50	06/01/2021
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	-19.74	
Difference			-2.16	-2.16	-5.44	-4.55	N/A	N/A	N/A	N/A	N/A	-1.76	
IM U.S. Small Cap Core Equity (SA+CF) Median			-3.27	-3.27	-23.28	-18.85	6.54	6.05	9.08	10.38	24.14	-15.05	
Small Cap Equity Quantamental Rank			74	74	96	96	N/A	N/A	N/A	N/A	N/A	96	
Small Cap Equity Quantitative	66,217,405	1.53	-4.90	-4.90	-22.61	N/A	N/A	N/A	N/A	N/A	N/A	-22.12	11/01/2021
Russell 2000 Index			-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	14.82	-26.62	
Difference			-2.71	-2.71	2.49	N/A	N/A	N/A	N/A	N/A	N/A	4.50	
IM U.S. Small Cap Core Equity (SA+CF) Median			-3.27	-3.27	-23.28	-18.85	6.54	6.05	9.08	10.38	24.14	-22.50	
Small Cap Equity Quantitative Rank			83	83	40	N/A	N/A	N/A	N/A	N/A	N/A	50	

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  
Asset Allocation & Performance

As of September 30, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Int'l Equity Composite</b>	<b>2,468,023,442</b>	<b>57.12</b>	<b>-9.05</b>	<b>-9.05</b>	<b>-25.15</b>	<b>-23.48</b>	<b>1.85</b>	<b>1.29</b>	<b>5.00</b>	<b>4.43</b>	<b>10.25</b>	<b>4.97</b>	<b>01/01/2004</b>
International Equity Custom Index			-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	7.82	3.92	
Difference			0.86	0.86	1.35	1.69	3.37	2.10	1.71	1.42	2.43	1.05	
<b>Northern Trust</b>	<b>1,106,738,367</b>	<b>25.61</b>	<b>-9.90</b>	<b>-9.90</b>	<b>-26.34</b>	<b>-24.89</b>	<b>-1.46</b>	<b>-0.65</b>	<b>3.43</b>	<b>3.16</b>	<b>7.86</b>	<b>3.36</b>	<b>08/01/2010</b>
MSCI ACW Ex US Index (USD) (Net)			-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	7.82	3.21	
Difference			0.01	0.01	0.16	0.28	0.06	0.16	0.14	0.15	0.04	0.15	
<b>Arrowstreet</b>	<b>804,190,534</b>	<b>18.61</b>	<b>-9.31</b>	<b>-9.31</b>	<b>-21.92</b>	<b>-21.78</b>	<b>6.64</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>14.38</b>	<b>2.92</b>	<b>03/01/2018</b>
MSCI ACW Ex US IM Index (USD) (Net)			-9.69	-9.69	-26.92	-25.72	-1.27	-0.78	3.38	3.19	8.53	-2.08	
Difference			0.38	0.38	5.00	3.94	7.91	N/A	N/A	N/A	5.85	5.00	
IM All ACWI Ex US (SA+CF) Median			-9.43	-9.43	-27.89	-26.02	-0.49	0.27	3.91	4.70	9.59	-0.95	
Arrowstreet Rank			49	49	8	14	1	N/A	N/A	N/A	12	5	
<b>Harding Loevner</b>	<b>557,134,154</b>	<b>12.89</b>	<b>-7.22</b>	<b>-7.22</b>	<b>-27.19</b>	<b>-23.31</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.65</b>	<b>-1.62</b>	<b>01/01/2020</b>
MSCI ACW Ex US Index (USD) (Net)			-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	7.82	-4.66	
Difference			2.69	2.69	-0.69	1.86	N/A	N/A	N/A	N/A	0.83	3.04	
IM All ACWI Ex US (SA+CF) Median			-9.43	-9.43	-27.89	-26.02	-0.49	0.27	3.91	4.70	9.59	-3.79	
Harding Loevner Rank			7	7	44	22	N/A	N/A	N/A	N/A	59	16	

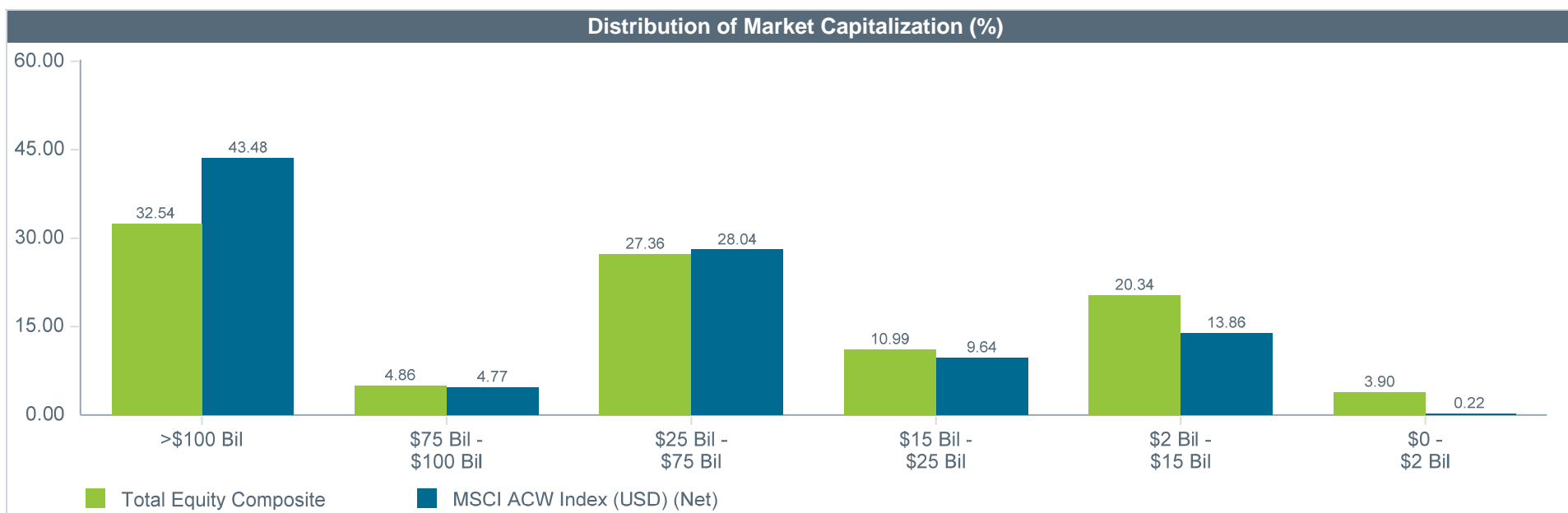
Performance shown is gross of fees. International Equity Custom Index consists of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter. The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter. SSGA 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 Composite vs. MSCI ACW Index (USD) (Net)  
Portfolio Characteristics

As of September 30, 2022

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	2.42	4.34	-1.92	1.22
Microsoft Corp	2.00	3.21	-1.21	-9.12
Nokia OYJ	1.24	0.05	1.19	-7.00
Amazon.com Inc	1.12	2.01	-0.89	6.39
Roche Holding AG	1.08	0.45	0.63	-1.21
Taiwan Semiconductor Mfg (ADR)	0.83	0.64	0.19	-15.65
Tesla Inc	0.79	1.36	-0.57	18.17
Alphabet Inc	0.66	1.12	-0.46	-12.22
Shell Plc	0.66	0.36	0.30	-2.54
Tencent Holdings LTD	0.61	0.41	0.20	-24.85
% of Portfolio	11.41	13.95	-2.54	

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	199,297	301,473
Median Mkt. Cap (\$M)	4,601	10,382
Price/Earnings Ratio	11.80	14.53
Price/Book Ratio	2.74	3.15
5 Yr. EPS Growth Rate (%)	16.37	16.63
Current Yield (%)	3.25	2.51
Beta (5 Years, Monthly)	0.99	1.00
Number of Securities	4,938	2,900

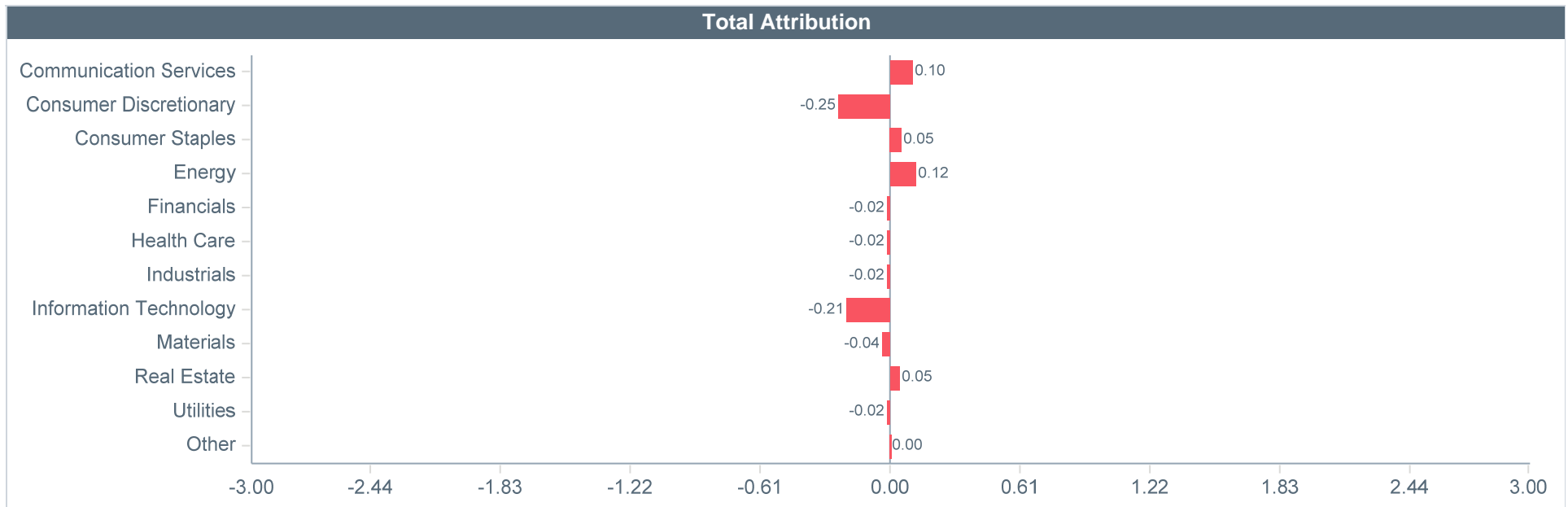
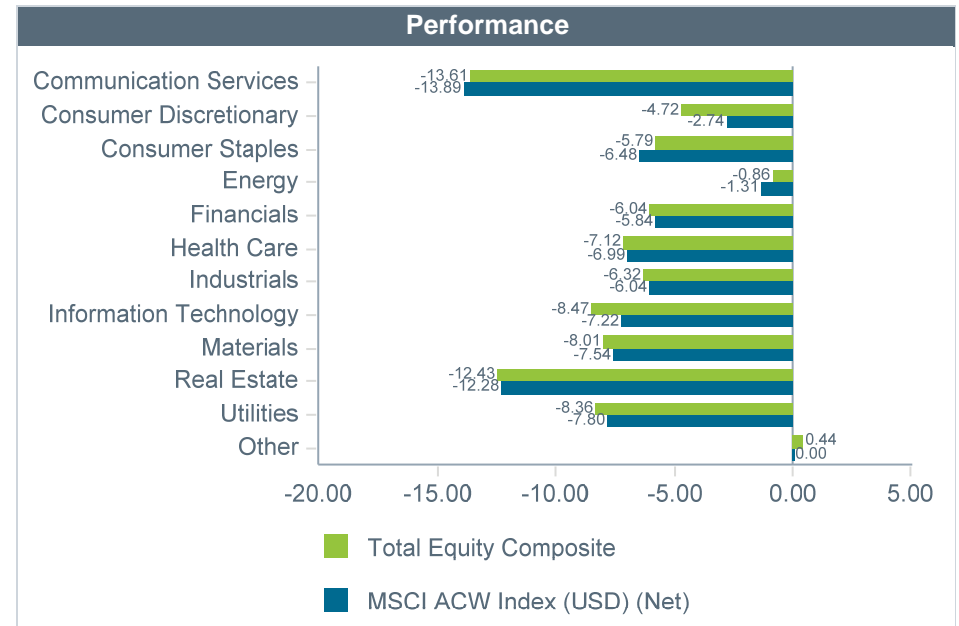
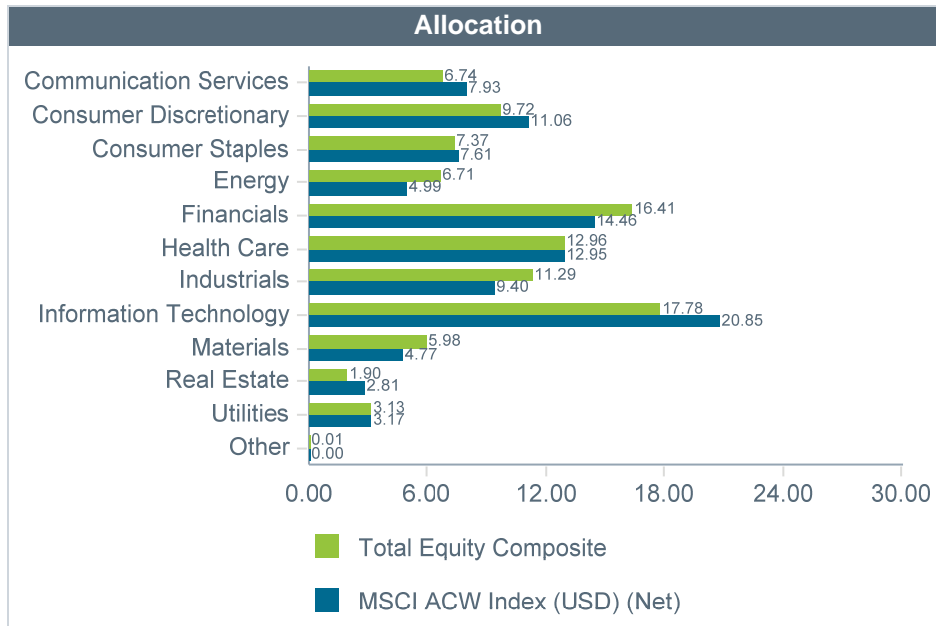


A stock with multiple share classes may be shown twice in the Top Ten Equity Holdings.



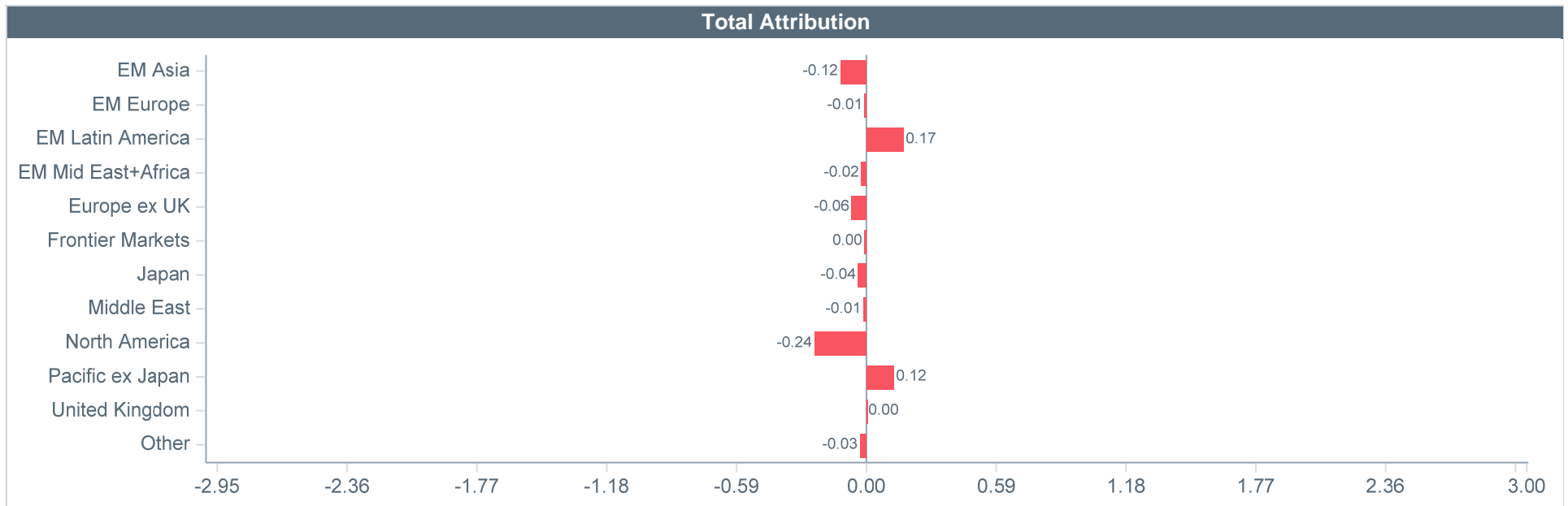
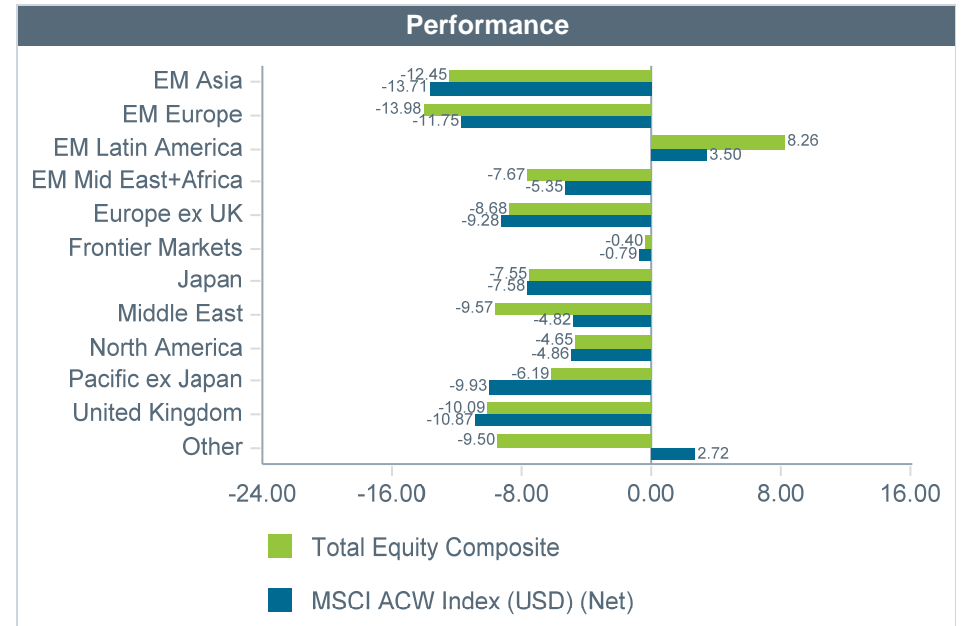
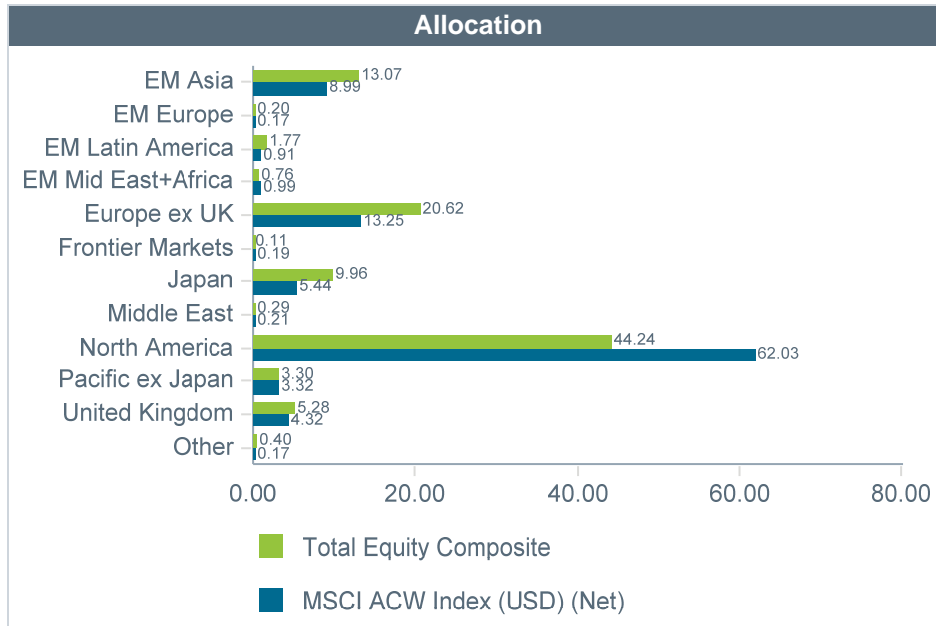
Wyoming State Treasurer's Office  
Total Equity Composite vs. MSCI ACW Index (USD) (Net)  
Buy and Hold Sector Attribution Graph

1 Quarter Ending September 30, 2022



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

1 Quarter Ending September 30, 2022

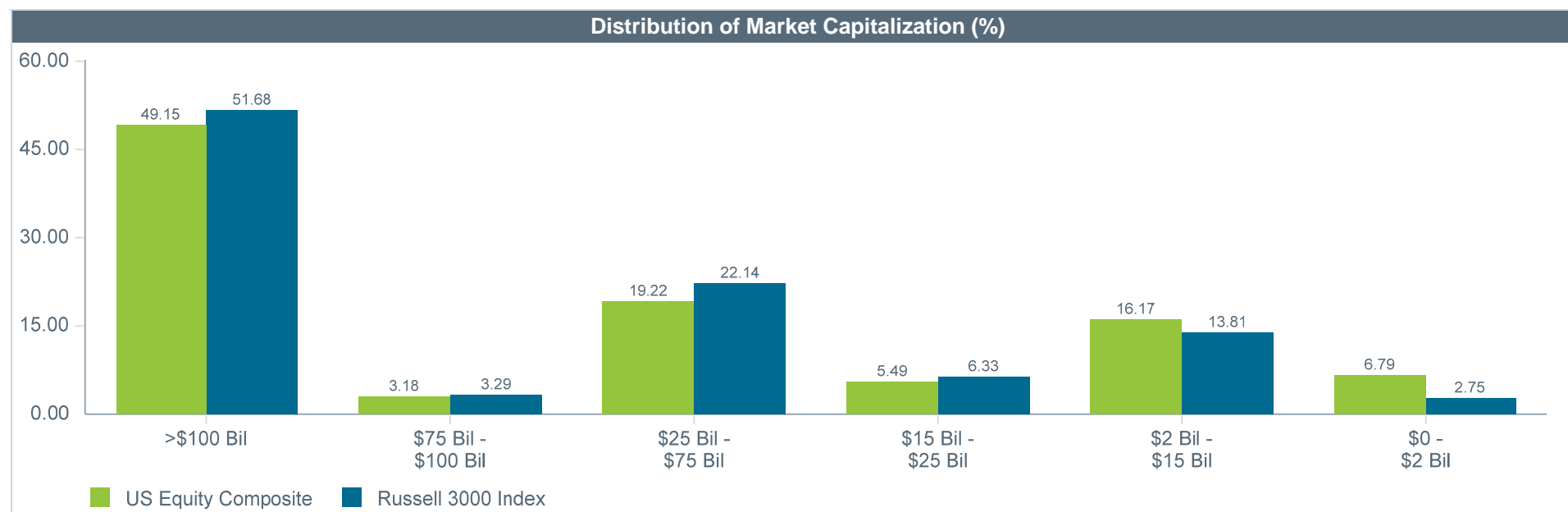


Wyoming State Treasurer's Office  
US Equity Composite vs. Russell 3000 Index  
Portfolio Characteristics

As of September 30, 2022

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	5.83	5.93	-0.10	1.22
Microsoft Corp	4.83	4.89	-0.06	-9.12
Amazon.com Inc	2.70	2.82	-0.12	6.39
Tesla Inc	1.91	1.89	0.02	18.17
Alphabet Inc	1.58	1.61	-0.03	-12.22
Alphabet Inc	1.42	1.46	-0.04	-12.09
Unitedhealth Group Inc	1.32	1.33	-0.01	-1.36
Berkshire Hathaway Inc	1.30	1.35	-0.05	-2.20
Johnson & Johnson	1.17	1.21	-0.04	-7.35
Exxon Mobil Corp	1.00	1.02	-0.02	2.91
% of Portfolio	23.06	23.51	-0.45	

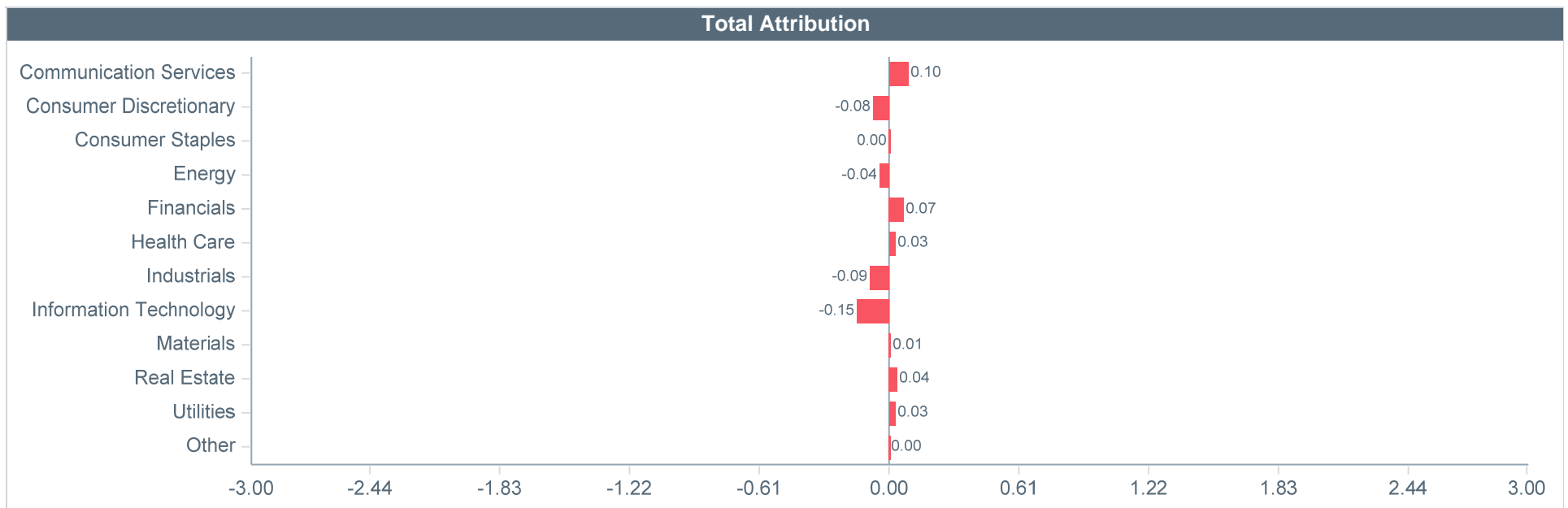
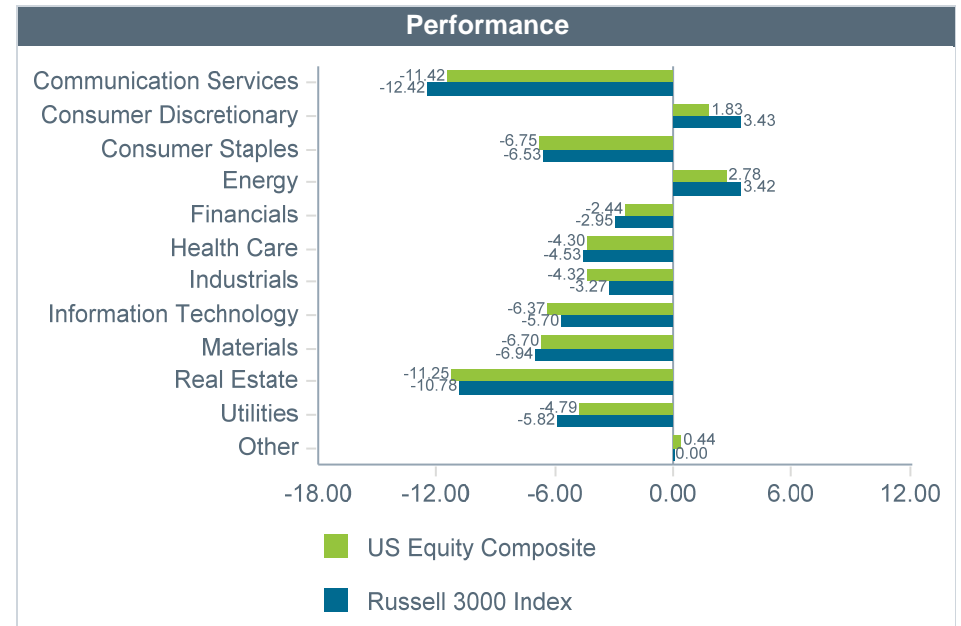
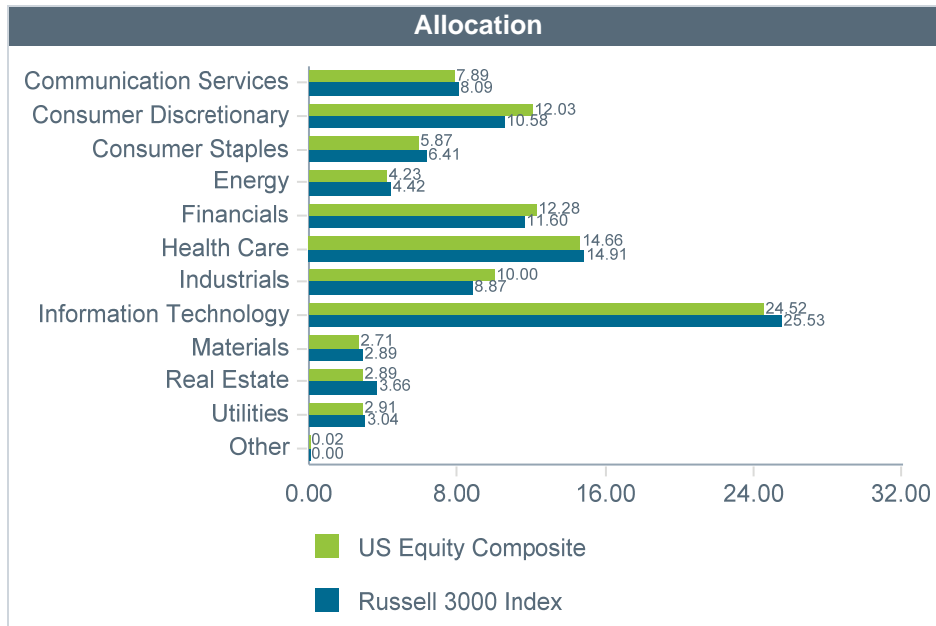
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	384,547	395,275
Median Mkt. Cap (\$M)	2,532	1,825
Price/Earnings Ratio	16.48	17.19
Price/Book Ratio	3.42	3.54
5 Yr. EPS Growth Rate (%)	18.21	18.27
Current Yield (%)	1.73	1.79
Beta (5 Years, Monthly)	0.99	1.00
Number of Securities	2,133	2,986



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

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

1 Quarter Ending September 30, 2022

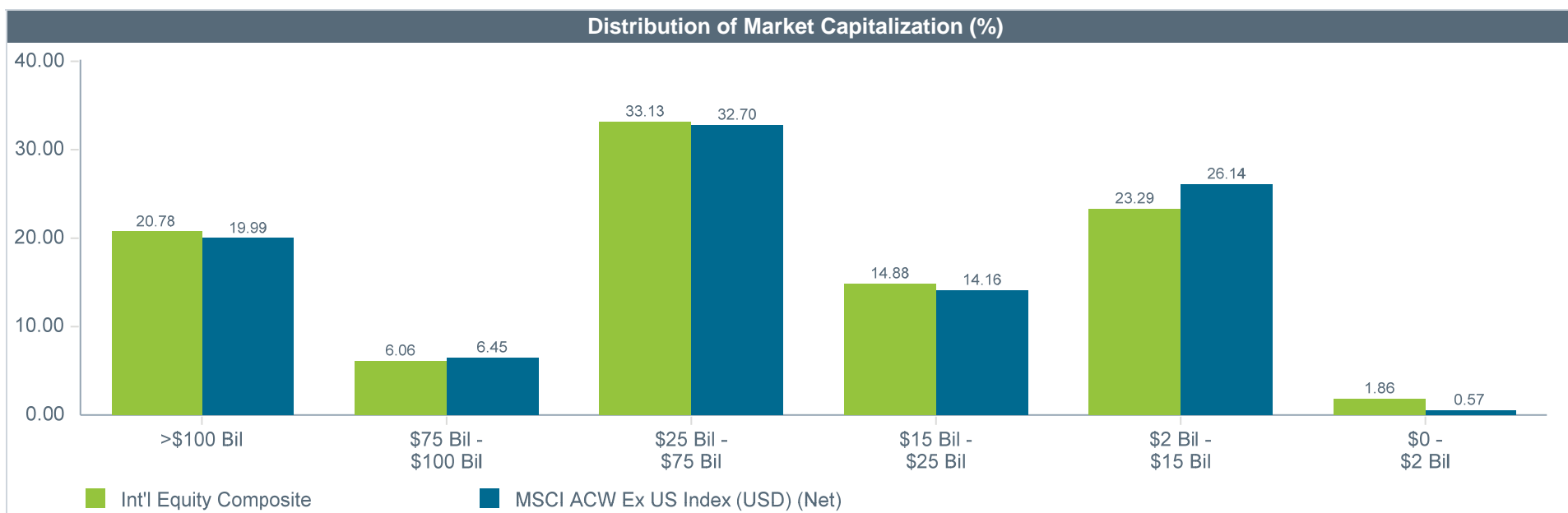


Wyoming State Treasurer's Office  
Int'l Equity Composite vs. MSCI ACW Ex US Index (USD) (Net)  
Portfolio Characteristics

As of September 30, 2022

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Nokia OYJ	2.12	0.12	2.00	-7.00
Roche Holding AG	1.85	1.18	0.67	-1.21
Taiwan Semiconductor Mfg (ADR)	1.41	1.67	-0.26	-15.65
Shell Plc	1.12	0.95	0.17	-2.54
Tencent Holdings LTD	1.05	1.08	-0.03	-24.85
Novo Nordisk A/S	1.03	0.85	0.18	-8.90
Samsung Electronics Co Ltd	0.99	0.90	0.09	-15.95
LOreal SA	0.92	0.40	0.52	-5.93
Total SA	0.90	0.60	0.30	-8.83
ASML Holding NV	0.87	0.88	-0.01	-10.56
% of Portfolio	12.26	8.63	3.63	

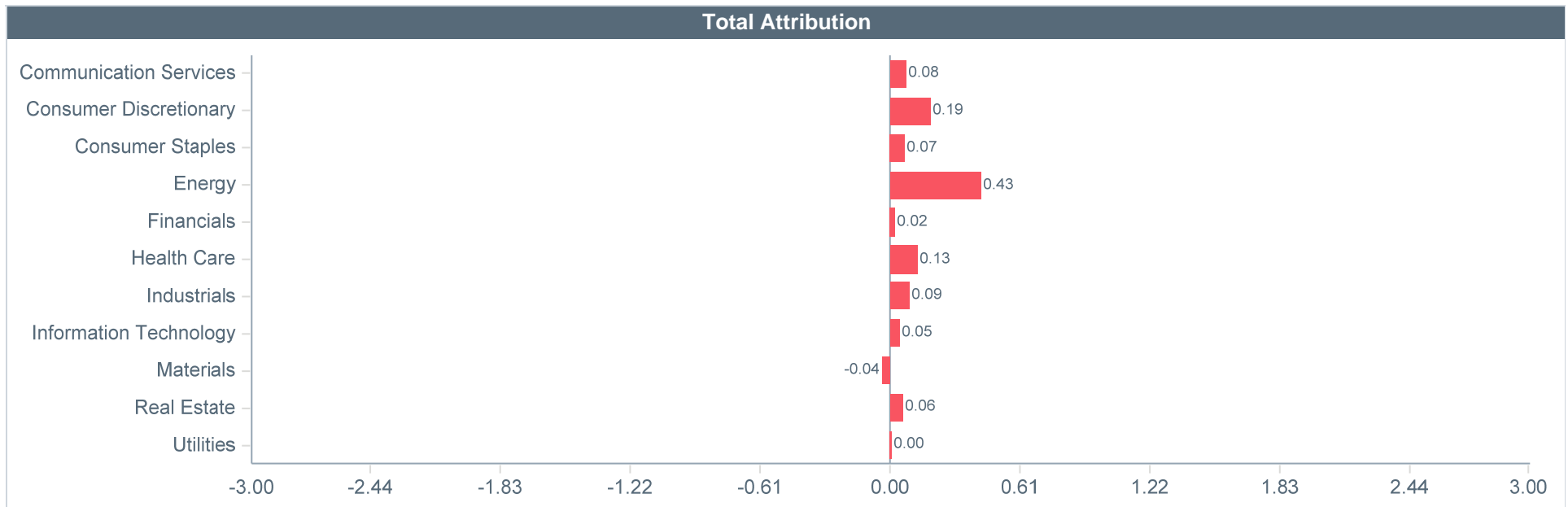
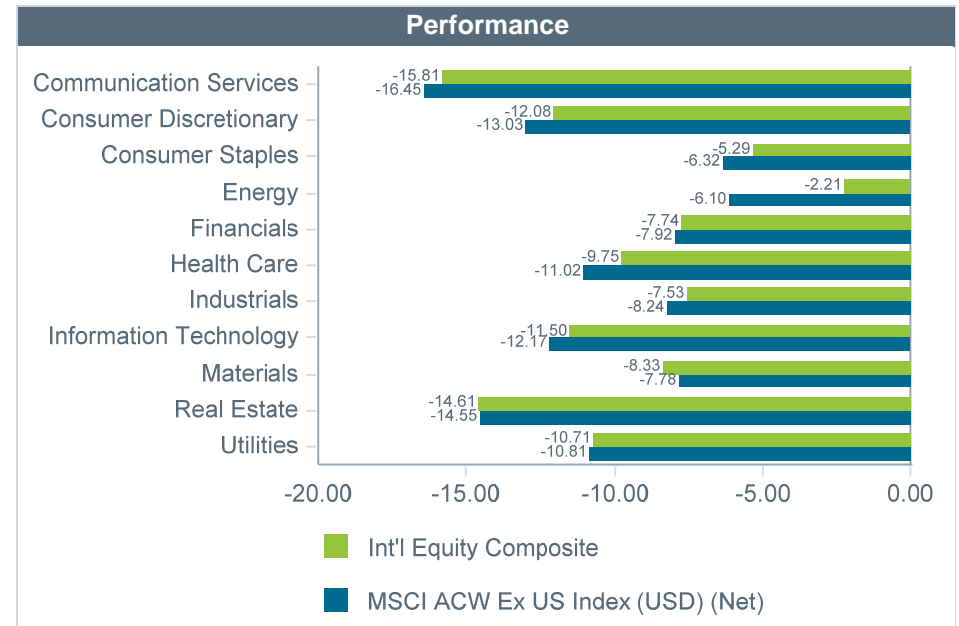
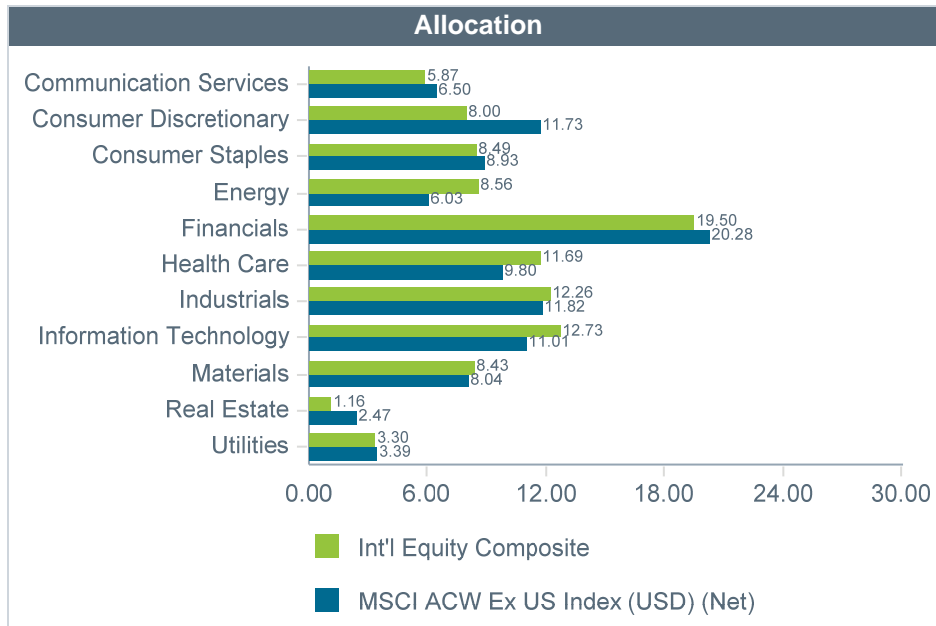
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	68,074	66,812
Median Mkt. Cap (\$M)	6,445	7,549
Price/Earnings Ratio	9.70	10.91
Price/Book Ratio	2.31	2.35
5 Yr. EPS Growth Rate (%)	14.89	13.39
Current Yield (%)	4.34	3.65
Beta (5 Years, Monthly)	1.01	1.00
Number of Securities	2,825	2,274



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

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

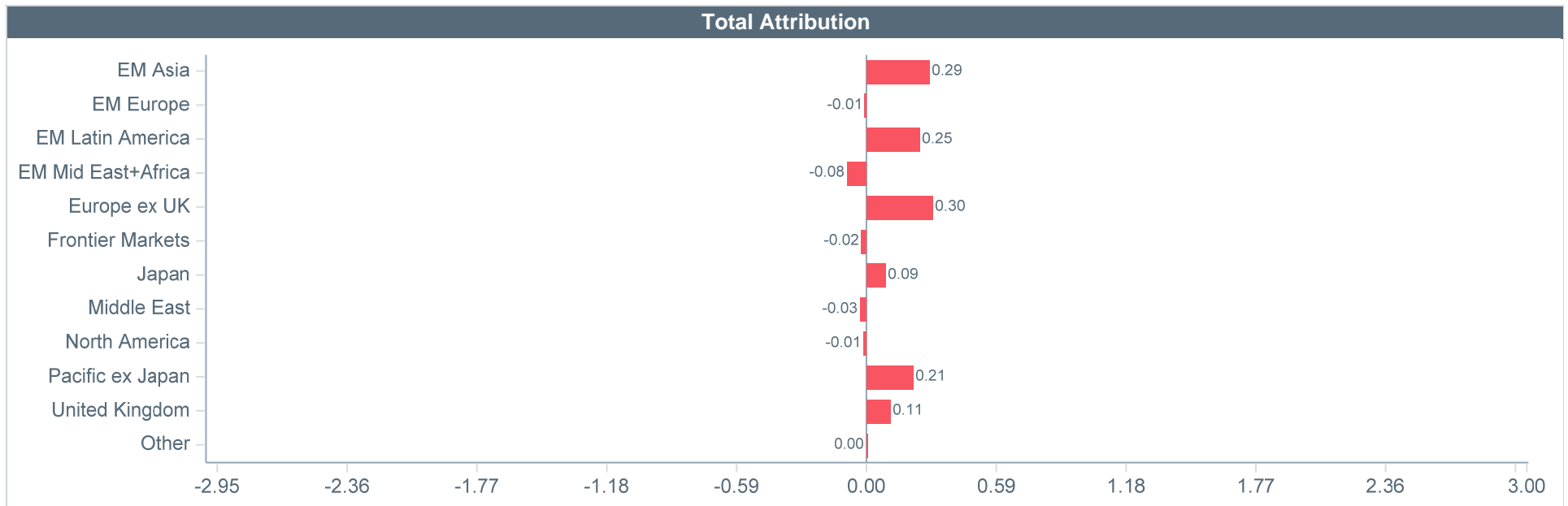
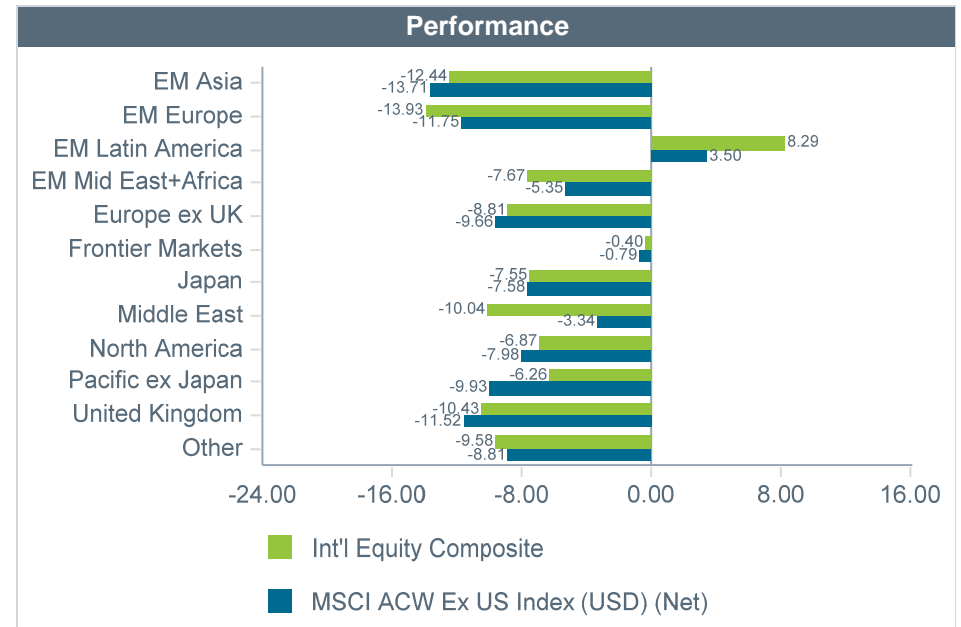
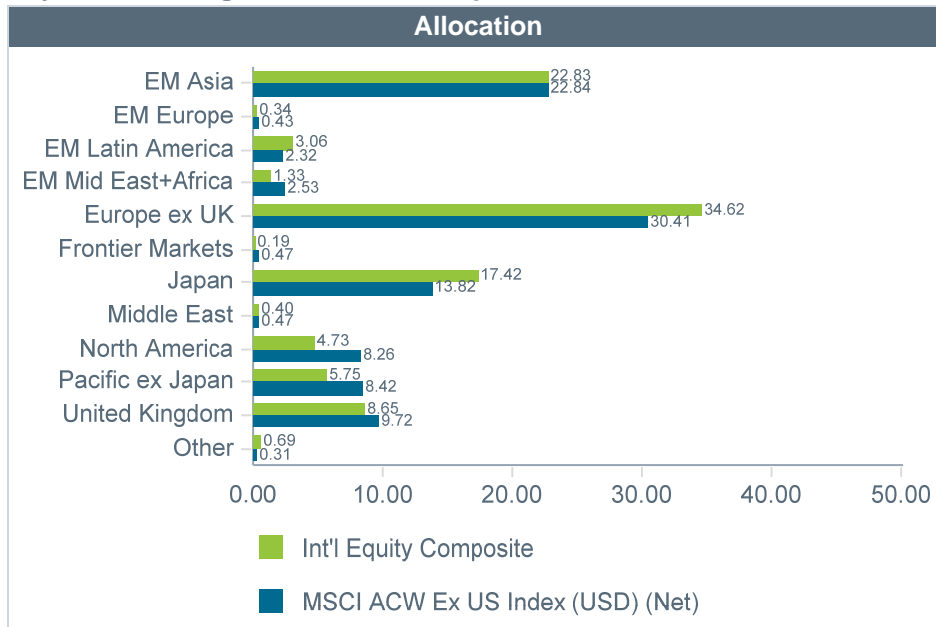
1 Quarter Ending September 30, 2022



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

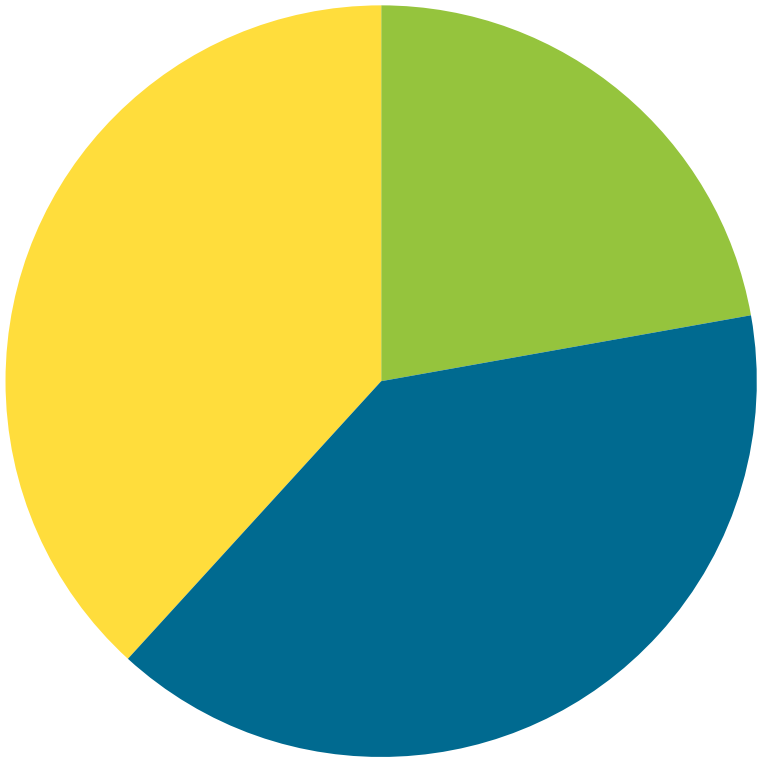
Wyoming State Treasurer's Office  
 Int'l Equity Composite vs. MSCI ACW Ex US Index (USD) (Net)  
 Buy and Hold Region Attribution Graph

1 Quarter Ending September 30, 2022



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

September 30, 2022 : \$1,207,292,471



	Market Value (\$)	Allocation (%)
Cohen & Steers Preferred Stock	267,923,762	22.19
Harvest Fund Advisors	477,831,451	39.58
Harvest Fund Advisors Passive	461,537,258	38.23

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



Wyoming State Treasurer's Office  
Comparative Performance

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Cohen &amp; Steers Preferred Stock</b>	<b>-1.63</b>	<b>-1.63</b>	<b>-13.78</b>	<b>-13.91</b>	<b>-0.07</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.17</b>	<b>2.94</b>	<b>07/01/2018</b>
Preferred Stock Custom Index	-2.11	-2.11	-14.68	-14.92	-0.14	1.89	3.36	4.09	5.71	1.90	
Difference	0.48	0.48	0.90	1.01	0.07	N/A	N/A	N/A	-1.54	1.04	
<b>MLP Composite</b>	<b>5.22</b>	<b>5.22</b>	<b>18.38</b>	<b>19.53</b>	<b>7.65</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>40.91</b>	<b>2.79</b>	<b>08/01/2018</b>
MLP Custom Index	3.47	3.47	15.55	15.68	4.74	2.56	2.91	1.40	39.33	1.44	
Difference	1.75	1.75	2.83	3.85	2.91	N/A	N/A	N/A	1.58	1.35	
<b>Harvest Fund Advisors</b>	<b>6.60</b>	<b>6.60</b>	<b>21.55</b>	<b>23.63</b>	<b>8.83</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>41.79</b>	<b>3.60</b>	<b>08/01/2018</b>
MLP Custom Index	3.47	3.47	15.55	15.68	4.74	2.56	2.91	1.40	39.33	1.44	
Difference	3.13	3.13	6.00	7.95	4.09	N/A	N/A	N/A	2.46	2.16	
<b>Harvest Fund Advisors Passive</b>	<b>3.73</b>	<b>3.73</b>	<b>16.13</b>	<b>16.47</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>40.01</b>	<b>9.42</b>	<b>02/01/2020</b>
MLP Custom Index	3.47	3.47	15.55	15.68	4.74	2.56	2.91	1.40	39.33	8.79	
Difference	0.26	0.26	0.58	0.79	N/A	N/A	N/A	N/A	0.68	0.63	

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.

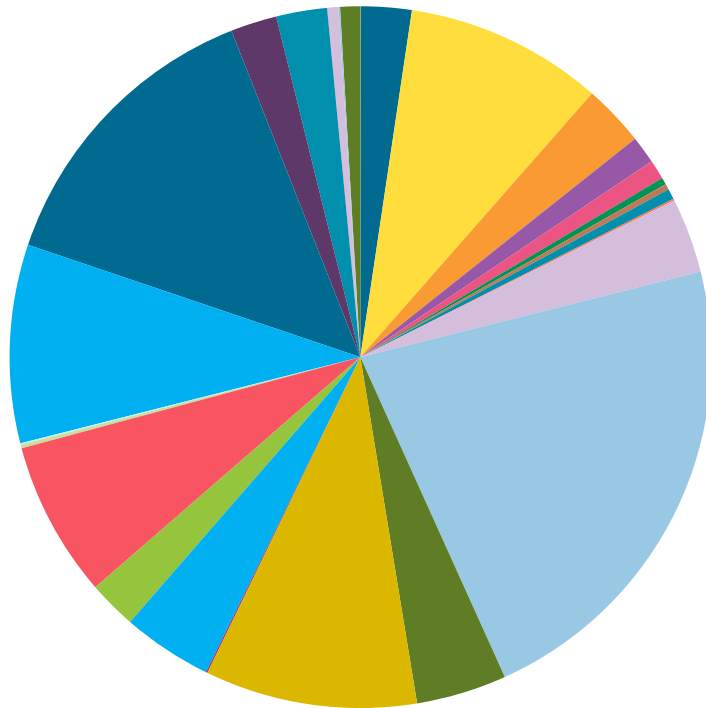
Wyoming State Treasurer's Office  
Comparative Performance

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Cohen &amp; Steers Preferred Stock</b>	<b>-1.56</b>	<b>-1.56</b>	<b>-13.60</b>	<b>-13.67</b>	<b>0.22</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.48</b>	<b>3.25</b>	<b>07/01/2018</b>
Preferred Stock Custom Index	-2.11	-2.11	-14.68	-14.92	-0.14	1.89	3.36	4.09	5.71	1.90	
Difference	0.55	0.55	1.08	1.25	0.36	N/A	N/A	N/A	-1.23	1.35	
<b>MLP Composite</b>	<b>5.29</b>	<b>5.29</b>	<b>18.63</b>	<b>19.88</b>	<b>8.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>41.34</b>	<b>3.21</b>	<b>08/01/2018</b>
MLP Custom Index	3.47	3.47	15.55	15.68	4.74	2.56	2.91	1.40	39.33	1.44	
Difference	1.82	1.82	3.08	4.20	3.26	N/A	N/A	N/A	2.01	1.77	
<b>Harvest Fund Advisors</b>	<b>6.75</b>	<b>6.75</b>	<b>22.07</b>	<b>24.35</b>	<b>9.47</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>42.64</b>	<b>4.22</b>	<b>08/01/2018</b>
MLP Custom Index	3.47	3.47	15.55	15.68	4.74	2.56	2.91	1.40	39.33	1.44	
Difference	3.28	3.28	6.52	8.67	4.73	N/A	N/A	N/A	3.31	2.78	
<b>Harvest Fund Advisors Passive</b>	<b>3.73</b>	<b>3.73</b>	<b>16.14</b>	<b>16.47</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>40.02</b>	<b>9.42</b>	<b>02/01/2020</b>
MLP Custom Index	3.47	3.47	15.55	15.68	4.74	2.56	2.91	1.40	39.33	8.79	
Difference	0.26	0.26	0.59	0.79	N/A	N/A	N/A	N/A	0.69	0.63	

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.

September 30, 2022 : \$4,811,063,759



	Market Value (\$)	Allocation (%)
Access Venture Partners II	837,446	0.02
Cheyenne Equity Capital Fund, L.P.	112,032,289	2.33
BlackRock Long Term Private Capital	439,150,558	9.13
Hamilton Lane Nowood Fund, L.P.	136,361,234	2.83
Valor Equity Partners V LP	61,017,365	1.27
GTCR Fund XIII	43,436,241	0.90
Nautic Partners X	15,401,755	0.32
Veritas Capital Vantage Fund	12,661,455	0.26
Stepstone Secondaries Fund V LP	23,120,063	0.48
Dragoneer Opportunities Fund VI	3,940,950	0.08
Neuberger Berman Sauger Fund, L.P.	166,082,810	3.45
Clarion Lion	1,066,764,310	22.17
UBS Trumbull	200,538,218	4.17
MS Prime	469,948,218	9.77
M&G	3,497,004	0.07
Northwood	198,888,069	4.13
SC Capital	107,333,191	2.23
Realterm	345,844,938	7.19
WestRiver	8,498,384	0.18
PAAMCO - Jackalope Fund	2,819,887	0.06
Grosvenor Diversified Hedge Funds	439,453,289	9.13
Internal Diversified Hedge Funds	665,198,113	13.83
Grosvenor Silvery Lupine Fund Class D	102,475,047	2.13
Internal Opportunistic	35,878	0.00
Macquarie	112,686,722	2.34
MGIF Co-Investment 3	25,000,556	0.52
Accel KKR	3,412,269	0.07
Morgan Stanley Ashbridge Secondaries II (CF)	44,627,500	0.93

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

Wyoming State Treasurer's Office  
Comparative Performance

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Core Real Estate Composite</b>	<b>0.24</b>	<b>0.24</b>	<b>13.23</b>	<b>22.06</b>	<b>11.96</b>	<b>9.33</b>	<b>8.85</b>	<b>9.71</b>	<b>21.65</b>	<b>6.73</b>	<b>01/01/2006</b>
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	21.02	6.82	
Difference	-0.07	-0.07	0.87	1.10	0.58	0.07	-0.02	-0.20	0.63	-0.09	
<b>Clarion Lion</b>	<b>0.46</b>	<b>0.46</b>	<b>15.09</b>	<b>23.92</b>	<b>13.52</b>	<b>11.19</b>	<b>10.56</b>	<b>11.22</b>	<b>22.73</b>	<b>6.92</b>	<b>01/01/2006</b>
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	21.02	6.82	
Difference	0.15	0.15	2.73	2.96	2.14	1.93	1.69	1.31	1.71	0.10	
<b>UBS Trumbull</b>	<b>-0.17</b>	<b>-0.17</b>	<b>11.13</b>	<b>16.53</b>	<b>6.85</b>	<b>5.19</b>	<b>5.45</b>	<b>6.85</b>	<b>15.40</b>	<b>5.38</b>	<b>07/01/2006</b>
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	21.02	6.56	
Difference	-0.48	-0.48	-1.23	-4.43	-4.53	-4.07	-3.42	-3.06	-5.62	-1.18	
<b>MS Prime</b>	<b>-0.06</b>	<b>-0.06</b>	<b>10.20</b>	<b>20.78</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.48</b>	<b>16.56</b>	<b>10/01/2020</b>
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	21.02	17.24	
Difference	-0.37	-0.37	-2.16	-0.18	N/A	N/A	N/A	N/A	0.46	-0.68	
<b>Diversified Hedge Funds Composite</b>	<b>0.07</b>	<b>0.07</b>	<b>-9.99</b>	<b>-9.11</b>	<b>1.01</b>	<b>1.17</b>	<b>1.34</b>	<b>2.58</b>	<b>5.09</b>	<b>2.00</b>	<b>12/01/2007</b>
HFRI FOF Comp Index	-0.35	-0.35	-6.91	-6.52	4.15	3.08	3.17	3.46	6.17	1.65	
Difference	0.42	0.42	-3.08	-2.59	-3.14	-1.91	-1.83	-0.88	-1.08	0.35	
<b>Grosvenor Diversified Hedge Funds</b>	<b>0.45</b>	<b>0.45</b>	<b>-8.89</b>	<b>-8.13</b>	<b>2.56</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.25</b>	<b>1.75</b>	<b>07/01/2018</b>
HFRI FOF Comp Index	-0.35	-0.35	-6.91	-6.52	4.15	3.08	3.17	3.46	6.17	2.96	
Difference	0.80	0.80	-1.98	-1.61	-1.59	N/A	N/A	N/A	-0.92	-1.21	
<b>Internal Diversified Hedge Funds</b>	<b>-0.16</b>	<b>-0.16</b>	<b>-10.79</b>	<b>-9.83</b>	<b>0.22</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.05</b>	<b>1.41</b>	<b>07/01/2018</b>
HFRI FOF Comp Index	-0.35	-0.35	-6.91	-6.52	4.15	3.08	3.17	3.46	6.17	2.96	
Difference	0.19	0.19	-3.88	-3.31	-3.93	N/A	N/A	N/A	-1.12	-1.55	
<b>Infrastructure Composite</b>	<b>-6.01</b>	<b>-6.01</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-9.21</b>	<b>04/01/2022</b>
10 Year US Treasury Yield + 350 bps	1.57	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.11	
Difference	-7.58	-7.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12.32	
<b>Macquarie Infrastructure</b>	<b>-6.06</b>	<b>-6.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-9.25</b>	<b>04/01/2022</b>
10 Year US Treasury Yield + 350 bps	1.57	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.11	
Difference	-7.63	-7.63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12.36	
<b>MGIF Co-Investment 3</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10/01/2022</b>
10 Year US Treasury Yield + 350 bps	1.57	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

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 September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Opportunistic Composite</b>	<b>2.28</b>	<b>2.28</b>	<b>-22.98</b>	<b>-23.39</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>30.17</b>	<b>12.34</b>	<b>07/01/2020</b>
Opportunistic Custom Benchmark	-3.30	-3.30	-12.80	-10.64	N/A	N/A	N/A	N/A	9.35	2.71	
Difference	5.58	5.58	-10.18	-12.75	N/A	N/A	N/A	N/A	20.82	9.63	
<b>Grosvenor Opportunistic Class D</b>	<b>2.28</b>	<b>2.28</b>	<b>-22.97</b>	<b>-23.38</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>30.17</b>	<b>12.35</b>	<b>07/01/2020</b>
Opportunistic Custom Benchmark	-3.30	-3.30	-12.80	-10.64	N/A	N/A	N/A	N/A	9.35	2.71	
Difference	5.58	5.58	-10.17	-12.74	N/A	N/A	N/A	N/A	20.82	9.64	
<b>Internal Opportunistic</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-9.21</b>	<b>09/01/2022</b>
Opportunistic Custom Benchmark	-3.30	-3.30	-12.80	-10.64	N/A	N/A	N/A	N/A	9.35	-5.56	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.65	

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 September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Core Real Estate Composite</b>	<b>0.42</b>	<b>0.42</b>	<b>13.88</b>	<b>22.96</b>	<b>12.70</b>	<b>10.06</b>	<b>9.61</b>	<b>10.53</b>	<b>22.47</b>	<b>7.57</b>	<b>01/01/2006</b>
NCREIF ODCE Index (AWA) (Gross)	0.52	0.52	13.08	22.09	12.37	10.24	9.85	10.92	22.17	7.79	
Difference	-0.10	-0.10	0.80	0.87	0.33	-0.18	-0.24	-0.39	0.30	-0.22	
<b>Clarion Lion</b>	<b>0.60</b>	<b>0.60</b>	<b>15.56</b>	<b>24.59</b>	<b>14.13</b>	<b>11.85</b>	<b>11.24</b>	<b>11.96</b>	<b>23.40</b>	<b>7.68</b>	<b>01/01/2006</b>
NCREIF ODCE Index (AWA) (Gross)	0.52	0.52	13.08	22.09	12.37	10.24	9.85	10.92	22.17	7.79	
Difference	0.08	0.08	2.48	2.50	1.76	1.61	1.39	1.04	1.23	-0.11	
<b>UBS Trumbull</b>	<b>0.02</b>	<b>0.02</b>	<b>11.74</b>	<b>17.37</b>	<b>7.63</b>	<b>5.96</b>	<b>6.27</b>	<b>7.75</b>	<b>16.22</b>	<b>6.31</b>	<b>07/01/2006</b>
NCREIF ODCE Index (AWA) (Gross)	0.52	0.52	13.08	22.09	12.37	10.24	9.85	10.92	22.17	7.54	
Difference	-0.50	-0.50	-1.34	-4.72	-4.74	-4.28	-3.58	-3.17	-5.95	-1.23	
<b>MS Prime</b>	<b>0.21</b>	<b>0.21</b>	<b>11.26</b>	<b>22.17</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>22.89</b>	<b>17.91</b>	<b>10/01/2020</b>
NCREIF ODCE Index (AWA) (Gross)	0.52	0.52	13.08	22.09	12.37	10.24	9.85	10.92	22.17	18.30	
Difference	-0.31	-0.31	-1.82	0.08	N/A	N/A	N/A	N/A	0.72	-0.39	
<b>Diversified Hedge Funds Composite</b>	<b>0.07</b>	<b>0.07</b>	<b>-9.99</b>	<b>-9.11</b>	<b>1.01</b>	<b>1.17</b>	<b>1.34</b>	<b>2.58</b>	<b>5.09</b>	<b>2.00</b>	<b>12/01/2007</b>
HFRI FOF Comp Index	-0.35	-0.35	-6.91	-6.52	4.15	3.08	3.17	3.46	6.17	1.65	
Difference	0.42	0.42	-3.08	-2.59	-3.14	-1.91	-1.83	-0.88	-1.08	0.35	
<b>Grosvenor Diversified Hedge Funds</b>	<b>0.45</b>	<b>0.45</b>	<b>-8.89</b>	<b>-8.13</b>	<b>2.56</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.25</b>	<b>1.75</b>	<b>07/01/2018</b>
HFRI FOF Comp Index	-0.35	-0.35	-6.91	-6.52	4.15	3.08	3.17	3.46	6.17	2.96	
Difference	0.80	0.80	-1.98	-1.61	-1.59	N/A	N/A	N/A	-0.92	-1.21	
<b>Internal Diversified Hedge Funds</b>	<b>-0.16</b>	<b>-0.16</b>	<b>-10.79</b>	<b>-9.83</b>	<b>0.22</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.05</b>	<b>1.41</b>	<b>07/01/2018</b>
HFRI FOF Comp Index	-0.35	-0.35	-6.91	-6.52	4.15	3.08	3.17	3.46	6.17	2.96	
Difference	0.19	0.19	-3.88	-3.31	-3.93	N/A	N/A	N/A	-1.12	-1.55	
<b>Infrastructure Composite</b>	<b>-6.01</b>	<b>-6.01</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-9.21</b>	<b>04/01/2022</b>
10 Year US Treasury Yield + 350 bps	1.57	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.11	
Difference	-7.58	-7.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12.32	
<b>Macquarie Infrastructure</b>	<b>-6.06</b>	<b>-6.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-9.25</b>	<b>04/01/2022</b>
10 Year US Treasury Yield + 350 bps	1.57	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.11	
Difference	-7.63	-7.63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12.36	
<b>MGIF Co-Investment 3</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10/01/2022</b>
10 Year US Treasury Yield + 350 bps	1.57	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

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.

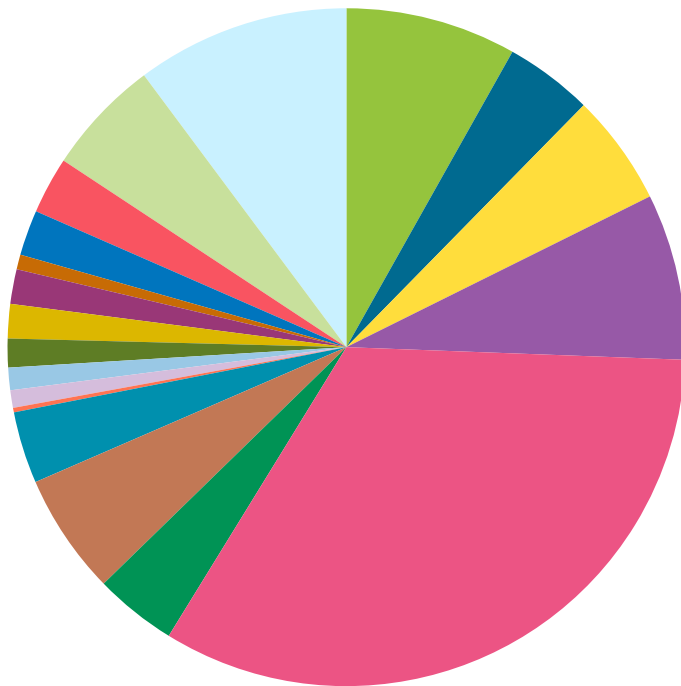
Wyoming State Treasurer's Office  
Comparative Performance

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Composite - Opportunistic Investments</b>	<b>2.28</b>	<b>2.28</b>	<b>-22.98</b>	<b>-23.39</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>30.17</b>	<b>12.34</b>	<b>07/01/2020</b>
Opportunistic Custom Benchmark	-3.30	-3.30	-12.80	-10.64	N/A	N/A	N/A	N/A	9.35	2.71	
Difference	5.58	5.58	-10.18	-12.75	N/A	N/A	N/A	N/A	20.82	9.63	
<b>Grosvenor Opportunistic Class D</b>	<b>2.28</b>	<b>2.28</b>	<b>-22.97</b>	<b>-23.38</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>30.17</b>	<b>12.35</b>	<b>07/01/2020</b>
Opportunistic Custom Benchmark	-3.30	-3.30	-12.80	-10.64	N/A	N/A	N/A	N/A	9.35	2.71	
Difference	5.58	5.58	-10.17	-12.74	N/A	N/A	N/A	N/A	20.82	9.64	
<b>Wyoming Internal Opportunistic</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-9.21</b>	<b>09/01/2022</b>
Opportunistic Custom Benchmark	-3.30	-3.30	-12.80	-10.64	N/A	N/A	N/A	N/A	9.35	-5.56	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.65	

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.

September 30, 2022 : \$11,421,074,592



	Market Value (\$)	Allocation (%)
Internal Intermediate Govt Fixed Income Portfolio	931,417,473	8.16
Payden & Rygel IGC	478,760,118	4.19
JP Morgan MBS	607,570,493	5.32
Internal Passive Core FI	9,654	0.00
PIMCO Core	904,881,826	7.92
Internal Ladder Portfolio	3,790,869,247	33.19
Credit Suisse	448,955,666	3.93
Octagon	659,295,236	5.77
KKR	391,346,653	3.43
Grosvenor Silvery Lupine Fund	24,761,031	0.22
Global Evolution	95,609,750	0.84
Global Evolution Hard	122,441,249	1.07
Eaton Vance	156,589,823	1.37
Goldman Sachs	186,668,320	1.63
Finisterre	188,283,812	1.65
Wellington EMD	80,610,483	0.71
Internal Long Duration Govt Fixed Income Portfolio	247,363,361	2.17
Metlife	309,521,562	2.71
Internal Low Duration Fixed Income Portfolio	632,560,866	5.54
PIMCO Transition Low Duration	1,163,557,968	10.19

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



Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of September 30, 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 Composite	2,922,639,564	25.59	-4.65	-4.65	-14.30	-14.41	-2.90	-0.04	0.71	N/A	-1.50	0.98	01/01/2013
Bloomberg US Agg Bond Index			-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	-1.55	0.89	
Difference			0.10	0.10	0.31	0.19	0.36	0.23	0.17	N/A	0.05	0.09	
Internal Aggregate Core Fixed Income	2,017,757,738	17.67	-4.60	-4.60	-13.69	-13.77	N/A	N/A	N/A	N/A	-1.51	-2.89	11/01/2019
Bloomberg US Agg Bond Index			-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	-1.55	-3.45	
Difference			0.15	0.15	0.92	0.83	N/A	N/A	N/A	N/A	0.04	0.56	
Internal Intermediate Govt Fixed Income Portfolio	931,417,473	8.16	-4.25	-4.25	-12.52	-12.32	-2.87	-0.45	0.10	0.51	-2.40	3.75	10/01/1996
Internal Intermediate Govt Fixed Income Portfolio Index			-4.35	-4.35	-13.09	-12.94	-3.00	-0.61	-0.19	0.19	-2.32	3.72	
Difference			0.10	0.10	0.57	0.62	0.13	0.16	0.29	0.32	-0.08	0.03	
Payden & Rygel IGC	478,760,118	4.19	-5.19	-5.19	-18.65	-18.48	N/A	N/A	N/A	N/A	-1.12	-3.92	11/01/2019
Payden & Rygel Custom Index			-5.06	-5.06	-18.72	-18.53	-3.93	-0.20	1.35	1.61	-1.04	-4.24	
Difference			-0.13	-0.13	0.07	0.05	N/A	N/A	N/A	N/A	-0.08	0.32	
JP Morgan MBS	607,570,493	5.32	-4.74	-4.74	-11.03	-11.68	N/A	N/A	N/A	N/A	-0.70	-2.28	11/01/2019
Bloomberg US MBS Index (Unhgd)			-5.35	-5.35	-13.66	-13.98	-3.67	-0.92	-0.11	0.51	-1.04	-3.89	
Difference			0.61	0.61	2.63	2.30	N/A	N/A	N/A	N/A	0.34	1.61	
Internal Passive Core FI	9,654	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4.14	09/01/2022
Bloomberg US Agg Bond Index			-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	-1.55	-4.32	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.18	
PIMCO Core	904,881,826	7.92	-4.61	-4.61	-15.13	-15.36	-3.20	-0.26	0.66	N/A	-1.72	0.87	01/01/2013
PIMCO Custom Index			-4.77	-4.77	-14.63	-14.70	-3.10	-0.38	0.46	0.84	-1.63	0.84	
Difference			0.16	0.16	-0.50	-0.66	-0.10	0.12	0.20	N/A	-0.09	0.03	
Opportunistic Fixed Income													
Grosvenor Silvery Lupine Fund	24,761,031	0.22	1.76	1.76	13.10	12.18	2.34	3.76	5.00	N/A	0.97	4.74	07/01/2014
CS Western Euro Hi Yld Index			-0.41	-0.41	-14.42	-14.22	-1.58	1.20	3.64	4.56	4.91	3.07	
Difference			2.17	2.17	27.52	26.40	3.92	2.56	1.36	N/A	-3.94	1.67	

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 September 30, 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	1,499,597,555	13.13	1.28	1.28	-3.54	-2.88	2.21	N/A	N/A	N/A	4.75	2.30	09/01/2019	
Bank Loans Custom Index			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	1.80		
Difference			-0.04	-0.04	0.69	1.01	0.52	N/A	N/A	N/A	0.09	0.50		
Credit Suisse	448,955,666	3.93	1.45	1.45	-2.72	-2.02	2.20	N/A	N/A	N/A	4.97	2.31	09/01/2019	
Bank Loans Custom Index			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	1.80		
Difference			0.13	0.13	1.51	1.87	0.51	N/A	N/A	N/A	0.31	0.51		
Octagon	659,295,236	5.77	1.08	1.08	-4.47	-3.84	1.76	N/A	N/A	N/A	4.72	1.92	09/01/2019	
Bank Loans Custom Index			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	1.80		
Difference			-0.24	-0.24	-0.24	0.05	0.07	N/A	N/A	N/A	0.06	0.12		
KKR	391,346,653	3.43	1.45	1.45	-2.82	-2.10	N/A	N/A	N/A	N/A	N/A	-2.10	10/01/2021	
Bank Loans Custom Index			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	-3.89		
Difference			0.13	0.13	1.41	1.79	N/A	N/A	N/A	N/A	N/A	1.79		
Emerging Market Debt Fixed Income Composite	830,203,438	7.27	-2.87	-2.87	-17.79	-18.66	-4.52	-3.08	0.79	N/A	-2.33	-2.96	04/01/2013	
EMD Custom Benchmark			-3.97	-3.97	-19.60	-20.56	-6.00	-3.27	0.89	-2.09	-3.26	-2.61		
Difference			1.10	1.10	1.81	1.90	1.48	0.19	-0.10	N/A	0.93	-0.35		
Global Evolution	95,609,750	0.84	-3.00	-3.00	-14.35	-16.20	N/A	N/A	N/A	N/A	-7.59	-7.12	02/01/2020	
JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)			-4.73	-4.73	-18.57	-20.63	-7.06	-3.92	0.40	-2.43	-8.75	-9.20		
Difference			1.73	1.73	4.22	4.43	N/A	N/A	N/A	N/A	1.16	2.08		
Goldman Sachs	186,668,320	1.63	-1.45	-1.45	-16.37	-17.13	N/A	N/A	N/A	N/A	-0.60	-4.65	03/01/2020	
Goldman Sachs Custom Index			-2.64	-2.64	-16.21	-16.73	-2.48	0.32	2.64	2.65	0.91	-4.26		
Difference			1.19	1.19	-0.16	-0.40	N/A	N/A	N/A	N/A	-1.51	-0.39		
Eaton Vance	156,589,823	1.37	-1.46	-1.46	-16.86	-17.46	N/A	N/A	N/A	N/A	2.77	-8.59	01/01/2021	
JP Morgan EMB (JEMB) Hard/Local 50/50			-4.16	-4.16	-19.34	-20.57	-5.92	-2.49	1.15	-0.24	-4.65	-13.93		
Difference			2.70	2.70	2.48	3.11	N/A	N/A	N/A	N/A	7.42	5.34		
Global Evolution Hard	122,441,249	1.07	-4.43	-4.43	-23.67	-24.21	N/A	N/A	N/A	N/A	-3.28	-14.43	12/01/2020	
JP Morgan EMBIG Div Ex CCC (USD) (TR) Index			-4.33	-4.33	-23.23	-23.34	-6.62	-2.12	1.10	1.21	-2.04	-13.57		
Difference			-0.10	-0.10	-0.44	-0.87	N/A	N/A	N/A	N/A	-1.24	-0.86		

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 September 30, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Finisterre</b>	<b>188,283,812</b>	<b>1.65</b>	<b>-3.98</b>	<b>-3.98</b>	<b>-14.35</b>	<b>-15.23</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-10.61</b>	<b>03/01/2021</b>
Custom EMD Benchmark (1/3 blend)			-3.97	-3.97	-19.60	-20.56	-5.55	-2.04	1.37	0.47	-3.26	-13.30	
Difference			-0.01	-0.01	5.25	5.33	N/A	N/A	N/A	N/A	N/A	2.69	
<b>Wellington EMD</b>	<b>80,610,483</b>	<b>0.71</b>	<b>-4.05</b>	<b>-4.05</b>	<b>-20.63</b>	<b>-21.92</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-22.45</b>	<b>09/01/2021</b>
50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div			-4.63	-4.63	-21.28	-22.45	-7.07	-3.22	0.71	-0.63	-5.32	-22.93	
Difference			0.58	0.58	0.65	0.53	N/A	N/A	N/A	N/A	N/A	0.48	
<b>Laddered Treasury Composite</b>	<b>3,790,869,247</b>	<b>33.19</b>	<b>-1.04</b>	<b>-1.04</b>	<b>-3.32</b>	<b>-3.69</b>	<b>-0.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.42</b>	<b>-0.06</b>	<b>10/01/2019</b>
Internal Ladder Portfolio	3,790,869,247	33.19	-1.04	-1.04	-3.32	-3.69	-0.06	N/A	N/A	N/A	-0.42	-0.06	10/01/2019
<b>Long Duration Fixed Income Composite</b>	<b>556,884,923</b>	<b>4.88</b>	<b>-9.13</b>	<b>-9.13</b>	<b>-28.70</b>	<b>-27.48</b>	<b>-7.10</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-3.25</b>	<b>-0.80</b>	<b>01/01/2019</b>
Bloomberg US Gov't Crdt Lng Trm Bond Index			-9.03	-9.03	-28.94	-27.41	-7.35	-1.17	1.01	1.35	-2.52	-1.03	
Difference			-0.10	-0.10	0.24	-0.07	0.25	N/A	N/A	N/A	-0.73	0.23	
<b>Internal Long Duration Govt Fixed Income Portfolio</b>	<b>247,363,361</b>	<b>2.17</b>	<b>-9.60</b>	<b>-9.60</b>	<b>-28.37</b>	<b>-26.68</b>	<b>-8.71</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.46</b>	<b>-2.53</b>	<b>01/01/2019</b>
Bloomberg US Gov't Lng Trm Bond Index			-9.60	-9.60	-28.77	-26.60	-8.48	-1.62	-0.32	0.60	-4.57	-2.29	
Difference			0.00	0.00	0.40	-0.08	-0.23	N/A	N/A	N/A	-0.89	-0.24	
<b>Metlife</b>	<b>309,521,562</b>	<b>2.71</b>	<b>-8.75</b>	<b>-8.75</b>	<b>-29.07</b>	<b>-27.99</b>	<b>-6.34</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-1.28</b>	<b>0.61</b>	<b>11/01/2018</b>
Bloomberg US Lng Crdt Index			-8.57	-8.57	-29.05	-27.98	-7.02	-1.17	1.67	1.73	-1.18	0.00	
Difference			-0.18	-0.18	-0.02	-0.01	0.68	N/A	N/A	N/A	-0.10	0.61	
<b>Low Duration Fixed Income Composite</b>	<b>632,560,866</b>	<b>5.54</b>	<b>-1.15</b>	<b>-1.15</b>	<b>-3.67</b>	<b>-3.88</b>	<b>0.05</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.06</b>	<b>1.01</b>	<b>12/01/2018</b>
Low Duration Fixed Income Custom Index			-1.54	-1.54	-4.50	-5.05	-0.53	0.61	0.72	0.76	-0.60	0.64	
Difference			0.39	0.39	0.83	1.17	0.58	N/A	N/A	N/A	0.54	0.37	
<b>Internal Low Duration Fixed Income Portfolio</b>	<b>632,560,866</b>	<b>5.54</b>	<b>-1.15</b>	<b>-1.15</b>	<b>-3.67</b>	<b>-3.88</b>	<b>0.05</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.06</b>	<b>1.08</b>	<b>03/01/2018</b>
Bloomberg US Gov't 1-3 Yr Bond Index			-1.54	-1.54	-4.50	-5.05	-0.53	0.54	0.55	0.60	-0.60	0.73	
Difference			0.39	0.39	0.83	1.17	0.58	N/A	N/A	N/A	0.54	0.35	
<b>Transition Low Duration Fixed Income Composite</b>	<b>1,163,557,968</b>	<b>10.19</b>	<b>0.19</b>	<b>0.19</b>	<b>-3.25</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-3.09</b>	<b>11/01/2021</b>
Transition Fixed Income Custom Index			-0.46	-0.46	-3.44	-3.46	0.55	1.58	1.96	N/A	1.18	-3.41	
Difference			0.65	0.65	0.19	N/A	N/A	N/A	N/A	N/A	N/A	0.32	

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 September 30, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
PIMCO Transition Low Duration	1,163,557,968	10.19	0.19	0.19	-3.25	N/A	N/A	N/A	N/A	N/A	N/A	-3.09	11/01/2021
PIMCO Low Duration Custom Index			-0.46	-0.46	-3.19	-3.07	0.68	1.66	2.02	N/A	1.33	-3.02	
Difference			0.65	0.65	-0.06	N/A	N/A	N/A	N/A	N/A	N/A	-0.07	

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 September 30, 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 Composite	2,922,639,564	25.59	-4.63	-4.63	-14.24	-14.34	-2.82	0.05	0.81	N/A	-1.42	1.10	01/01/2013	
Bloomberg US Agg Bond Index			-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	-1.55	0.89		
Difference			0.12	0.12	0.37	0.26	0.44	0.32	0.27	N/A	0.13	0.21		
IM U.S. Broad Mkt Core Fixed Income (SA+CF) Median			-4.55	-4.55	-14.46	-14.49	-2.75	0.17	1.04	1.35	-1.23	1.34		
Core Fixed Income Composite Rank			57	57	38	43	58	66	75	N/A	62	77		
Internal Aggregate Core Fixed Income	2,017,757,738	17.67	-4.58	-4.58	-13.64	-13.70	N/A	N/A	N/A	N/A	-1.44	-2.82	11/01/2019	
Bloomberg US Agg Bond Index			-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	-1.55	-3.45		
Difference			0.17	0.17	0.97	0.90	N/A	N/A	N/A	N/A	0.11	0.63		
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			-4.55	-4.55	-14.46	-14.49	-2.75	0.17	1.04	1.35	-1.23	-2.92		
Internal Aggregate Core Fixed Income Rank			52	52	17	18	N/A	N/A	N/A	N/A	62	42		
Internal Intermediate Govt Fixed Income Portfolio	931,417,473	8.16	-4.25	-4.25	-12.52	-12.32	-2.87	-0.45	0.10	0.51	-2.40	3.75	10/01/1996	
Internal Intermediate Govt Fixed Income Portfolio Index			-4.35	-4.35	-13.09	-12.94	-3.00	-0.61	-0.19	0.19	-2.32	3.72		
Difference			0.10	0.10	0.57	0.62	0.13	0.16	0.29	0.32	-0.08	0.03		
IM U.S. Government Bonds (SA+CF) Median			-4.38	-4.38	-12.63	-12.44	-2.79	-0.26	0.24	0.71	-2.14	4.05		
Internal Intermediate Govt Fixed Income Portfolio Rank			49	49	50	50	51	55	57	86	54	68		
Payden & Rygel IGC	478,760,118	4.19	-5.15	-5.15	-18.53	-18.32	N/A	N/A	N/A	N/A	-0.94	-3.74	11/01/2019	
Payden & Rygel Custom Index			-5.06	-5.06	-18.72	-18.53	-3.93	-0.20	1.35	1.61	-1.04	-4.24		
Difference			-0.09	-0.09	0.19	0.21	N/A	N/A	N/A	N/A	0.10	0.50		
IM U.S. Corporate Bonds (SA+CF) Median			-4.89	-4.89	-18.65	-18.51	-3.01	0.42	2.07	2.26	-0.50	-3.30		
Payden & Rygel IGC Rank			66	66	46	45	N/A	N/A	N/A	N/A	72	67		
JP Morgan MBS	607,570,493	5.32	-4.72	-4.72	-10.97	-11.61	N/A	N/A	N/A	N/A	-0.62	-2.20	11/01/2019	
Bloomberg US MBS Index (Unhgd)			-5.35	-5.35	-13.66	-13.98	-3.67	-0.92	-0.11	0.51	-1.04	-3.89		
Difference			0.63	0.63	2.69	2.37	N/A	N/A	N/A	N/A	0.42	1.69		
IM U.S. Mortgage Backed Bonds (SA+CF) Median			-4.49	-4.49	-12.20	-12.26	-2.59	0.01	0.71	1.37	-0.25	-2.69		
JP Morgan MBS Rank			57	57	46	46	N/A	N/A	N/A	N/A	59	45		
Internal Passive Core FI	9,654	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4.13	09/01/2022	
Bloomberg US Agg Bond Index			-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	-1.55	-4.32		
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.19		
IM U.S. Government Bonds (SA+CF) Median			-4.38	-4.38	-12.63	-12.44	-2.79	-0.26	0.24	0.71	-2.14	-3.40		
Internal Passive Core FI Rank			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55		

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 September 30, 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	904,881,826	7.92	-4.58	-4.58	-15.07	-15.27	-3.10	-0.16	0.78	N/A	-1.62	1.01	01/01/2013
PIMCO Custom Index			-4.77	-4.77	-14.63	-14.70	-3.10	-0.38	0.46	0.84	-1.63	0.84	
Difference			0.19	0.19	-0.44	-0.57	0.00	0.22	0.32	N/A	0.01	0.17	
IM U.S. Broad Mkt Core Fixed Income (SA+CF) Median			-4.55	-4.55	-14.46	-14.49	-2.75	0.17	1.04	1.35	-1.23	1.34	
PIMCO Core Rank			52	52	81	81	80	84	80	N/A	81	83	

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 Lvgd Loan Index through 06/30/2021, and the S&P LSTA US Lvgd Loan 100 Index thereafter.

Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of September 30, 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	24,761,031	0.22	1.76	1.76	13.10	12.18	2.34	3.76	5.00	N/A	0.97	4.74	07/01/2014	
CS Western Euro Hi Yld Index			-0.41	-0.41	-14.42	-14.22	-1.58	1.20	3.64	4.56	4.91	3.07		
Difference			2.17	2.17	27.52	26.40	3.92	2.56	1.36	N/A	-3.94	1.67		
Bank Loans														
Bank Loans Custom Index	1,499,597,555	13.13	1.35	1.35	-3.34	-2.61	2.51	N/A	N/A	N/A	5.05	2.59	09/01/2019	
Difference			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	1.80		
IM U.S. Bank Loans (SA+CF) Median			0.03	0.03	0.89	1.28	0.82	N/A	N/A	N/A	0.39	0.79		
Bank Loans Rank			1.35	1.35	-3.55	-2.87	2.01	3.02	3.57	3.64	5.34	2.13		
			50	50	44	48	24	N/A	N/A	N/A	57	25		
Credit Suisse														
Bank Loans Custom Index	448,955,666	3.93	1.51	1.51	-2.53	-1.77	2.44	N/A	N/A	N/A	5.23	2.56	09/01/2019	
Difference			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	1.80		
IM U.S. Bank Loans (SA+CF) Median			0.19	0.19	1.70	2.12	0.75	N/A	N/A	N/A	0.57	0.76		
Credit Suisse Rank			1.35	1.35	-3.55	-2.87	2.01	3.02	3.57	3.64	5.34	2.13		
			37	37	22	24	28	N/A	N/A	N/A	53	28		
Octagon														
Bank Loans Custom Index	659,295,236	5.77	1.16	1.16	-4.25	-3.54	2.13	N/A	N/A	N/A	5.04	2.28	09/01/2019	
Difference			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	1.80		
IM U.S. Bank Loans (SA+CF) Median			-0.16	-0.16	-0.02	0.35	0.44	N/A	N/A	N/A	0.38	0.48		
Octagon Rank			1.35	1.35	-3.55	-2.87	2.01	3.02	3.57	3.64	5.34	2.13		
			67	67	77	77	40	N/A	N/A	N/A	57	40		
KKR														
Bank Loans Custom Index	391,346,653	3.43	1.51	1.51	-2.66	-1.86	N/A	N/A	N/A	N/A	N/A	-1.86	10/01/2021	
Difference			1.32	1.32	-4.23	-3.89	1.69	2.66	3.43	3.38	4.66	-3.89		
IM U.S. Bank Loans (SA+CF) Median			0.19	0.19	1.57	2.03	N/A	N/A	N/A	N/A	N/A	2.03		
KKR Rank			1.35	1.35	-3.55	-2.87	2.01	3.02	3.57	3.64	5.34	-2.87		
			37	37	27	26	N/A	N/A	N/A	N/A	N/A	26		

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 September 30, 2022

	Allocation		Performance (%)											Inception Date
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.		
Emerging Market Debt Fixed Income Composite	830,203,438	7.27	-2.80	-2.80	-17.60	-18.42	-4.26	-2.74	1.20	N/A	-2.06	-2.50	04/01/2013	
EMD Custom Benchmark			-3.97	-3.97	-19.60	-20.56	-6.00	-3.27	0.89	-2.09	-3.26	-2.61		
Difference			1.17	1.17	2.00	2.14	1.74	0.53	0.31	N/A	1.20	0.11		
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	0.53		
Emerging Market Debt Fixed Income Composite Rank			20	20	42	32	36	64	76	N/A	47	96		
Global Evolution	95,609,750	0.84	-2.98	-2.98	-14.28	-16.09	N/A	N/A	N/A	N/A	-7.45	-6.97	02/01/2020	
JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)			-4.73	-4.73	-18.57	-20.63	-7.06	-3.92	0.40	-2.43	-8.75	-9.20		
Difference			1.75	1.75	4.29	4.54	N/A	N/A	N/A	N/A	1.30	2.23		
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	-7.16		
Global Evolution Rank			26	26	12	15	N/A	N/A	N/A	N/A	84	47		
Goldman Sachs	186,668,320	1.63	-1.45	-1.45	-16.29	-17.05	N/A	N/A	N/A	N/A	-0.38	-4.48	03/01/2020	
Goldman Sachs Custom Index			-2.64	-2.64	-16.21	-16.73	-2.48	0.32	2.64	2.65	0.91	-4.26		
Difference			1.19	1.19	-0.08	-0.32	N/A	N/A	N/A	N/A	-1.29	-0.22		
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	-6.72		
Goldman Sachs Rank			6	6	25	20	N/A	N/A	N/A	N/A	23	23		
Eaton Vance	156,589,823	1.37	-1.35	-1.35	-16.57	-17.09	N/A	N/A	N/A	N/A	3.23	-8.18	01/01/2021	
JP Morgan EMB (JEMB) Hard /Local 50/50			-4.16	-4.16	-19.34	-20.57	-5.92	-2.49	1.15	-0.24	-4.65	-13.93		
Difference			2.81	2.81	2.77	3.48	N/A	N/A	N/A	N/A	7.88	5.75		
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	-13.84		
Eaton Vance Rank			6	6	27	21	N/A	N/A	N/A	N/A	3	9		
Global Evolution Hard	122,441,249	1.07	-4.37	-4.37	-23.54	-24.03	N/A	N/A	N/A	N/A	-3.07	-14.24	12/01/2020	
JP Morgan EMBIG Div Ex CCC (USD) (TR) Index			-4.33	-4.33	-23.23	-23.34	-6.62	-2.12	1.10	1.21	-2.04	-13.57		
Difference			-0.04	-0.04	-0.31	-0.69	N/A	N/A	N/A	N/A	-1.03	-0.67		
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	-11.87		
Global Evolution Hard Rank			63	63	81	77	N/A	N/A	N/A	N/A	57	88		
Finisterre	188,283,812	1.65	-3.88	-3.88	-14.08	-14.87	N/A	N/A	N/A	N/A	N/A	-10.23	03/01/2021	
Custom EMD Benchmark (1/3 blend)			-3.97	-3.97	-19.60	-20.56	-5.55	-2.04	1.37	0.47	-3.26	-13.30		
Difference			0.09	0.09	5.52	5.69	N/A	N/A	N/A	N/A	N/A	3.07		
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	-13.50		
Finisterre Rank			43	43	11	10	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 September 30, 2022

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>Wellington EMD</b>	<b>80,610,483</b>	<b>0.71</b>	<b>-3.92</b>	<b>-3.92</b>	<b>-20.29</b>	<b>-21.55</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-22.11</b>	<b>09/01/2021</b>
50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div			-4.63	-4.63	-21.28	-22.45	-7.07	-3.22	0.71	-0.63	-5.32	-22.93	
Difference			0.71	0.71	0.99	0.90	N/A	N/A	N/A	N/A	N/A	0.82	
IM Emerging Markets Debt (SA+CF) Median			-4.04	-4.04	-18.56	-19.94	-4.92	-2.09	1.78	0.79	-2.29	-20.82	
Wellington EMD Rank			43	43	60	60	N/A	N/A	N/A	N/A	N/A	64	
<b>Laddered Treasury Composite</b>	<b>3,790,869,247</b>	<b>33.19</b>	<b>-1.04</b>	<b>-1.04</b>	<b>-3.32</b>	<b>-3.69</b>	<b>-0.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.42</b>	<b>-0.06</b>	<b>10/01/2019</b>
<b>Internal Ladder Portfolio</b>	<b>3,790,869,247</b>	<b>33.19</b>	<b>-1.04</b>	<b>-1.04</b>	<b>-3.32</b>	<b>-3.69</b>	<b>-0.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.42</b>	<b>-0.06</b>	<b>10/01/2019</b>
<b>Long Duration Fixed Income Composite</b>	<b>556,884,923</b>	<b>4.88</b>	<b>-9.10</b>	<b>-9.10</b>	<b>-28.64</b>	<b>-27.40</b>	<b>-7.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-3.14</b>	<b>-0.69</b>	<b>01/01/2019</b>
Bloomberg US Gov't Crdt Lng Trm Bond Index			-9.03	-9.03	-28.94	-27.41	-7.35	-1.17	1.01	1.35	-2.52	-1.03	
Difference			-0.07	-0.07	0.30	0.01	0.35	N/A	N/A	N/A	-0.62	0.34	
IM U.S. Long Duration (SA+CF) Median			-8.80	-8.80	-28.91	-27.56	-6.37	-0.60	1.69	1.91	-1.65	-0.12	
Long Duration Fixed Income Composite Rank			82	82	40	41	84	N/A	N/A	N/A	99	92	
<b>Internal Long Duration Govt Fixed Income Portfolio</b>	<b>247,363,361</b>	<b>2.17</b>	<b>-9.60</b>	<b>-9.60</b>	<b>-28.37</b>	<b>-26.68</b>	<b>-8.71</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.46</b>	<b>-2.53</b>	<b>01/01/2019</b>
Bloomberg US Gov't Lng Trm Bond Index			-9.60	-9.60	-28.77	-26.60	-8.48	-1.62	-0.32	0.60	-4.57	-2.29	
Difference			0.00	0.00	0.40	-0.08	-0.23	N/A	N/A	N/A	-0.89	-0.24	
IM U.S. Long Duration (SA+CF) Median			-8.80	-8.80	-28.91	-27.56	-6.37	-0.60	1.69	1.91	-1.65	-0.12	
Internal Long Duration Govt Fixed Income Portfolio Rank			99	99	29	21	100	N/A	N/A	N/A	100	100	
<b>Metlife</b>	<b>309,521,562</b>	<b>2.71</b>	<b>-8.71</b>	<b>-8.71</b>	<b>-28.96</b>	<b>-27.85</b>	<b>-6.16</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-1.09</b>	<b>0.81</b>	<b>11/01/2018</b>
Bloomberg US Lng Crdt Index			-8.57	-8.57	-29.05	-27.98	-7.02	-1.17	1.67	1.73	-1.18	0.00	
Difference			-0.14	-0.14	0.09	0.13	0.86	N/A	N/A	N/A	0.09	0.81	
IM U.S. Long Duration (SA+CF) Median			-8.80	-8.80	-28.91	-27.56	-6.37	-0.60	1.69	1.91	-1.65	0.59	
Metlife Rank			45	45	54	65	36	N/A	N/A	N/A	34	45	

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 September 30, 2022

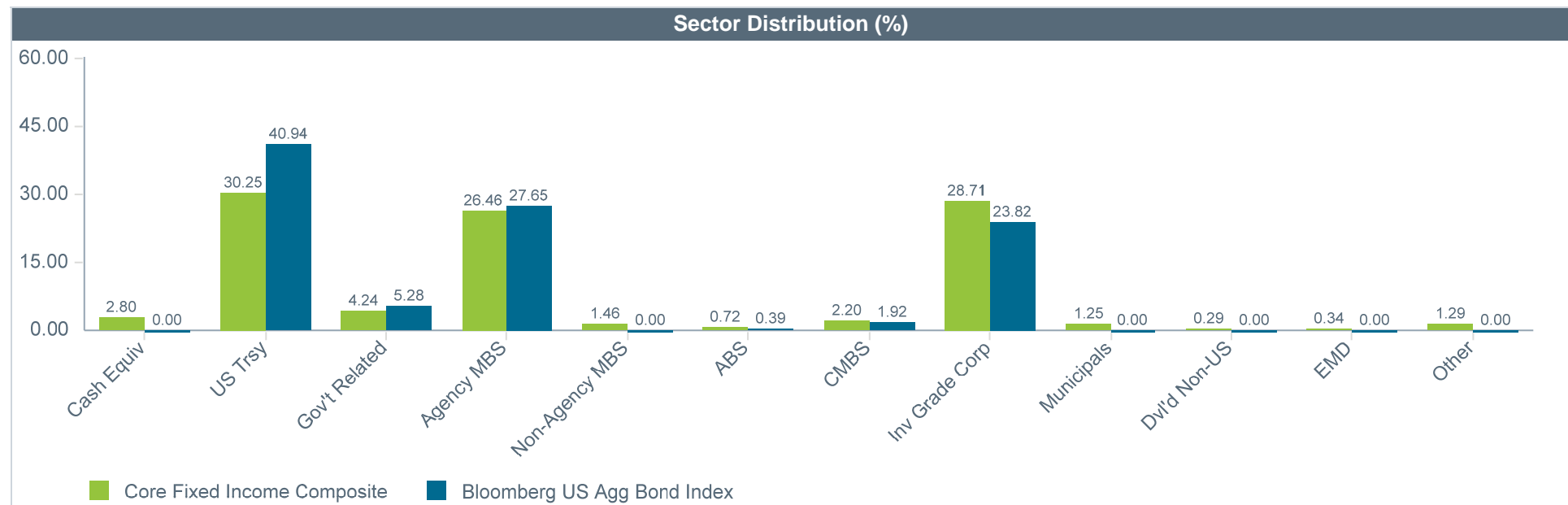
	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
Low Duration Fixed Income Composite	632,560,866	5.54	-1.15	-1.15	-3.67	-3.88	0.05	N/A	N/A	N/A	-0.06	1.01	12/01/2018
Low Duration Fixed Income Custom Index			-1.54	-1.54	-4.50	-5.05	-0.53	0.61	0.72	0.76	-0.60	0.64	
Difference			0.39	0.39	0.83	1.17	0.58	N/A	N/A	N/A	0.54	0.37	
IM U.S. Short Duration Fixed Income (SA+CF) Median			-1.17	-1.17	-4.44	-4.91	0.00	1.07	1.20	1.17	-0.20	1.13	
Low Duration Fixed Income Composite Rank			47	47	27	20	47	N/A	N/A	N/A	40	65	
Internal Low Duration Fixed Income Portfolio	632,560,866	5.54	-1.15	-1.15	-3.67	-3.88	0.05	N/A	N/A	N/A	-0.06	1.08	03/01/2018
Bloomberg US Gov't 1-3 Yr Bond Index			-1.54	-1.54	-4.50	-5.05	-0.53	0.54	0.55	0.60	-0.60	0.73	
Difference			0.39	0.39	0.83	1.17	0.58	N/A	N/A	N/A	0.54	0.35	
IM U.S. Short Duration Fixed Income (SA+CF) Median			-1.17	-1.17	-4.44	-4.91	0.00	1.07	1.20	1.17	-0.20	1.24	
Internal Low Duration Fixed Income Portfolio Rank			47	47	27	20	47	N/A	N/A	N/A	40	74	
Transition Low Duration Fixed Income Composite	1,163,557,968	10.19	0.24	0.24	-3.13	N/A	N/A	N/A	N/A	N/A	N/A	-2.97	11/01/2021
Transition Fixed Income Custom Index			-0.46	-0.46	-3.44	-3.46	0.55	1.58	1.96	N/A	1.18	-3.41	
Difference			0.70	0.70	0.31	N/A	N/A	N/A	N/A	N/A	N/A	0.44	
IM U.S. Short Duration Fixed Income (SA+CF) Median			-1.17	-1.17	-4.44	-4.91	0.00	1.07	1.20	1.17	-0.20	-4.59	
Transition Low Duration Fixed Income Composite Rank			4	4	15	N/A	N/A	N/A	N/A	N/A	N/A	13	
PIMCO Transition Low Duration	1,163,557,968	10.19	0.24	0.24	-3.13	N/A	N/A	N/A	N/A	N/A	N/A	-2.97	11/01/2021
PIMCO Low Duration Custom Index			-0.46	-0.46	-3.19	-3.07	0.68	1.66	2.02	N/A	1.33	-3.02	
Difference			0.70	0.70	0.06	N/A	N/A	N/A	N/A	N/A	N/A	0.05	
IM U.S. Short Duration Fixed Income (SA+CF) Median			-1.17	-1.17	-4.44	-4.91	0.00	1.07	1.20	1.17	-0.20	-4.59	
PIMCO Transition Low Duration Rank			4	4	15	N/A	N/A	N/A	N/A	N/A	N/A	13	

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  
Core Fixed Income Composite vs. Bloomberg US Agg Bond Index  
Portfolio Characteristics

As of September 30, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	6.05	6.20
Convexity	0.54	0.64
Avg. Maturity	8.26	8.52
Avg. Quality	Aa3	Aa1/Aa2
Yield To Maturity (%)	5.11	4.75
Coupon Rate (%)	2.75	2.58
Current Yield (%)	3.28	N/A

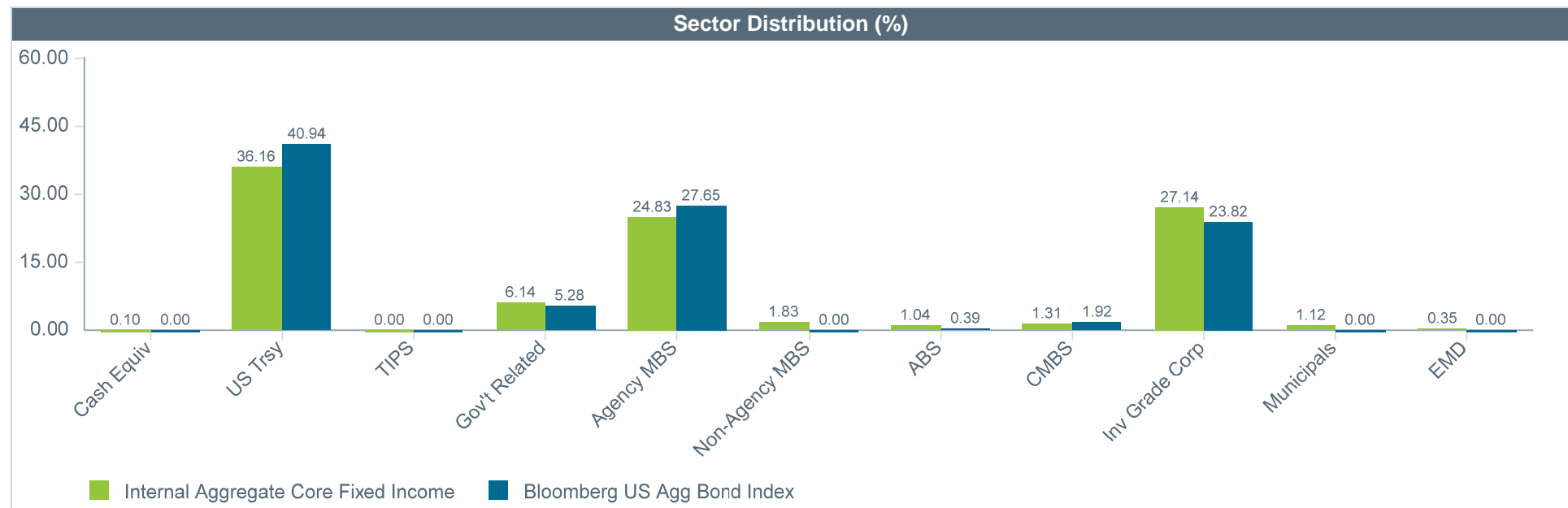


The statistics are calculated based on a weighted average of the underlying managers. Allocation to "Other" consists of Euro/Yankee securities.

Wyoming State Treasurer's Office  
Internal Aggregate Core Fixed Income vs. Bloomberg US Agg Bond Index  
Portfolio Characteristics

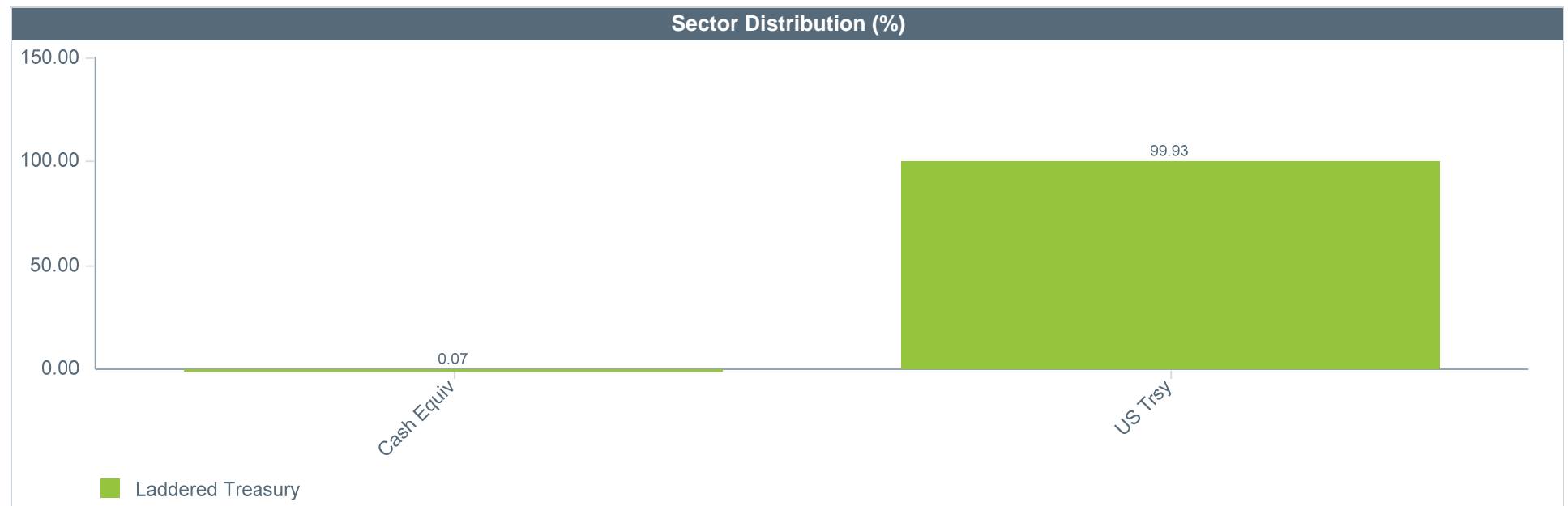
As of September 30, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.99	6.20
Convexity	0.62	0.64
Avg. Maturity	8.26	8.52
Avg. Quality	Aa3	Aa1/Aa2
Yield To Maturity (%)	4.90	4.75
Coupon Rate (%)	2.70	2.58
Current Yield (%)	3.31	N/A



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

Portfolio Characteristics	
	Portfolio
Effective Duration	1.62
Convexity	0.05
Avg. Maturity	1.69
Avg. Quality	NR
Yield To Maturity (%)	4.38
Coupon Rate (%)	0.98

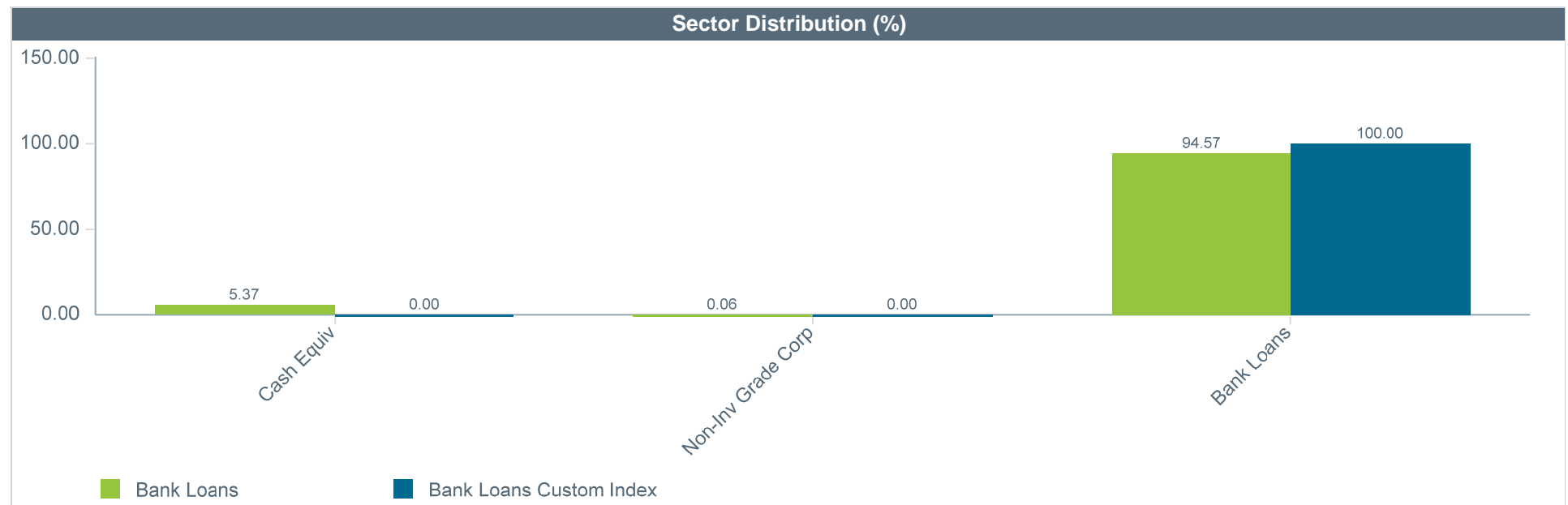


The statistics are calculated based on a weighted average of the underlying managers.

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

As of September 30, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.23	N/A
Avg. Maturity	4.78	4.59
Avg. Quality	B1	B1
Yield To Maturity (%)	9.76	8.47
Coupon Rate (%)	6.99	3.55
Current Yield (%)	7.61	8.47

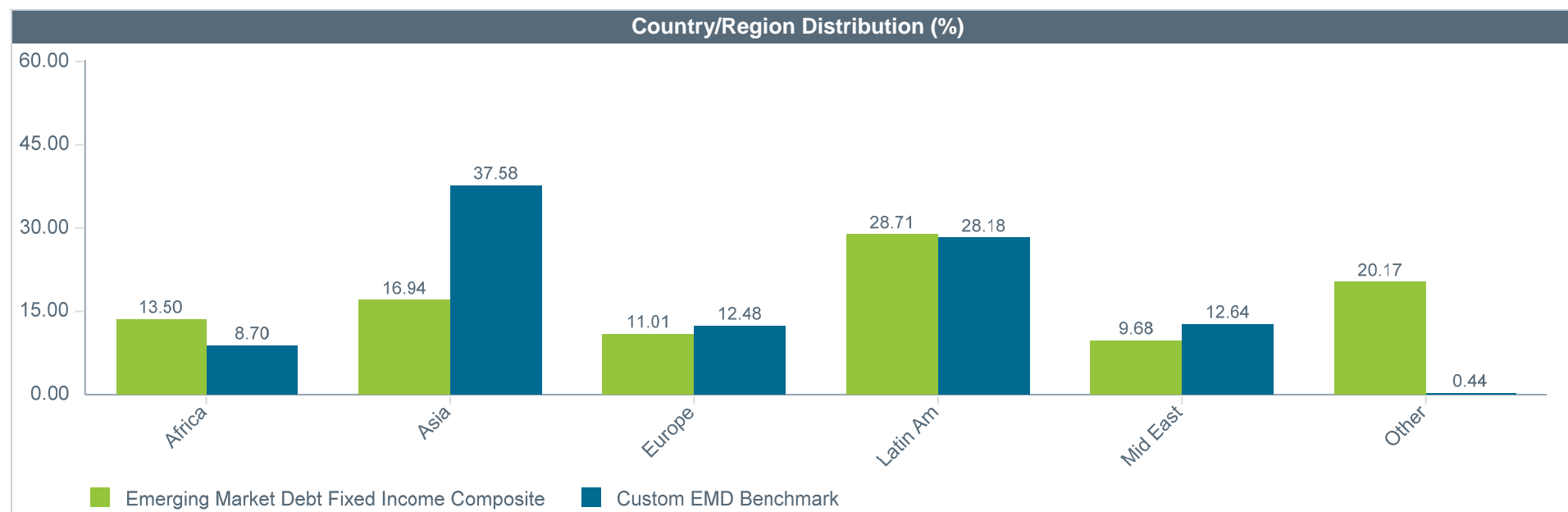


The statistics are calculated based on a weighted average of the underlying managers.

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

As of September 30, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	4.68	5.23
Convexity	N/A	0.57
Avg. Maturity	9.15	9.98
Avg. Quality	Ba1	Ba2
Yield To Maturity (%)	9.62	13.24
Coupon Rate (%)	5.25	5.01
Current Yield (%)	6.71	5.79

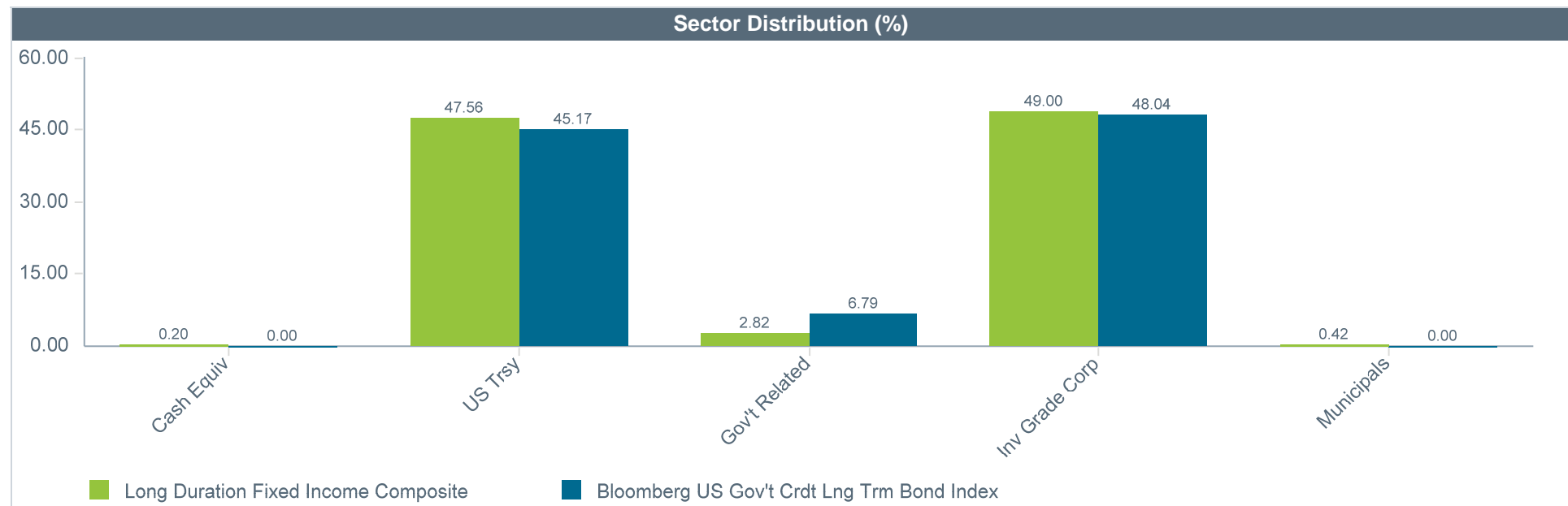


The statistics are calculated based on a weighted average of the underlying managers. Region allocation to "Other" consists of cash, supranational, developed, foreign exchange, futures, margin for derivatives, holdings not specified by country, and interest rate swaps. The EMD Custom Index consists of 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 EMBI Gbl Dvf'd Index thereafter.

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

## Portfolio Characteristics

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	14.31	14.30
Convexity	2.81	2.87
Avg. Quality	Aa3	Aa3/A1
Yield To Maturity (%)	5.26	5.03
Coupon Rate (%)	3.64	3.53



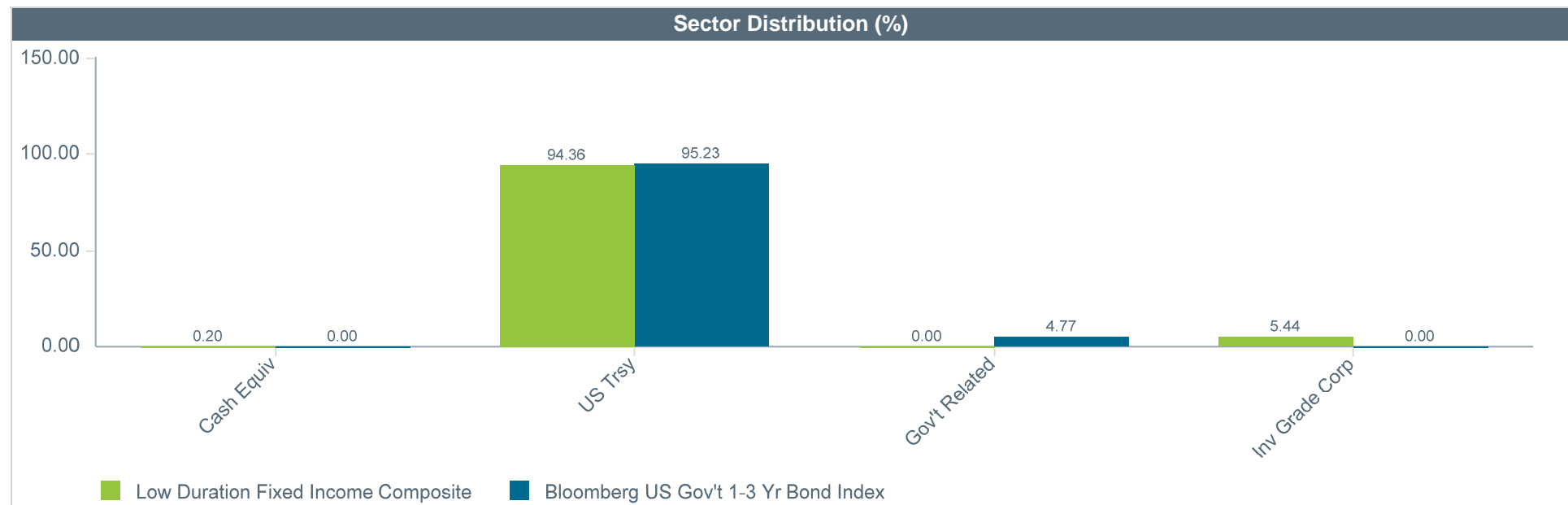
The statistics are calculated based on a weighted average of the underlying managers.



Wyoming State Treasurer's Office  
Low Duration Fixed Income Composite vs. Bloomberg US Gov't 1-3 Yr Bond Index  
Portfolio Characteristics

As of September 30, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	1.49	1.87
Convexity	0.03	0.05
Avg. Quality	Aaa	Aaa/Aa1
Yield To Maturity (%)	4.34	4.31
Coupon Rate (%)	0.98	1.64

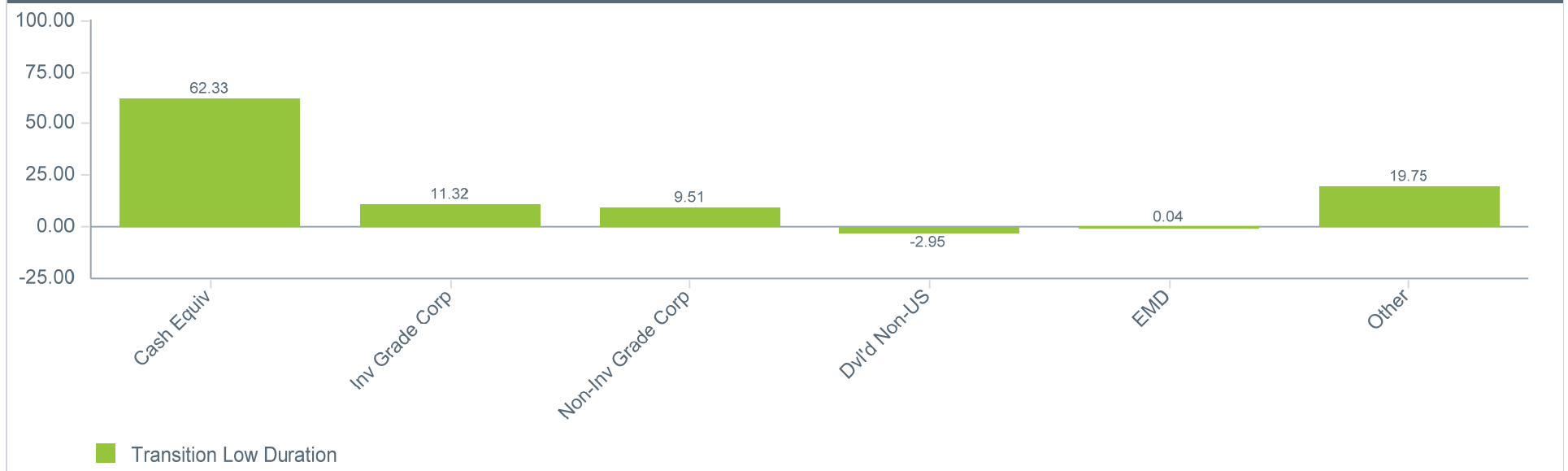


The statistics are calculated based on a weighted average of the underlying managers.

Portfolio Characteristics

	Portfolio
Effective Duration	0.67
Convexity	-0.07
Avg. Quality	A1
Yield To Maturity (%)	6.28
Coupon Rate (%)	3.91

Sector Distribution (%)



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

Wyoming State Treasurer's Office  
Comparative Performance

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>JP Morgan Cash Composite</b>	<b>0.50</b>	<b>0.50</b>	<b>0.73</b>	<b>0.74</b>	<b>0.57</b>	<b>1.13</b>	<b>0.96</b>	<b>0.71</b>	<b>0.03</b>	<b>1.37</b>	<b>01/01/2006</b>
JP Morgan Cash Custom Index	0.46	0.46	0.61	0.62	0.59	1.18	0.98	0.74	0.05	1.39	
Difference	0.04	0.04	0.12	0.12	-0.02	-0.05	-0.02	-0.03	-0.02	-0.02	
<b>Wyo-Star Cash Composite</b>	<b>-0.13</b>	<b>-0.13</b>	<b>-0.73</b>	<b>-0.85</b>	<b>0.23</b>	<b>0.94</b>	<b>0.81</b>	<b>0.64</b>	<b>-0.11</b>	<b>2.89</b>	<b>10/01/1996</b>
Wyo-Star Cash Custom Index	-0.25	-0.25	-0.96	-1.09	0.22	0.98	0.84	0.66	-0.22	2.37	
Difference	0.12	0.12	0.23	0.24	0.01	-0.04	-0.03	-0.02	0.11	0.52	
<b>WYO STAR II Total Fund</b>	<b>-1.35</b>	<b>-1.35</b>	<b>-4.62</b>	<b>-5.05</b>	<b>-0.29</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.39</b>	<b>0.86</b>	<b>01/01/2019</b>
Bloomberg US Corp 1-3 Yr Index	-1.23	-1.23	-4.65	-5.16	-0.10	1.11	1.38	1.42	-0.12	1.07	
Difference	-0.12	-0.12	0.03	0.11	-0.19	N/A	N/A	N/A	-0.27	-0.21	

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 September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	Since Incep.	Inception Date
<b>JP Morgan Cash Composite</b>	<b>0.52</b>	<b>0.52</b>	<b>0.76</b>	<b>0.77</b>	<b>0.59</b>	<b>1.16</b>	<b>1.01</b>	<b>0.78</b>	<b>0.04</b>	<b>1.44</b>	<b>01/01/2006</b>
JP Morgan Cash Custom Index	0.46	0.46	0.61	0.62	0.59	1.18	0.98	0.74	0.05	1.39	
Difference	0.06	0.06	0.15	0.15	0.00	-0.02	0.03	0.04	-0.01	0.05	
<b>Wyo-Star Cash Composite</b>	<b>-0.12</b>	<b>-0.12</b>	<b>-0.71</b>	<b>-0.82</b>	<b>0.28</b>	<b>1.00</b>	<b>0.87</b>	<b>0.70</b>	<b>-0.07</b>	<b>2.93</b>	<b>10/01/1996</b>
Wyo-Star Cash Custom Index	-0.25	-0.25	-0.96	-1.09	0.22	0.98	0.84	0.66	-0.22	2.37	
Difference	0.13	0.13	0.25	0.27	0.06	0.02	0.03	0.04	0.15	0.56	
<b>WYO STAR II Total Fund</b>	<b>-1.34</b>	<b>-1.34</b>	<b>-4.60</b>	<b>-5.03</b>	<b>-0.24</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.34</b>	<b>0.91</b>	<b>01/01/2019</b>
Bloomberg US Corp 1-3 Yr Index	-1.23	-1.23	-4.65	-5.16	-0.10	1.11	1.38	1.42	-0.12	1.07	
Difference	-0.11	-0.11	0.05	0.13	-0.14	N/A	N/A	N/A	-0.22	-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.

**Wyoming State Treasurer's Office**  
**Investment Values by Fund**  
September 30, 2022

	Total Investment Value	Fiscal Year Ending 06/30/22 Market Value	Current Market Value	% of MV
<b>Wyoming State Total Fund</b>	<b>\$23,243,343,283</b>	<b>\$23,752,420,683</b>	<b>\$23,329,020,086</b>	<b>100.0%</b>
<b>Permanent Mineral Trust</b>	<b>\$8,100,458,744</b>	<b>\$8,834,499,093</b>	<b>\$8,697,099,434</b>	<b>100.0%</b>
US Equity	\$972,317,537	\$1,126,638,384	\$1,121,791,894	12.9%
International Equity	\$1,419,497,489	\$1,488,637,028	\$1,377,441,868	15.8%
MLPs	\$312,800,761	\$378,457,712	\$418,961,763	4.8%
Private Equity	\$603,385,177	\$851,243,367	\$925,275,200	10.6%
Real Estate	\$874,334,024	\$1,260,096,524	\$1,218,781,636	14.0%
Diversified Hedge Funds	\$752,228,041	\$756,724,331	\$760,651,491	8.7%
Infrastructure	\$51,582,275	\$14,086,510	\$48,648,950	0.6%
Fixed Income	\$2,858,241,476	\$2,583,744,764	\$2,571,434,118	29.6%
Opportunistic	\$61,898,768	\$60,098,004	\$61,490,465	0.7%
Public Purpose Investments	\$134,414,334	\$127,918,133	\$134,414,334	1.5%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$59,758,863	\$186,854,335	\$58,207,714	0.7%
<b>Common School Perm Land Fund</b>	<b>\$4,307,599,613</b>	<b>\$4,372,482,910</b>	<b>\$4,354,128,946</b>	<b>100.0%</b>
US Equity	\$319,813,496	\$391,966,684	\$378,093,167	8.7%
International Equity	\$602,061,007	\$579,983,439	\$563,526,128	12.9%
Preferred Stock	\$240,078,096	\$232,005,147	\$239,300,307	5.5%
MLPs	\$215,134,202	\$250,982,845	\$283,245,693	6.5%
Private Equity	\$0	\$73,003	\$76,157	0.0%
Real Estate	\$530,839,950	\$760,216,330	\$738,437,082	17.0%
Diversified Hedge Funds	\$211,418,145	\$181,025,758	\$194,148,081	4.5%
Infrastructure	\$54,920,639	\$10,271,156	\$51,803,166	1.2%
Fixed Income	\$2,084,842,758	\$1,868,959,356	\$1,857,186,540	42.7%
Opportunistic	\$17,050,606	\$16,810,632	\$17,211,451	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)	\$13,080,976	\$61,828,823	\$12,741,435	0.3%
<b>Permanent Land Fund</b>	<b>\$229,483,432</b>	<b>\$243,598,061</b>	<b>\$238,245,123</b>	<b>100.0%</b>
US Equity	\$34,943,385	\$34,732,637	\$33,296,189	14.0%
International Equity	\$41,959,990	\$42,729,048	\$39,966,341	16.8%
MLPs	\$8,803,919	\$10,782,429	\$11,640,629	4.9%
Private Equity	\$21,969,781	\$27,805,931	\$31,465,811	13.2%
Real Estate	\$22,013,782	\$31,799,363	\$30,717,330	12.9%
Diversified Hedge Funds	\$18,426,893	\$18,069,875	\$18,855,758	7.9%
Infrastructure	\$1,177,793	\$332,291	\$1,110,832	0.5%
Fixed Income	\$75,947,586	\$69,042,163	\$67,039,010	28.1%
Opportunistic	\$2,061,254	\$1,985,367	\$2,030,734	0.9%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$2,179,049	\$6,318,958	\$2,122,488	0.9%
<b>University Permanent Land Fund</b>	<b>\$24,506,827</b>	<b>\$28,284,018</b>	<b>\$27,536,347</b>	<b>100.0%</b>
US Equity	\$1,880,847	\$3,984,895	\$3,816,653	13.9%
International Equity	\$5,309,750	\$4,509,550	\$4,825,881	17.5%
MLPs	\$1,004,668	\$1,271,739	\$1,358,078	4.9%
Private Equity	\$2,023,749	\$2,981,256	\$3,212,943	11.7%
Real Estate	\$2,786,240	\$4,019,612	\$3,874,289	14.1%
Diversified Hedge Funds	\$2,340,585	\$2,384,469	\$2,395,322	8.7%
Infrastructure	\$140,695	\$38,920	\$132,695	0.5%
Fixed Income	\$8,720,740	\$7,440,529	\$7,615,550	27.7%
Opportunistic	\$167,028	\$171,922	\$175,851	0.6%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$132,525	\$1,481,125	\$129,085	0.5%

**Wyoming State Treasurer's Office**  
**Investment Values by Fund**  
September 30, 2022

	Total Investment Value	Fiscal Year Ending 06/30/22 Market Value	Current Market Value	% of MV
<b>Wyoming State Total Fund</b>	<b>\$23,243,343,283</b>	<b>\$23,752,420,683</b>	<b>\$23,329,020,086</b>	<b>100.0%</b>
<b>Hathaway Scholarship</b>	<b>\$587,472,499</b>	<b>\$653,421,337</b>	<b>\$647,259,938</b>	<b>100.0%</b>
US Equity	\$62,875,532	\$78,414,543	\$74,518,349	11.5%
International Equity	\$95,114,619	\$105,110,290	\$95,410,537	14.7%
MLPs	\$21,382,417	\$26,382,830	\$29,030,544	4.5%
Private Equity	\$71,064,317	\$94,032,740	\$101,947,233	15.8%
Real Estate	\$66,552,337	\$95,638,924	\$92,792,231	14.3%
Diversified Hedge Funds	\$55,943,136	\$56,422,644	\$56,676,372	8.8%
Infrastructure	\$3,313,688	\$1,024,739	\$3,125,432	0.5%
Fixed Income	\$197,820,210	\$184,852,362	\$180,487,971	27.9%
Opportunistic	\$3,892,112	\$3,914,645	\$4,004,096	0.6%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$9,514,129	\$7,627,618	\$9,267,173	1.4%
<b>Higher Education</b>	<b>\$127,037,792</b>	<b>\$131,534,781</b>	<b>\$128,277,456</b>	<b>100.0%</b>
US Equity	\$9,520,981	\$11,948,884	\$11,205,448	8.7%
International Equity	\$17,233,440	\$16,983,623	\$15,579,667	12.1%
Preferred Stock	\$7,084,462	\$7,124,249	\$7,006,213	5.5%
MLPs	\$6,275,529	\$6,395,247	\$8,180,189	6.4%
Private Equity	\$0	\$2,755	\$2,874	0.0%
Real Estate	\$15,230,026	\$22,077,990	\$21,331,841	16.6%
Diversified Hedge Funds	\$5,611,035	\$5,047,316	\$4,996,608	3.9%
Infrastructure	\$1,432,317	\$270,862	\$1,350,682	1.1%
Fixed Income	\$63,241,800	\$57,675,799	\$57,215,308	44.6%
Opportunistic	\$445,412	\$460,306	\$470,824	0.4%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$962,792	\$3,547,750	\$937,801	0.7%
<b>Workers Compensation Fund</b>	<b>\$2,570,846,692</b>	<b>\$2,364,310,695</b>	<b>\$2,250,913,917</b>	<b>100.0%</b>
US Equity	\$138,250,450	\$122,528,306	\$117,275,271	5.2%
International Equity	\$203,445,363	\$180,637,851	\$193,170,145	8.6%
MLPs	\$86,923,255	\$93,408,036	\$106,413,798	4.7%
Private Equity	\$0	\$47,700	\$49,761	0.0%
Real Estate	\$194,286,358	\$274,605,165	\$267,553,388	11.9%
Diversified Hedge Funds	\$0	\$0	\$0	0.0%
Infrastructure	\$33,272,381	\$483,760	\$31,515,521	1.4%
Fixed Income	\$1,885,571,438	\$1,510,369,777	\$1,506,169,001	66.9%
Opportunistic	\$17,147,744	\$16,744,875	\$17,127,504	0.8%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$11,949,703	\$165,485,226	\$11,639,527	0.5%
<b>Pool A</b>	<b>\$353,842,189</b>	<b>\$259,889,129</b>	<b>\$329,173,615</b>	<b>100.0%</b>
US Equity	\$18,599,600	\$17,300,136	\$17,097,412	5.2%
International Equity	\$33,377,807	\$23,886,240	\$30,216,349	9.2%
Preferred Stock	\$31,576,186	\$16,929,850	\$21,617,242	6.6%
MLPs	\$12,489,029	\$10,683,352	\$15,723,855	4.8%
Private Equity	\$0	\$28,500	\$29,732	0.0%
Real Estate	\$21,271,471	\$26,491,516	\$27,824,532	8.5%
Diversified Hedge Funds	\$11,653,145	\$9,884,212	\$10,457,119	3.2%
Fixed Income	\$190,347,865	\$135,123,916	\$172,576,501	52.4%
Opportunistic	\$0	\$0	\$0	0.0%
Cash Equivalents (Liquidated Managers)	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$34,527,085	\$19,561,409	\$33,630,873	10.2%
<b>LSRA</b>	<b>\$1,905,471,655</b>	<b>\$1,703,270,812</b>	<b>\$1,750,383,575</b>	<b>100.0%</b>
US Equity	\$118,988,414	\$64,539,626	\$95,930,082	5.5%
International Equity	\$154,103,279	\$66,107,749	\$147,886,526	8.4%
MLPs	\$62,427,741	\$26,314,155	\$64,814,159	3.7%
Private Equity	\$0	\$21,304	\$22,224	0.0%
Diversified Hedge Funds	\$57,655,487	\$47,430,374	\$59,290,538	3.4%
Fixed Income	\$1,323,824,266	\$908,018,002	\$1,198,859,721	68.5%
Opportunistic	\$0	\$0	\$0	0.0%
Cash (invested in State Agency Pool)	\$188,472,468	\$590,839,603	\$183,580,325	10.5%
<b>State Agency Pool</b>	<b>\$5,036,623,841</b>	<b>\$5,161,129,847</b>	<b>\$4,906,001,737</b>	<b>100.0%</b>
Fixed Income	\$3,709,824,983	\$3,851,436,948	\$3,802,490,872	77.5%
Public Purpose Investments	\$61,392,416	\$59,300,000	\$65,300,000	1.3%
Cash Equivalents	\$1,265,406,442	\$1,250,392,899	\$1,038,210,865	21.2%

**Wyoming State Treasurer's Office**  
**Investment Values by Manager**  
September 30, 2022

	Total Investment Value	Fiscal Year Ending 06/30/22 Market Value	Current Market Value	% of MV
<b>Wyoming State Total Fund</b>	<b>\$23,243,343,283</b>	<b>\$23,752,420,683</b>	<b>\$23,329,020,086</b>	<b>100.0%</b>
<b>US Equity</b>	<b>\$1,677,190,241</b>	<b>\$1,852,054,095</b>	<b>\$1,853,024,466</b>	<b>7.9%</b>
State Street All Cap	\$1,182,753,405	\$1,435,978,583	\$1,431,568,125	
UW Portfolio Management Program	\$1,000,000	\$1,703,125	\$1,645,505	
Wyoming Internal Domestic Equity	\$1,037,207	\$30,554,039	\$68,642	
Wyoming Internal Domestic Equity - QT	\$78,392,697	\$33,838,046	\$68,643,700	
Van Berkum	\$192,079,082	\$172,489,998	\$170,840,239	
State Street Small Cap	\$0	-	-	
BlackRock Small Cap	\$90,763,113	\$79,942,823	\$68,813,896	
Wyoming Internal Small Cap - QT	\$76,776,201	\$50,886,650	\$66,217,405	
Wyoming Internal Small Cap	\$54,344,537	\$46,660,831	\$45,190,098	
Wyoming Internal Large Cap Equity	\$44,000	-	\$36,856	
<b>International Equity</b>	<b>\$2,572,059,744</b>	<b>\$2,508,584,818</b>	<b>\$2,468,023,442</b>	<b>10.6%</b>
Northern Trust	\$1,244,215,211	\$1,103,096,420	\$1,106,738,367	
Harding Loevner	\$639,032,558	\$618,493,247	\$557,134,154	
Arrowstreet	\$688,800,975	\$786,995,151	\$804,190,534	
Wyoming Internal International Equity	\$11,000	-	(\$39,613)	
<b>Mixed Assets</b>	<b>\$1,005,980,264</b>	<b>\$1,060,737,590</b>	<b>\$1,207,292,471</b>	<b>5.2%</b>
Cohen & Steers	\$278,738,744	\$256,059,245	\$267,923,782	
Harvest	\$366,879,630	\$407,468,142	\$477,831,451	
Harvest Passive	\$360,361,890	\$397,210,203	\$461,537,258	
<b>Private Equity</b>	<b>\$698,443,024</b>	<b>\$976,236,555</b>	<b>\$1,062,081,935</b>	<b>4.6%</b>
Access Venture Partners II	\$2,205,145	\$1,496,701	\$837,446	
Accel-KKR Growth IV	\$3,329,922	\$1,085,567	\$3,412,269	
Cheyenne Capital Fund, L.P.	\$76,274,546	\$112,031,295	\$112,032,289	
Hamilton Lane Nowood Fund, L.P.	\$113,225,905	\$136,361,234	\$136,361,234	
BlackRock LTFC	\$275,911,891	\$420,960,844	\$439,150,558	
Valor PE	\$41,236,966	\$55,682,992	\$61,017,365	
GTCR	\$31,194,797	\$32,439,310	\$43,436,241	
Nautic	\$13,799,262	\$9,268,193	\$15,401,755	
Veritas	\$10,777,200	\$7,889,338	\$12,661,455	
Veritas Capital VIII	\$438,699	-	-	
Stepstone V	\$20,689,680	\$20,621,723	\$23,120,063	
Dragoneer	\$5,659,556	\$4,168,001	\$3,940,950	
Neuberger Berman Sauger	\$59,071,954	\$174,231,357	\$166,082,810	
Ashbridge	\$44,627,500	-	\$44,627,500	
<b>Real Estate</b>	<b>\$1,727,274,110</b>	<b>\$2,474,945,426</b>	<b>\$2,401,312,331</b>	<b>10.3%</b>
Clarion Lion	\$711,216,078	\$1,085,599,837	\$1,066,764,310	
Morgan Stanley Prime	\$369,409,798	\$505,654,256	\$469,948,218	
UBS Trumbull	\$151,256,533	\$207,981,825	\$200,538,218	
M&G	\$28,525,675	\$3,561,251	\$3,497,004	
Northwood	\$113,995,817	\$209,302,731	\$198,888,069	
SC Capital	\$99,592,288	\$113,811,808	\$107,333,191	
Realterm	\$249,999,982	\$340,526,119	\$345,844,938	
WestRiver	\$3,277,938	\$8,507,598	\$8,498,384	
<b>Diversified Hedge Funds</b>	<b>\$1,115,276,467</b>	<b>\$1,076,988,978</b>	<b>\$1,107,471,290</b>	<b>4.7%</b>
PAAMCO - Jackalope	\$6,433,236	\$2,808,094	\$2,819,887	
Grosvenor Diversified Hedge Funds	\$454,141,087	\$456,607,047	\$439,453,289	
Internal Diversified Hedge Funds	\$654,702,144	\$617,573,837	\$665,198,113	
<b>Infrastructure</b>	<b>\$145,839,789</b>	<b>\$26,508,238</b>	<b>\$137,687,278</b>	<b>0.6%</b>
Macquarie	\$120,839,789	\$26,508,238	\$112,686,722	
MGIF	\$25,000,000	\$0	\$25,000,556	
<b>Fixed Income</b>	<b>\$12,623,608,379</b>	<b>\$11,176,663,615</b>	<b>\$11,421,074,592</b>	<b>49.0%</b>
PIMCO	\$1,091,576,588	\$852,414,692	\$904,881,826	
Payden & Rygel	\$572,841,532	\$440,628,759	\$478,760,118	
JPM MBS	\$692,023,468	\$550,150,926	\$607,570,493	
Credit Suisse	\$476,482,951	\$447,836,812	\$448,955,666	
Octagon	\$695,204,995	\$662,435,090	\$659,295,236	
KKR	\$409,854,612	\$327,407,664	\$391,346,653	
Grosvenor Silvery Lupine Fund	\$16,405,067	\$32,340,789	\$24,761,031	
Investec	\$0	-	-	
Global Evolution	\$121,429,615	\$99,045,882	\$95,609,750	
Eaton Vance EMD	\$179,204,960	\$162,844,496	\$156,589,823	
Global Evolution Hard	\$173,836,372	\$129,876,631	\$122,441,249	
Finisterre	\$216,690,365	\$149,340,216	\$188,283,812	
Goldman Sachs	\$214,578,809	\$189,128,747	\$186,668,320	
Wellington	\$109,922,226	\$85,220,173	\$80,610,483	
Internal Long Duration Govt Portfolio	\$319,419,381	\$256,530,959	\$247,363,361	
Logan Circle	\$389,896,113	\$318,415,828	\$309,521,562	
Internal Int. Duration Govt Portfolio	\$1,119,010,239	\$823,200,417	\$931,417,473	
Internal Low Duration Govt Portfolio	\$676,168,154	\$640,631,003	\$632,560,866	
Pimco Low	\$1,212,696,692.36	\$1,172,742,930	\$1,163,557,968	
Wyoming Internal Ladder Portfolio	\$3,936,355,940.88	\$3,836,471,599	\$3,790,869,247	
Wyoming Internal Passive Core Fixed Income	\$10,300.00	-	\$9,654	
<b>Opportunistic</b>	<b>\$102,705,924</b>	<b>\$100,185,751</b>	<b>\$102,510,925</b>	<b>0.4%</b>
Grosvenor D	\$102,662,924	\$100,185,751	\$102,475,047	
Wyoming Internal Opportunistic Portfolio	\$43,000	-	\$35,878	
<b>Public Purpose Investments</b>	<b>\$218,074,071</b>	<b>\$205,577,871</b>	<b>\$218,074,071</b>	<b>0.9%</b>
<b>Cash &amp; Cash Equivalents</b>	<b>\$1,356,891,271</b>	<b>\$2,293,937,746</b>	<b>\$1,350,467,285</b>	<b>5.8%</b>
Epoch	\$0	-	-	
Internal Equity Russell 2000	\$0	-	-	
Fisher Investments	\$0	-	-	
Cornerstone	\$13,959	-	-	
Heitman	\$0	-	-	
TA Realty	\$26,120	-	-	
Allianz Global Investors	\$0	-	-	
C.S. McKee	\$8,953,177	-	-	
JP Morgan Core	\$0	-	-	
Neuberger Berman Credit	\$0	-	-	
Seix	\$0	-	-	
State Street TIPS	\$1,798,617	-	-	
State Street Low Duration	\$0	-	-	
Stone Harbor	\$150,719	-	-	
JP Morgan Cash Composite	\$1,345,948,678	\$2,293,937,746	\$1,350,467,285	



# Investment Manager Profiles





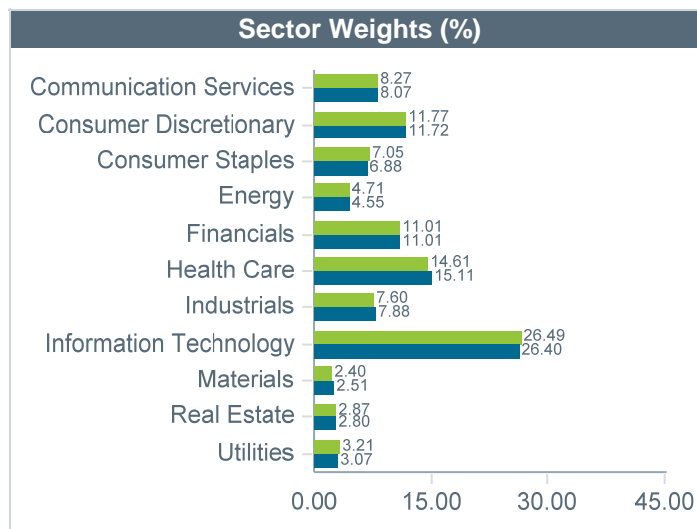
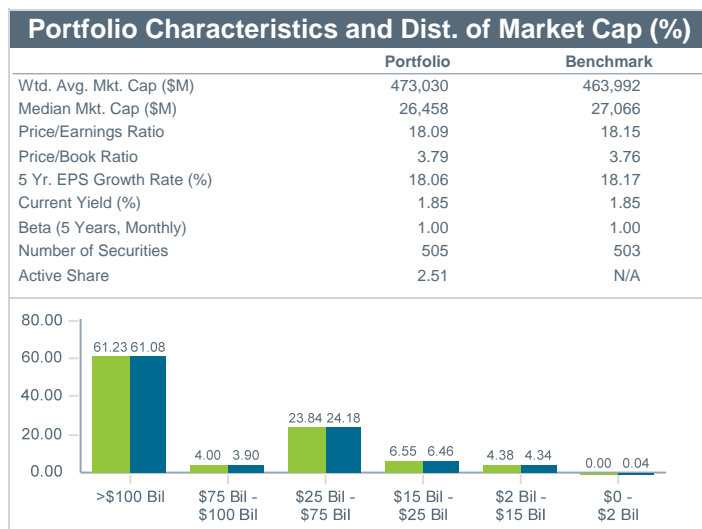
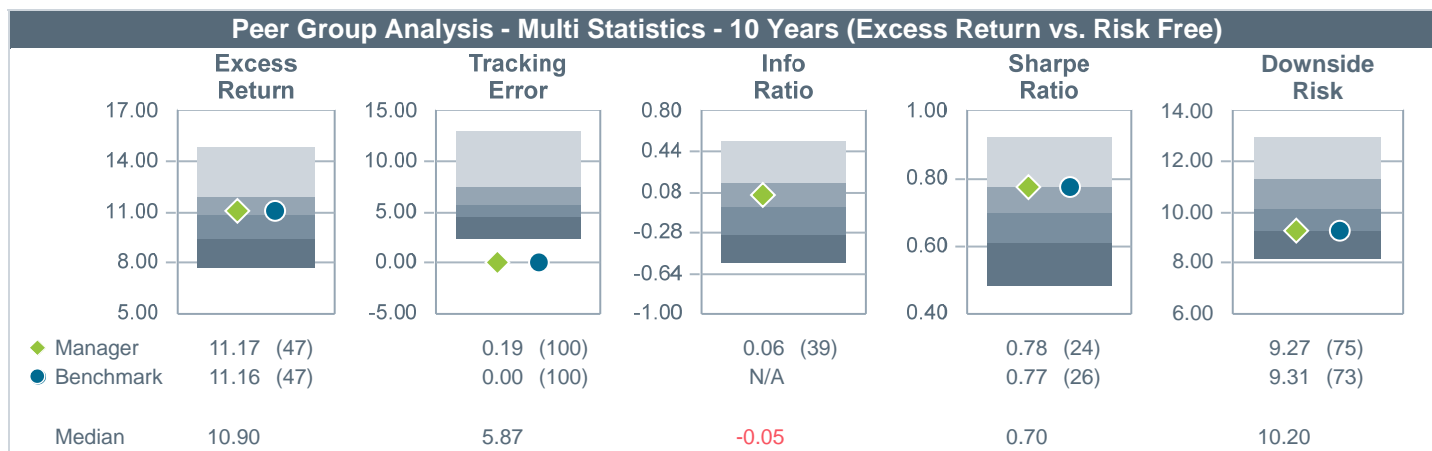
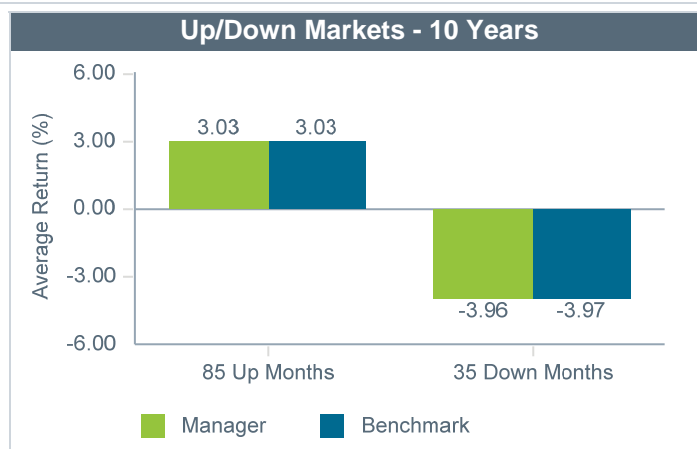
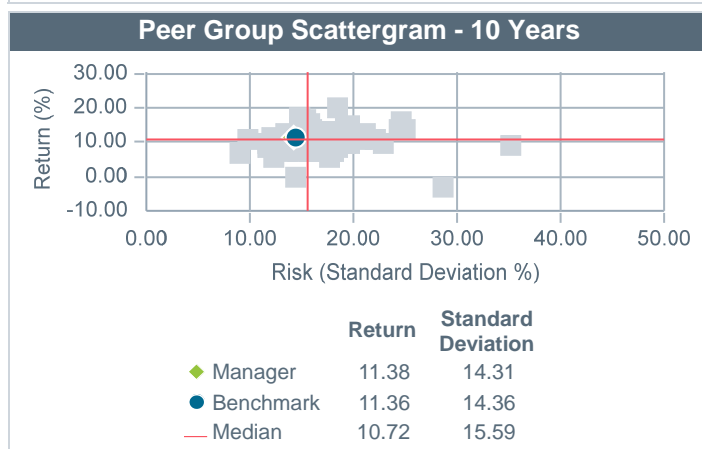
Manager: State Street All Cap

As of September 30, 2022

Benchmark: State Street All Cap Custom Index

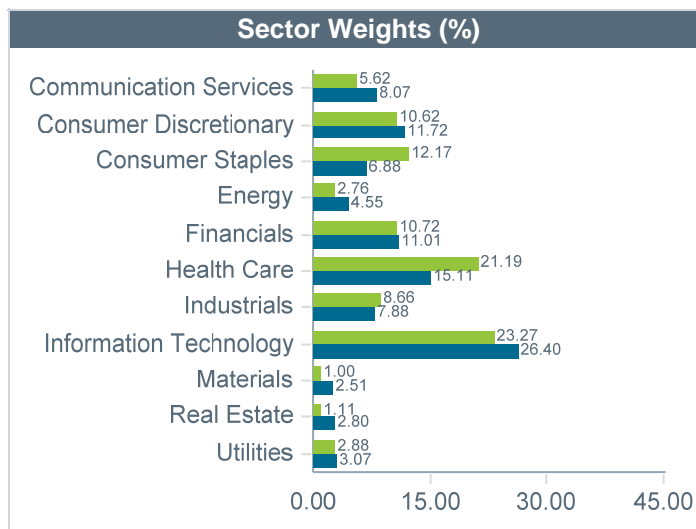
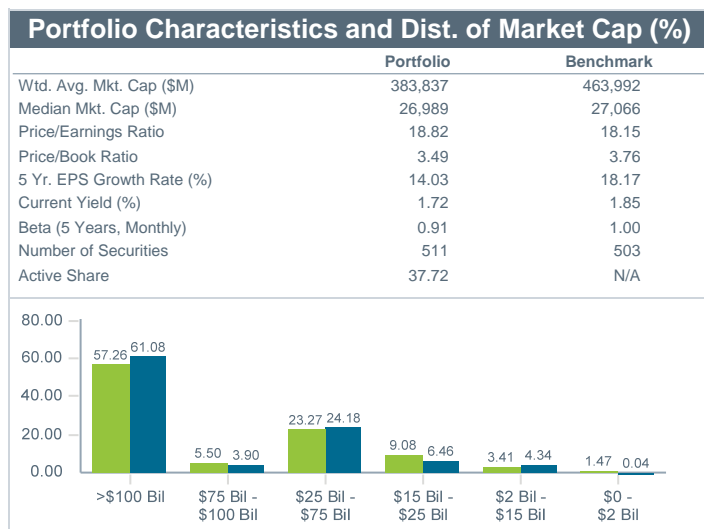
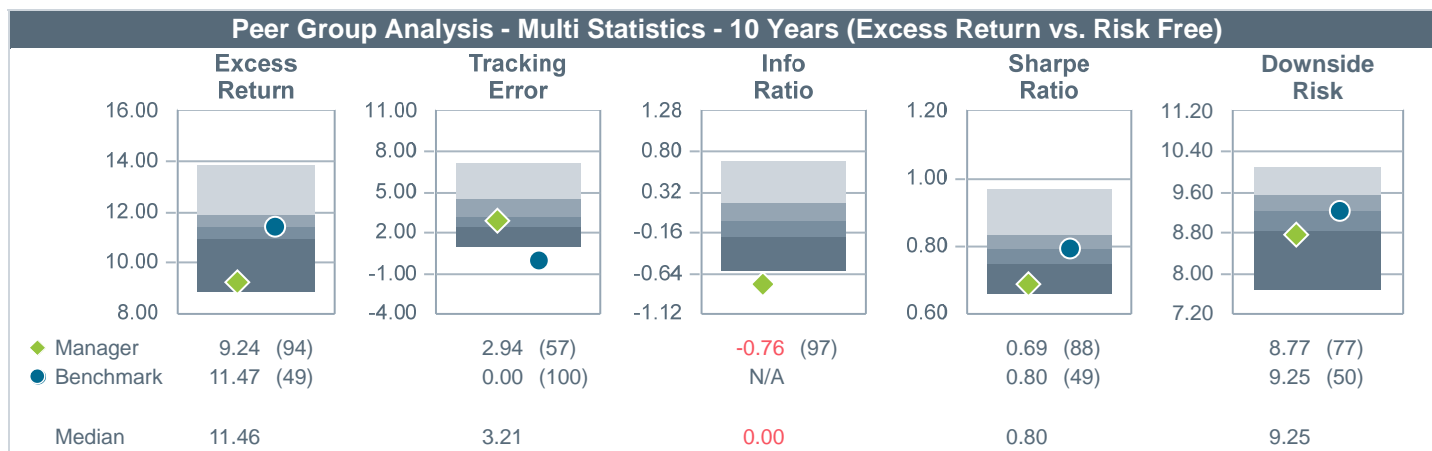
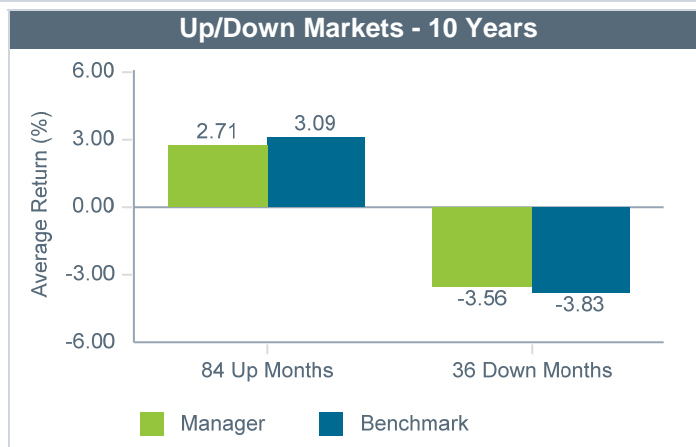
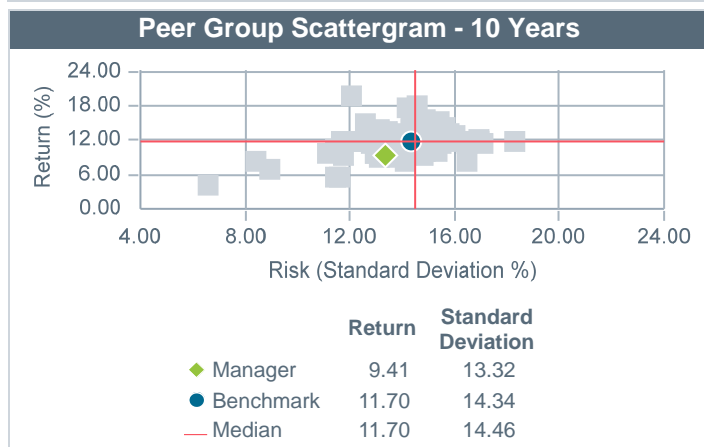
Peer Group: IM U.S. All Cap Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-4.88	-15.47	7.73	8.64	10.86	11.38	28.69	17.58	30.34	-5.25	19.79
Benchmark	-4.88	-15.47	7.74	8.55	10.81	11.36	28.71	17.65	30.11	-5.50	19.85
Difference	0.00	0.00	-0.01	0.09	0.05	0.02	-0.02	-0.07	0.23	0.25	-0.06
Peer Group Median	-4.53	-16.71	6.61	7.69	9.96	10.73	25.28	15.53	28.68	-5.79	19.74
Rank	56	47	37	39	36	40	27	47	42	47	50
Population	206	204	197	190	185	167	216	248	268	280	293



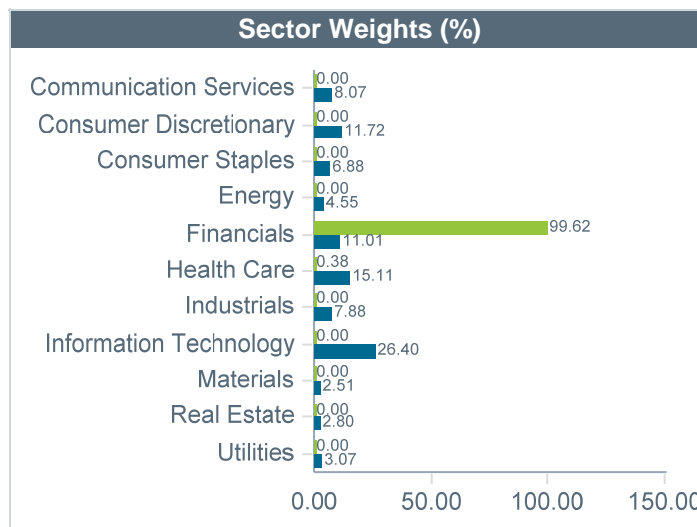
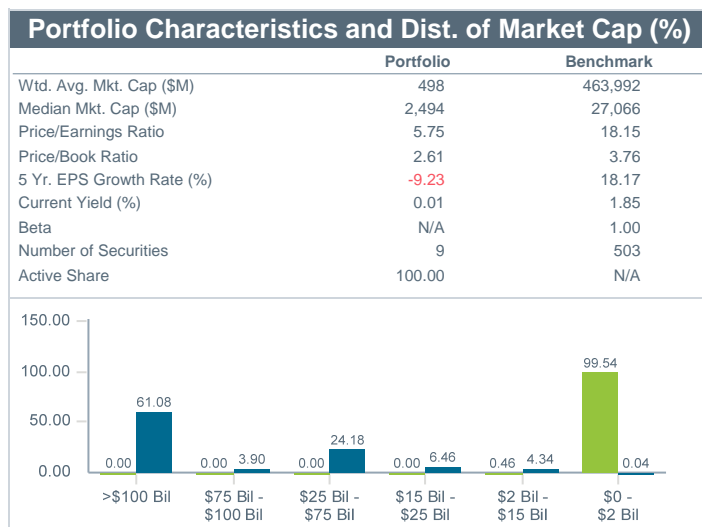
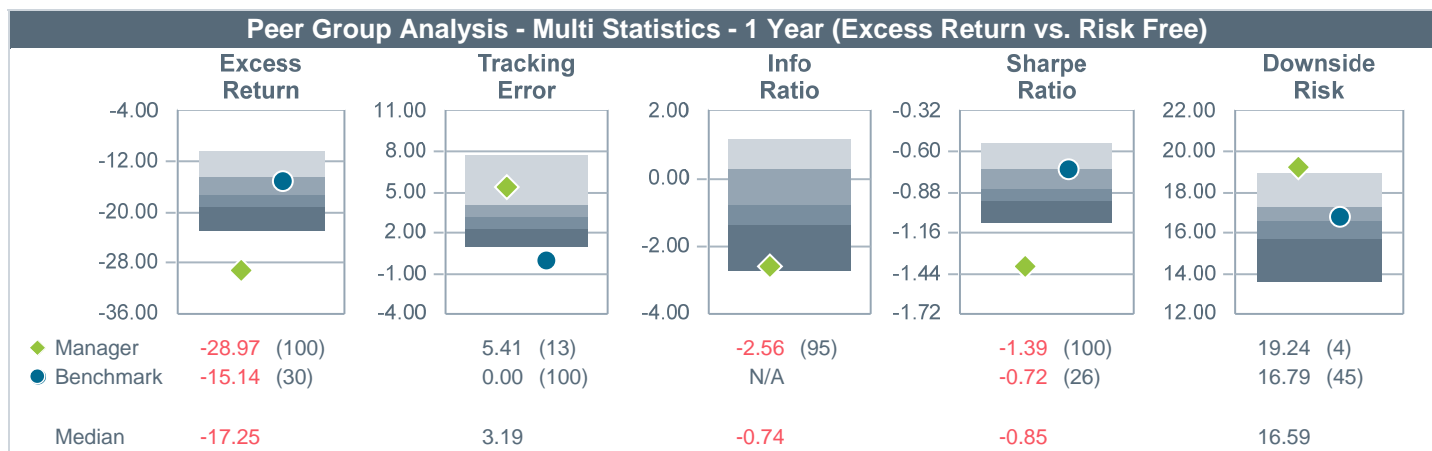
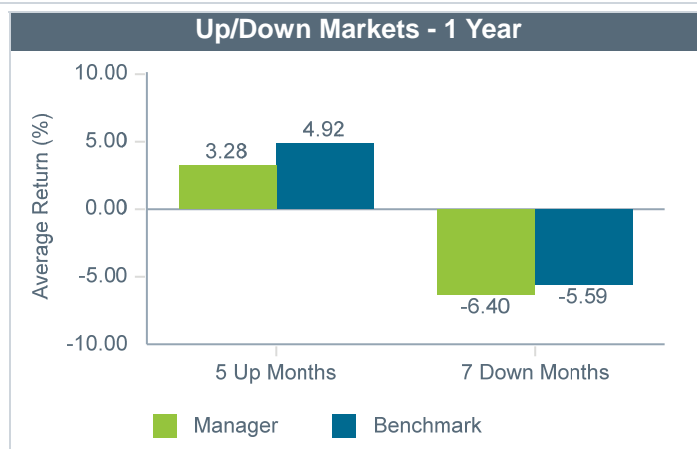
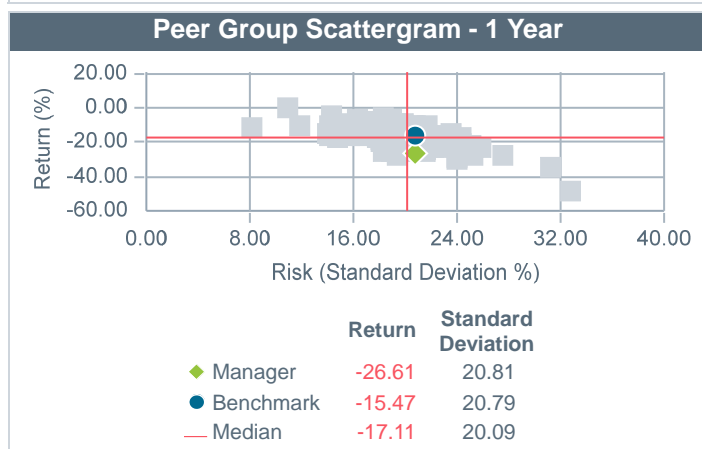
Performance shown is gross of fees. Performance prior to client inception consists of the State Street All Cap Custom Index. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-3.03	-14.45	6.19	6.39	9.06	9.41	23.24	14.73	25.88	-8.04	21.83
Benchmark	-4.88	-15.47	8.16	9.24	11.40	11.70	28.71	18.40	31.49	-4.38	21.83
Difference	1.85	1.02	-1.97	-2.85	-2.34	-2.29	-5.47	-3.67	-5.61	-3.66	0.00
Peer Group Median	-4.75	-15.09	7.88	8.90	10.96	11.70	27.80	17.55	30.08	-5.07	22.09
Rank	14	44	76	90	89	94	80	63	81	85	55
Population	198	198	193	189	182	157	206	226	254	276	302



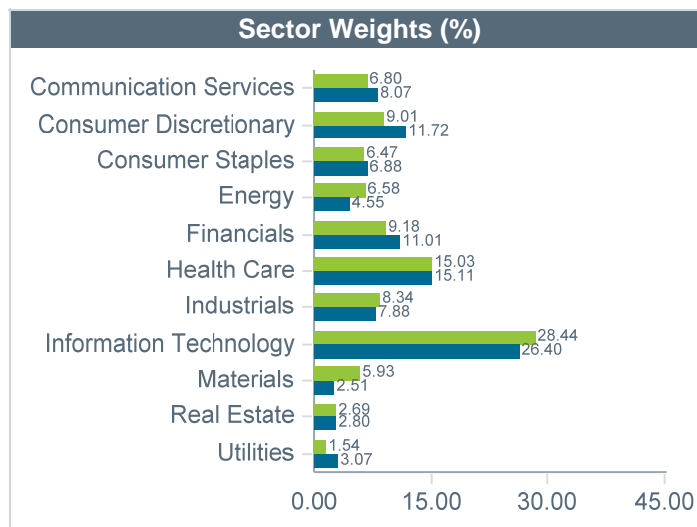
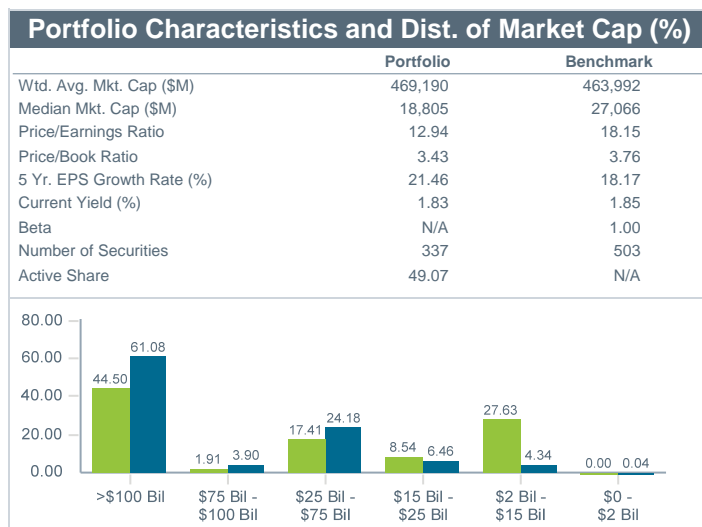
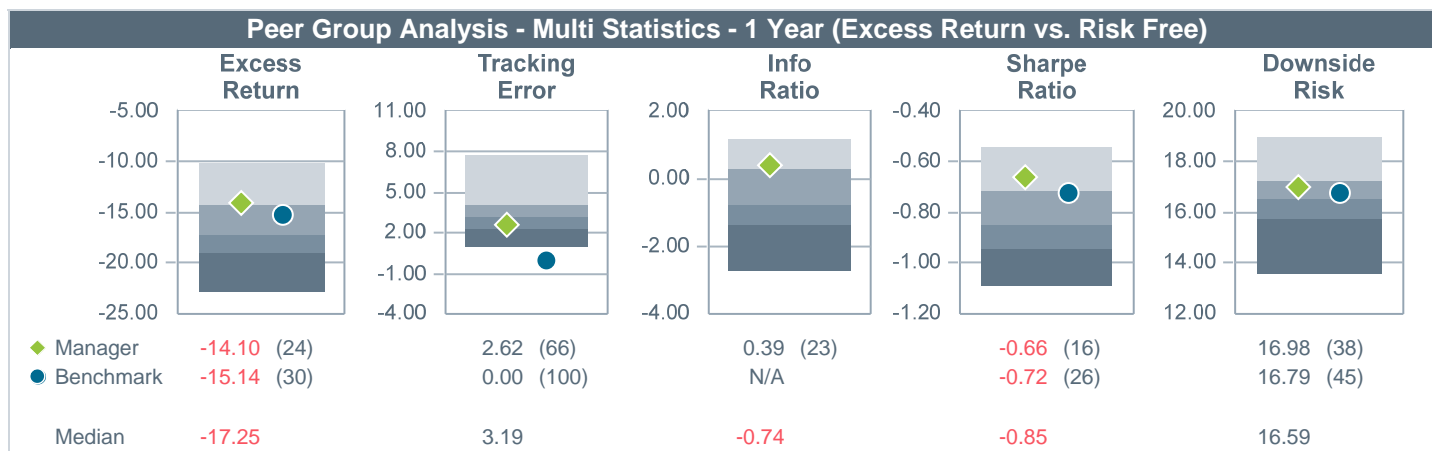
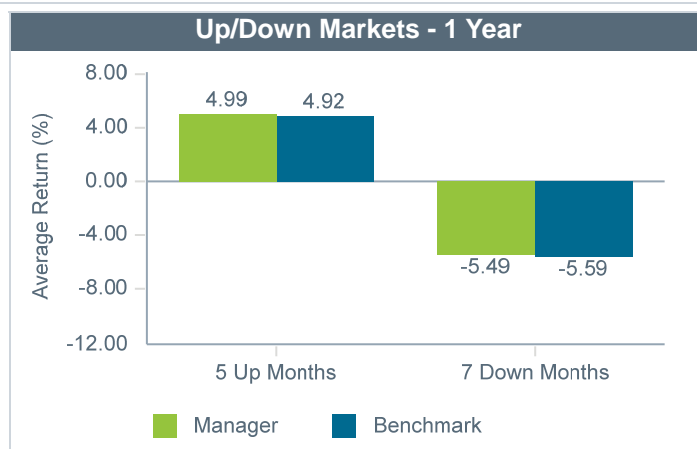
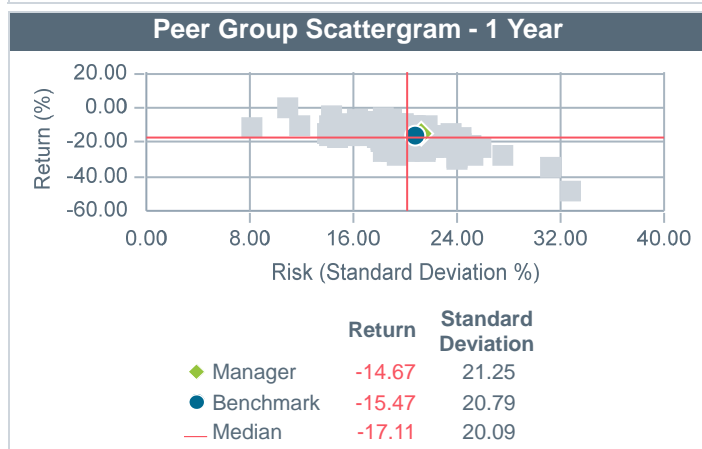
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-1.40	-26.61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	-4.88	-15.47	8.16	9.24	11.40	11.70	28.71	18.40	31.49	-4.38	21.83
Difference	3.48	-11.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	-5.16	-17.11	7.23	8.43	10.39	10.78	26.95	18.39	30.70	-5.45	21.46
Rank	1	99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	653	620	545	497	443	390	606	584	583	580	559



Performance shown is net 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	-3.92	-14.67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	-4.88	-15.47	8.16	9.24	11.40	11.70	28.71	18.40	31.49	-4.38	21.83
Difference	0.96	0.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	-5.16	-17.11	7.23	8.43	10.39	10.78	26.95	18.39	30.70	-5.45	21.46
Rank	10	26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	653	620	545	497	443	390	606	584	583	580	559

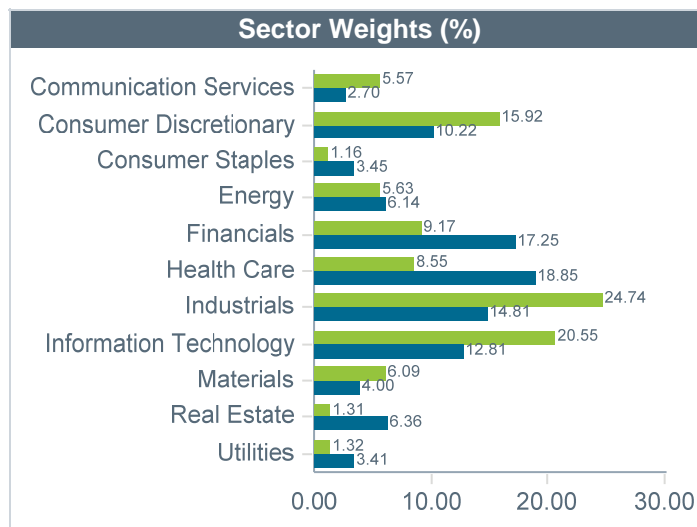
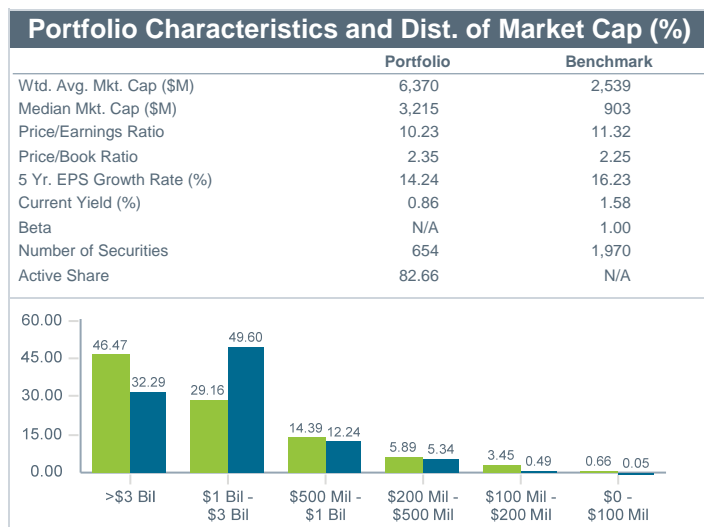
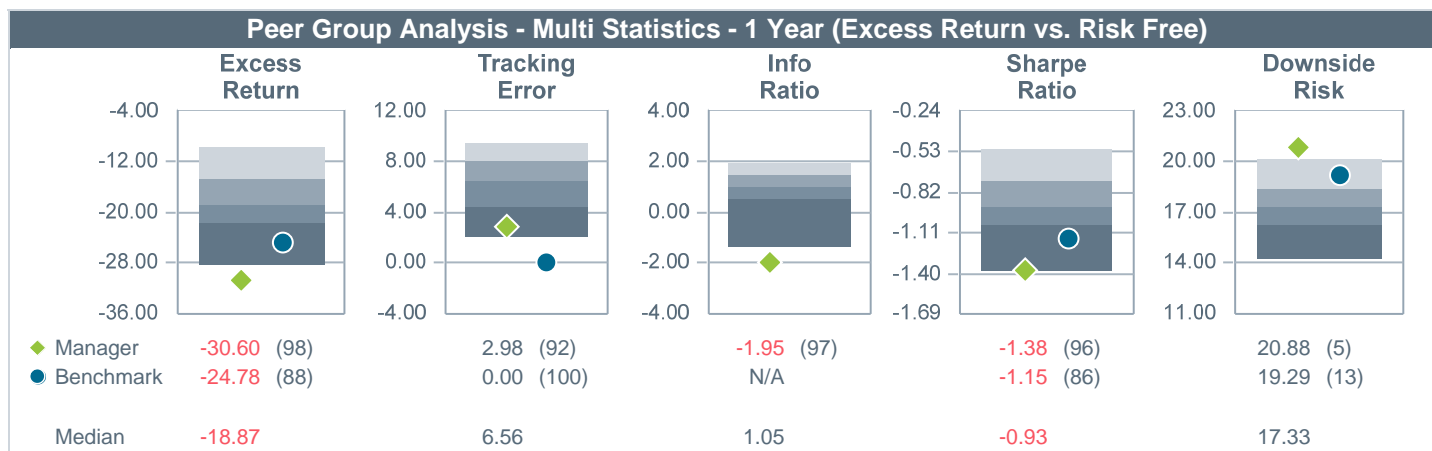
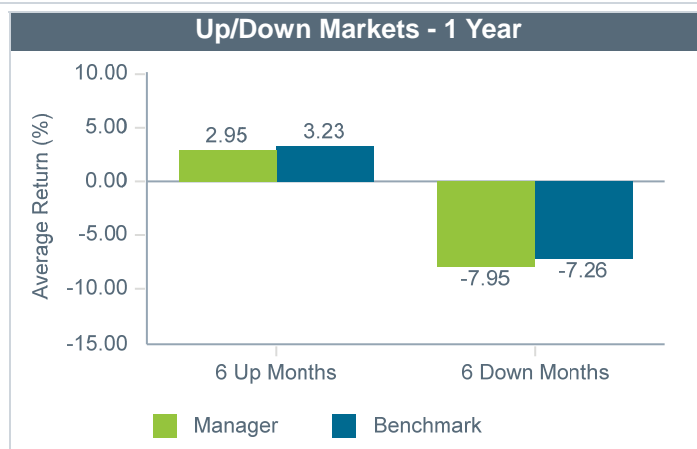
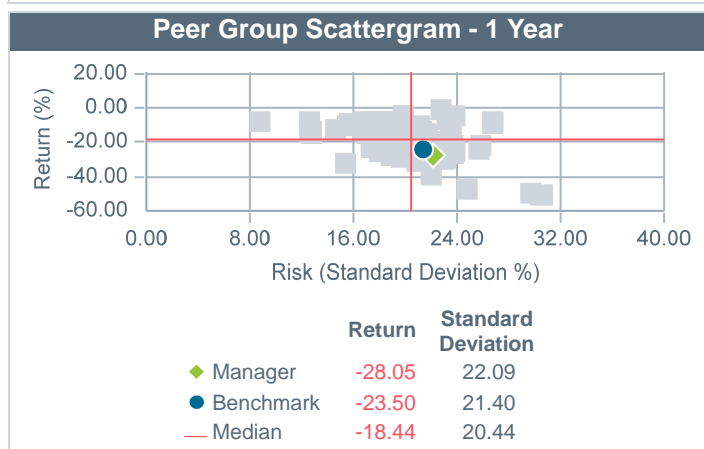


Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

**Manager: Small Cap Equity Quantamental**
**As of September 30, 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	-4.35	-28.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	-2.19	-23.50	4.29	3.55	7.51	8.55	14.82	19.96	25.53	-11.01	14.65
Difference	-2.16	-4.55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	-4.49	-18.44	4.59	3.53	6.97	8.28	25.13	9.89	23.94	-12.71	12.09
Rank	48	98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	694	687	657	613	516	415	703	722	742	776	774

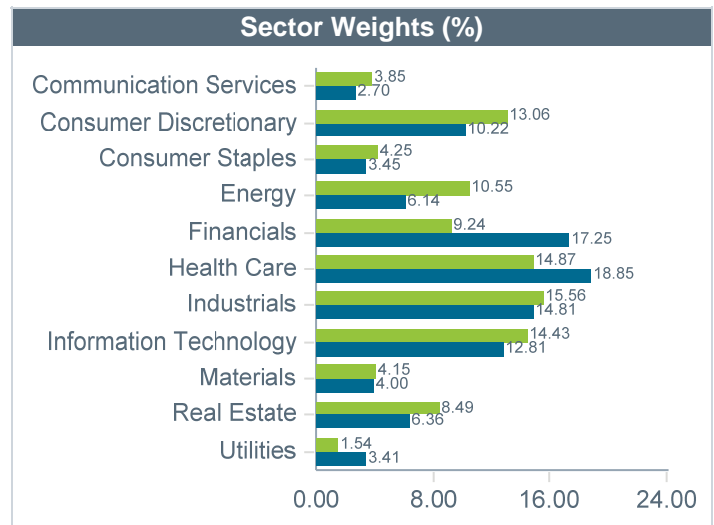
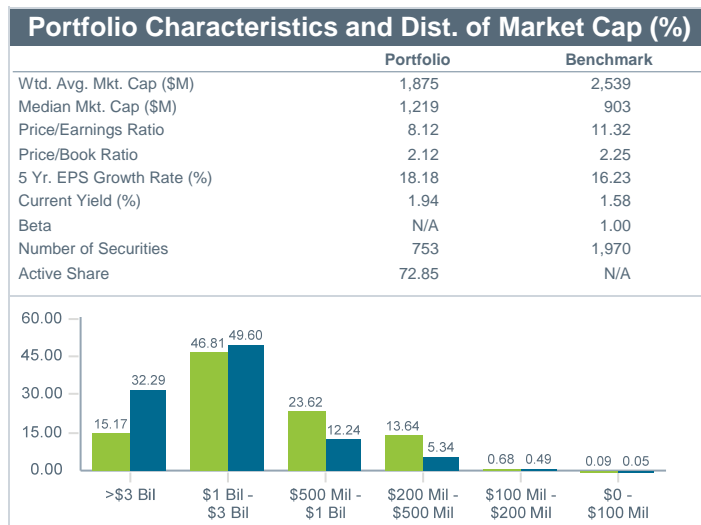
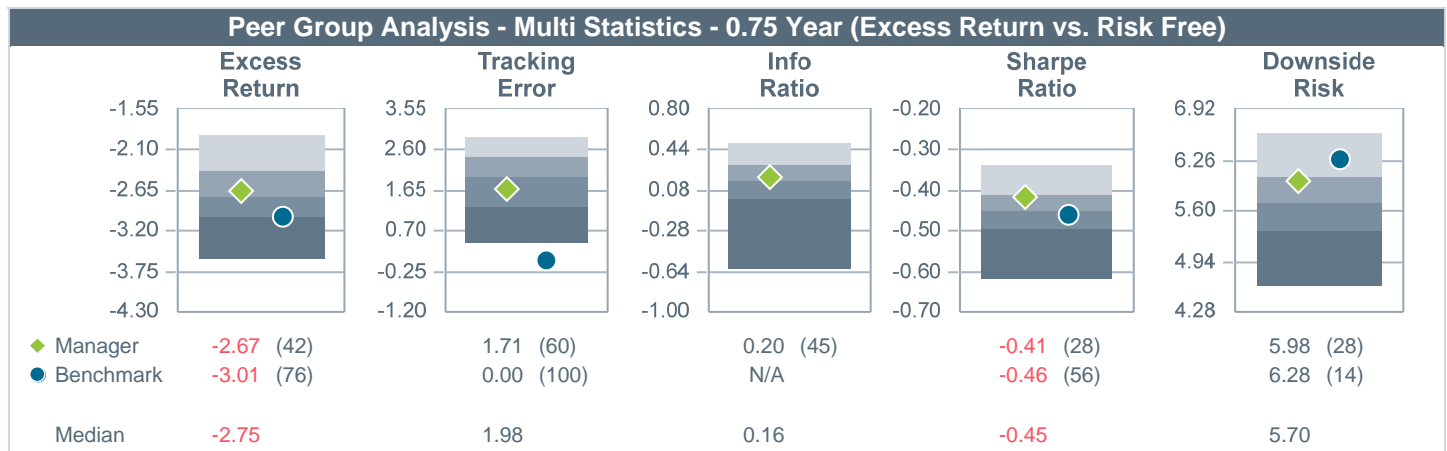
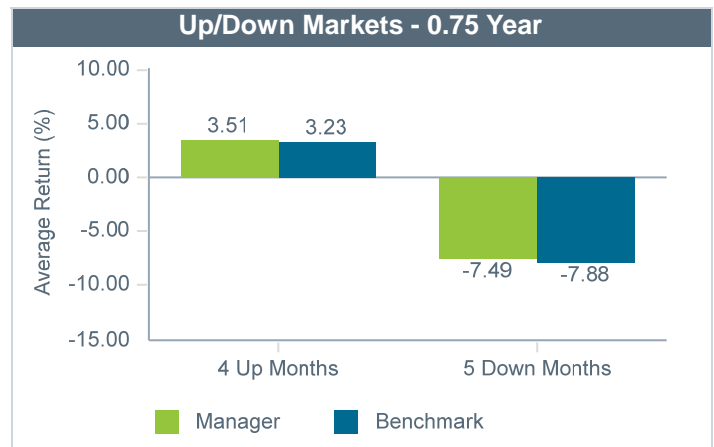
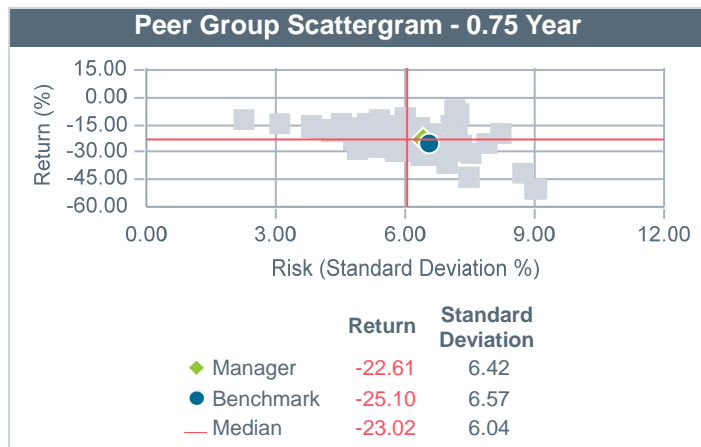


Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

**Manager: Small Cap Equity Quantitative**
**As of September 30, 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	-4.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	-2.19	-23.50	4.29	3.55	7.51	8.55	14.82	19.96	25.53	-11.01	14.65
Difference	-2.71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	-4.49	-18.44	4.59	3.53	6.97	8.28	25.13	9.89	23.94	-12.71	12.09
Rank	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	694	687	657	613	516	415	703	722	742	776	774



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

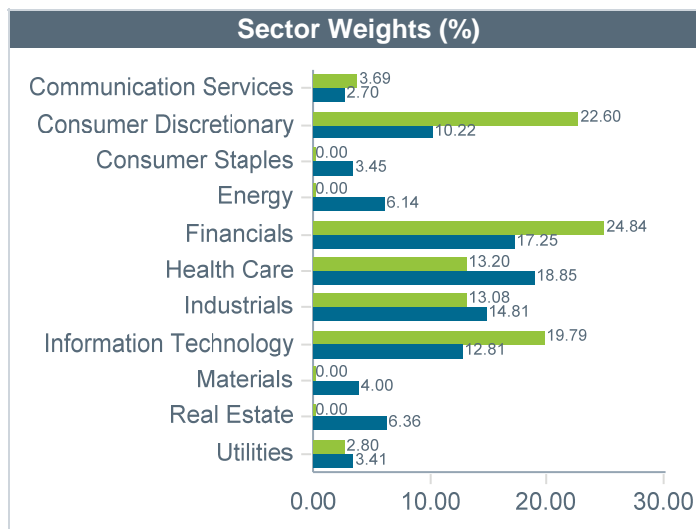
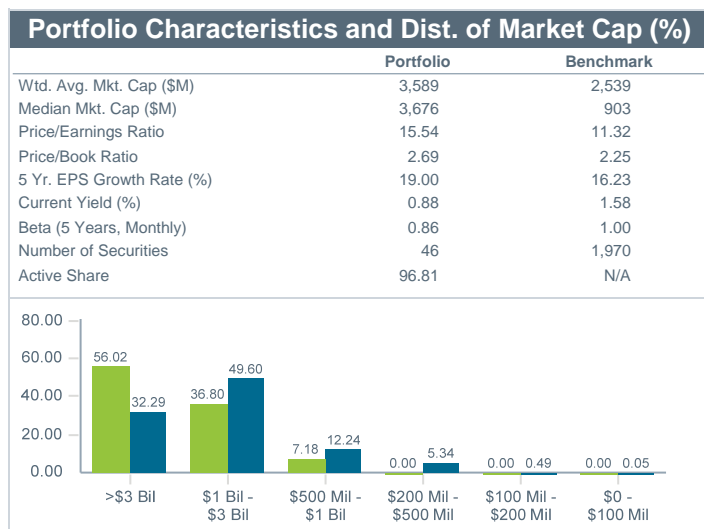
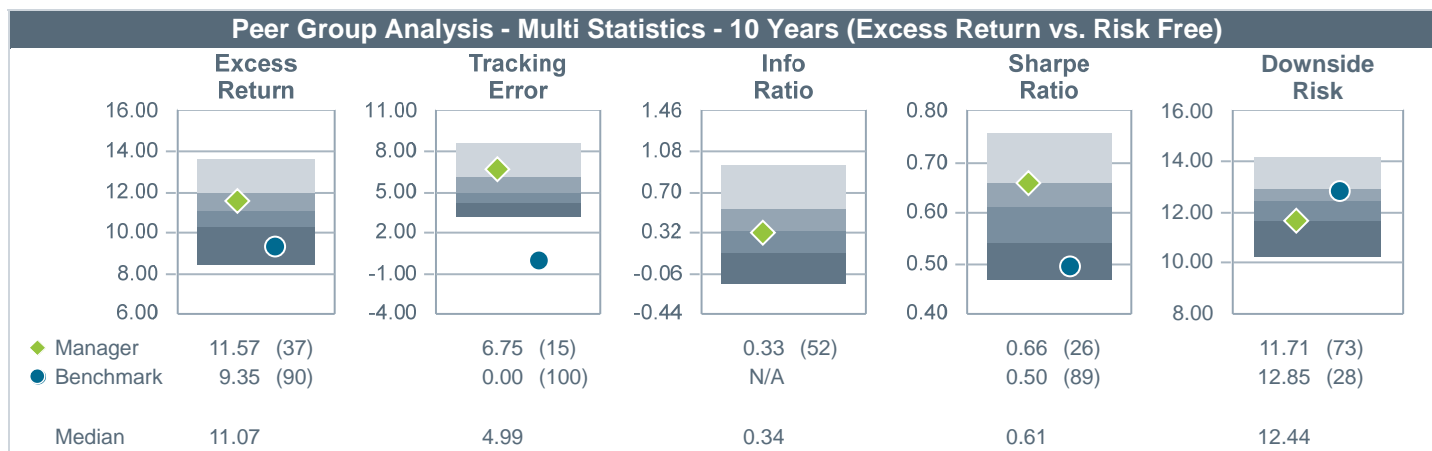
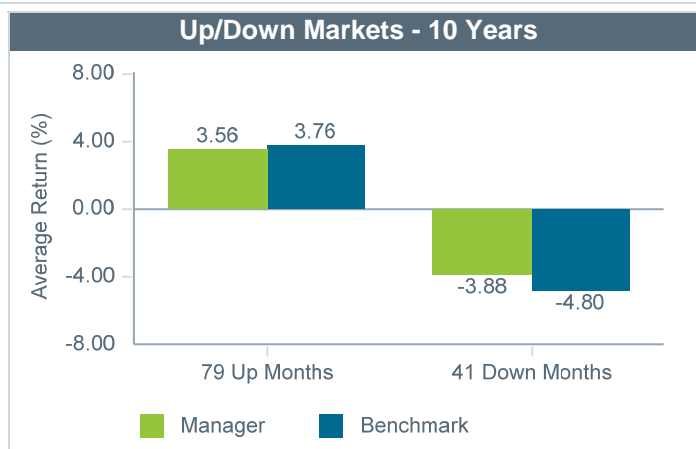
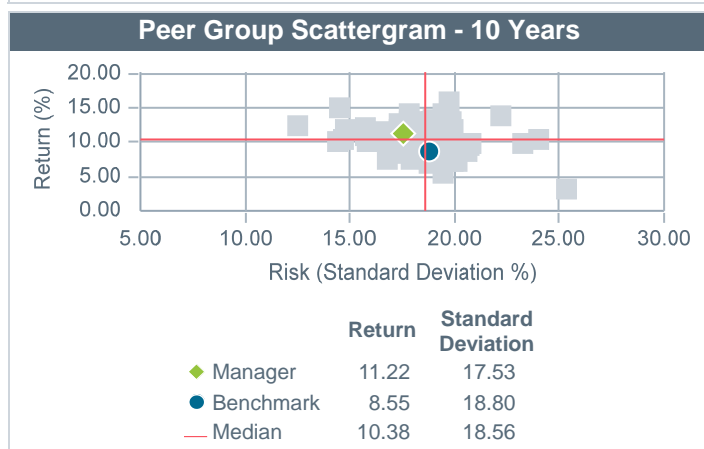
Manager: Van Berkom

As of September 30, 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	-2.94	-18.60	2.57	5.81	9.58	11.22	16.73	9.22	29.96	-2.61	16.57
Benchmark	-2.19	-23.50	4.29	3.55	7.51	8.55	14.82	19.96	25.53	-11.01	14.65
Difference	-0.75	4.90	-1.72	2.26	2.07	2.67	1.91	-10.74	4.43	8.40	1.92
Peer Group Median	-3.27	-18.85	6.54	6.05	9.08	10.37	24.14	18.71	25.88	-10.11	15.10
Rank	46	48	93	56	40	30	86	84	23	8	37
Population	138	137	135	130	124	112	151	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.

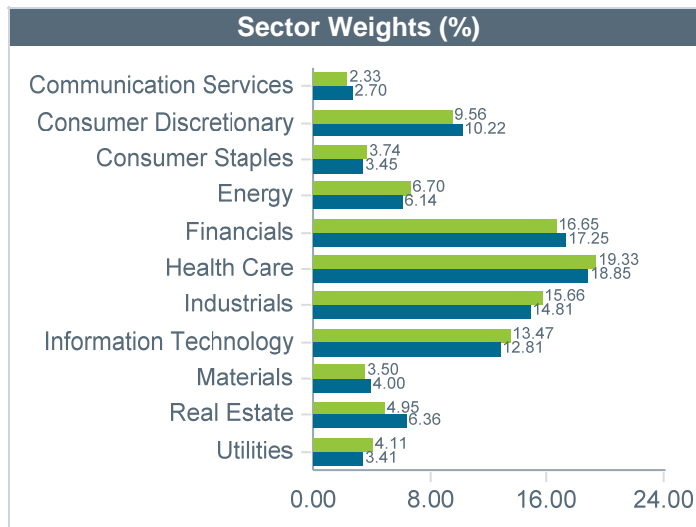
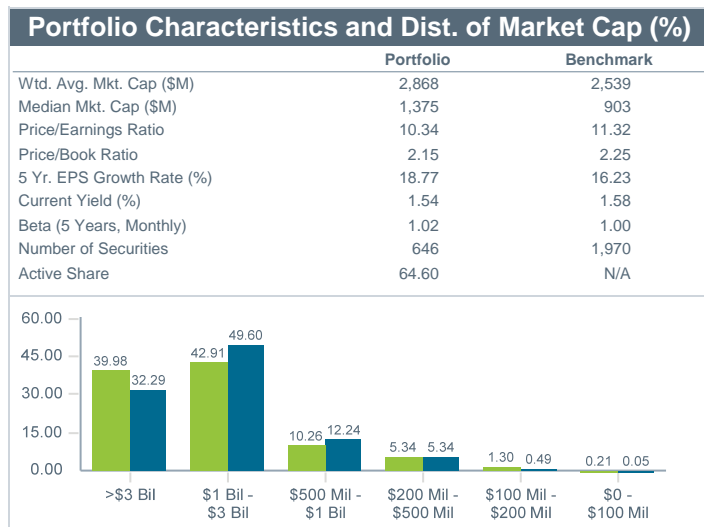
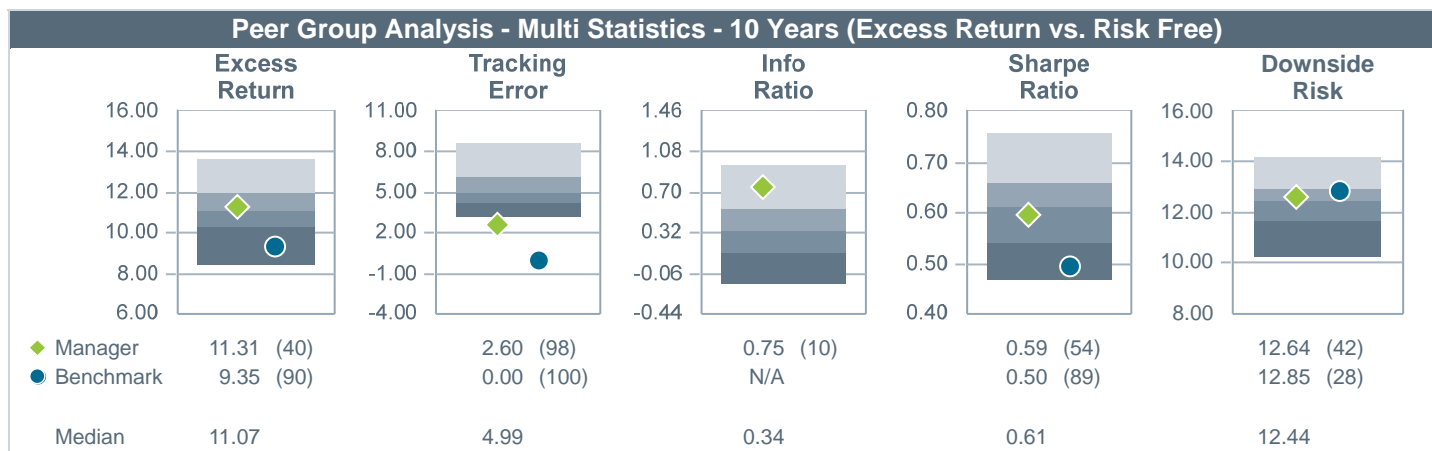
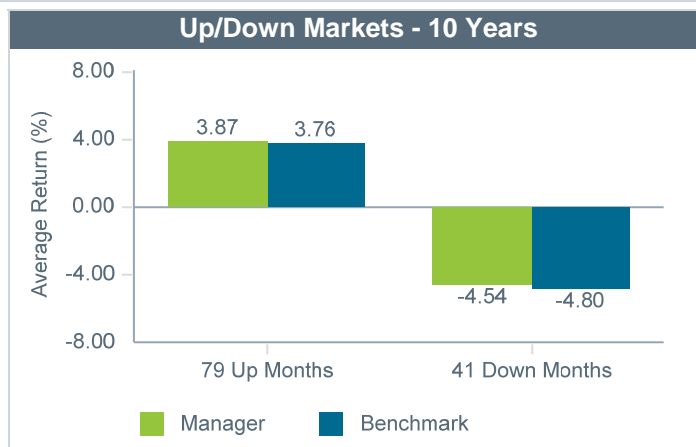
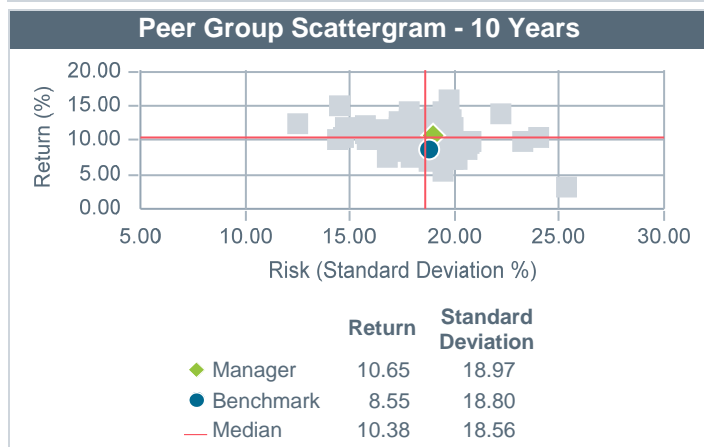
Manager: BlackRock Small Cap

As of September 30, 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	-1.82	-22.64	5.91	5.78	8.62	10.65	15.95	22.25	33.43	-9.09	11.38
Benchmark	-2.19	-23.50	4.29	3.55	7.51	8.55	14.82	19.96	25.53	-11.01	14.65
Difference	0.37	0.86	1.62	2.23	1.11	2.10	1.13	2.29	7.90	1.92	-3.27
Peer Group Median	-3.27	-18.85	6.54	6.05	9.08	10.37	24.14	18.71	25.88	-10.11	15.10
Rank	22	80	61	57	62	45	89	32	11	38	81
Population	138	137	135	130	124	112	151	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.



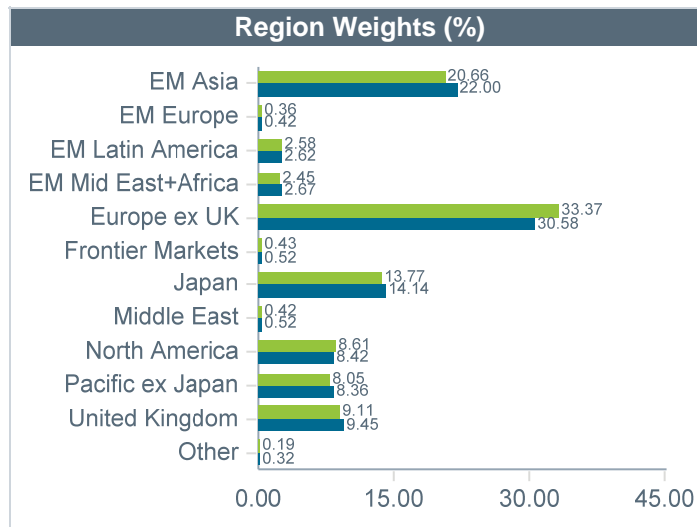
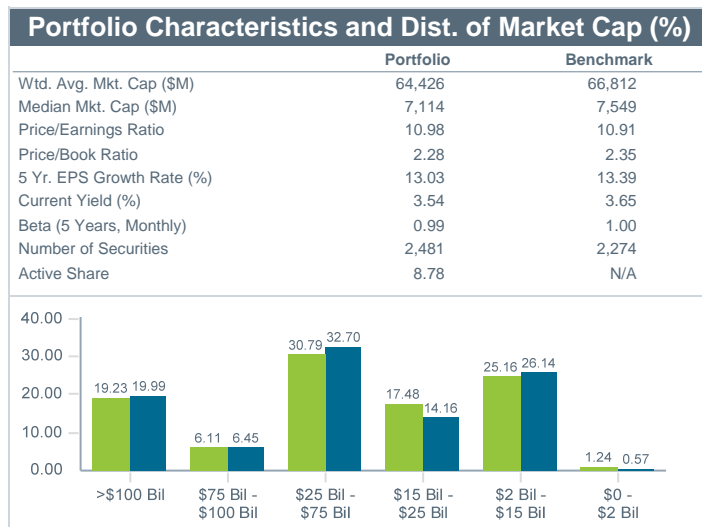
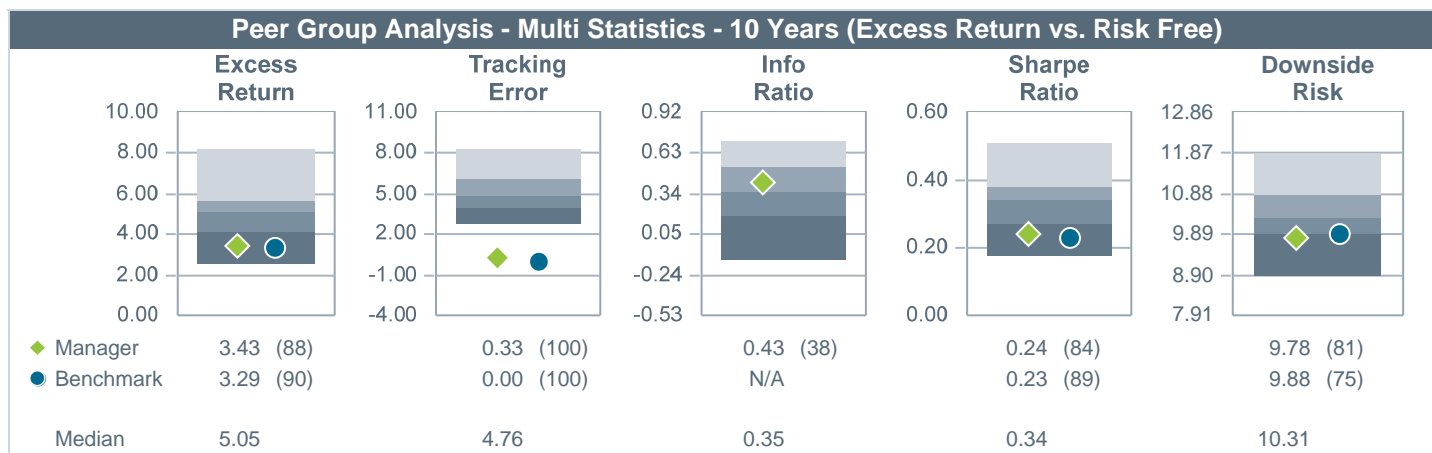
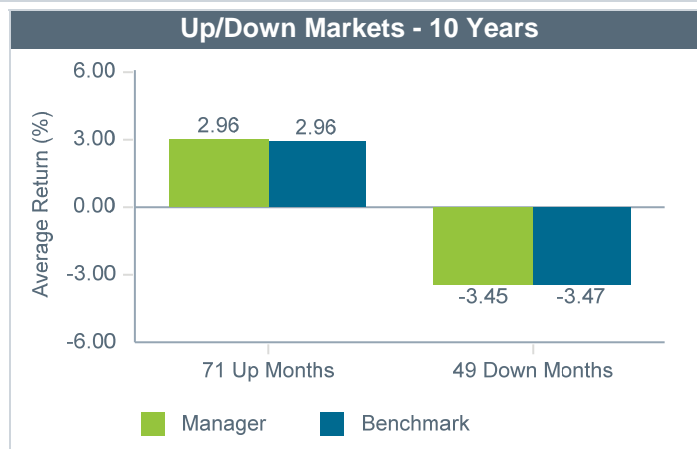
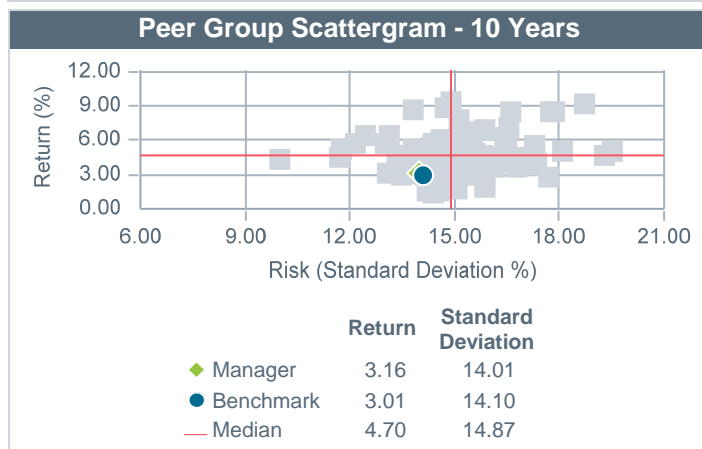
Manager: Northern Trust

As of September 30, 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	-9.90	-24.89	-1.46	-0.65	3.43	3.16	7.86	10.69	21.66	-13.81	27.51
Benchmark	-9.91	-25.17	-1.52	-0.81	3.29	3.01	7.82	10.65	21.51	-14.20	27.19
Difference	0.01	0.28	0.06	0.16	0.14	0.15	0.04	0.04	0.15	0.39	0.32
Peer Group Median	-9.43	-26.02	-0.49	0.27	3.91	4.70	9.59	14.71	24.92	-14.61	28.77
Rank	60	38	65	67	70	85	66	60	68	41	62
Population	148	148	147	147	146	133	150	163	170	180	190



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.

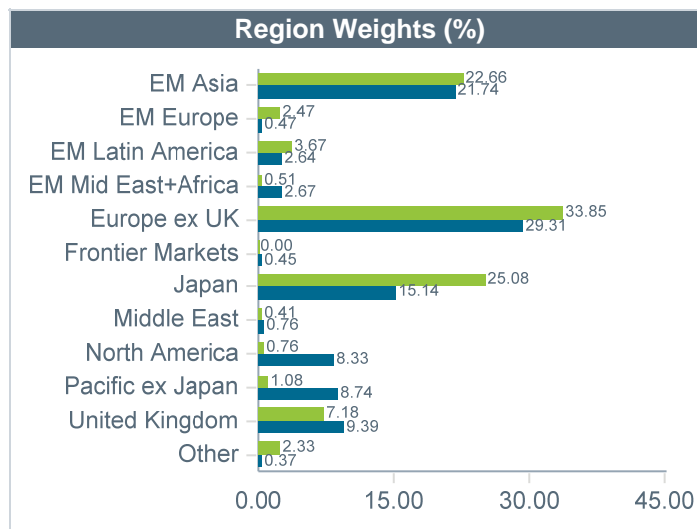
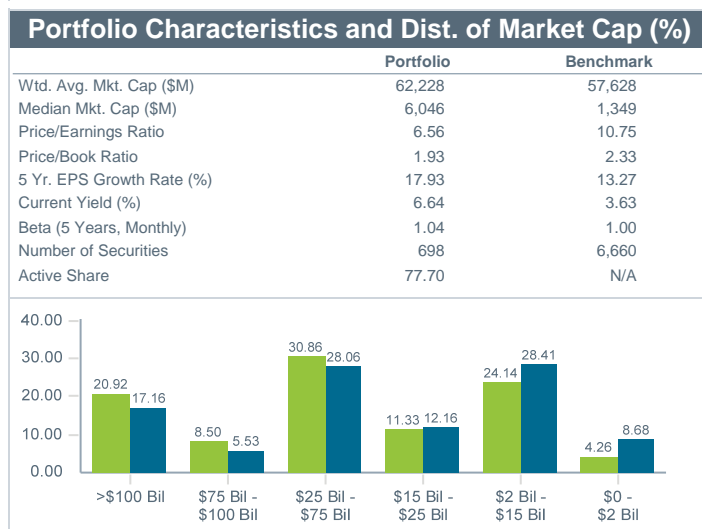
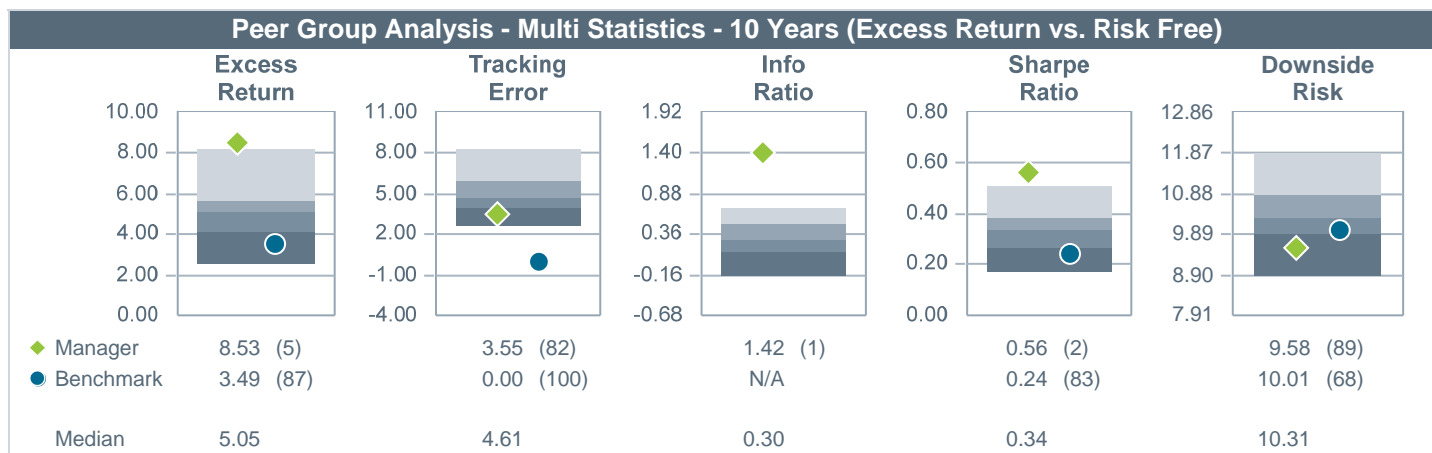
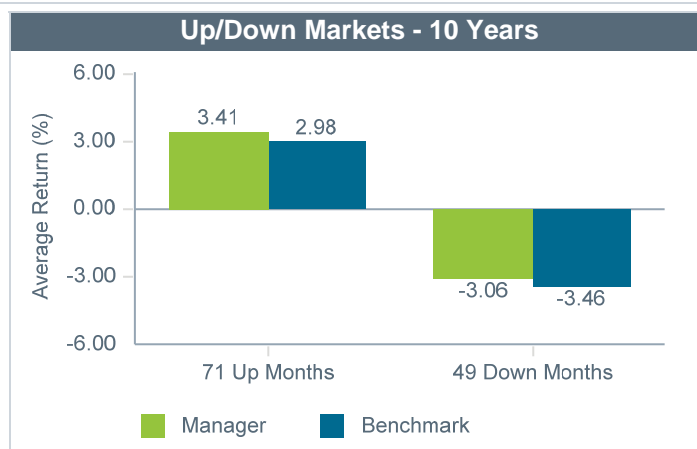
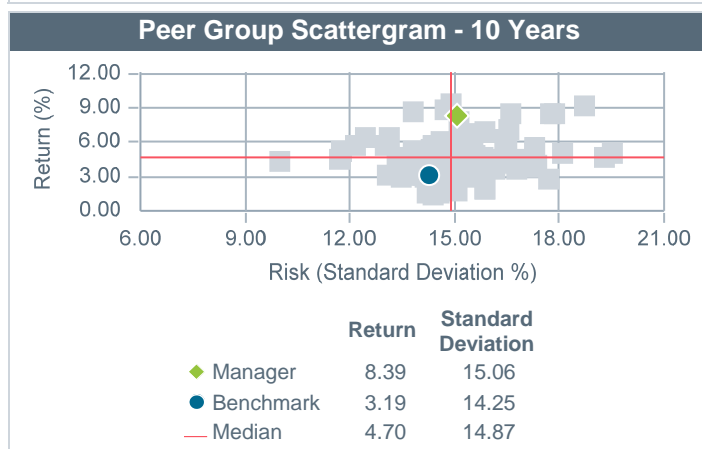
Manager: Arrowstreet

As of September 30, 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	-9.31	-21.78	6.64	4.15	8.16	8.39	14.38	23.28	23.43	-13.84	29.12
Benchmark	-9.69	-25.72	-1.27	-0.78	3.38	3.19	8.53	11.12	21.63	-14.76	27.81
Difference	0.38	3.94	7.91	4.93	4.78	5.20	5.85	12.16	1.80	0.92	1.31
Peer Group Median	-9.43	-26.02	-0.49	0.27	3.91	4.70	9.59	14.71	24.92	-14.61	28.77
Rank	49	14	1	5	5	5	12	22	57	41	48
Population	148	148	147	147	146	133	150	163	170	180	190



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

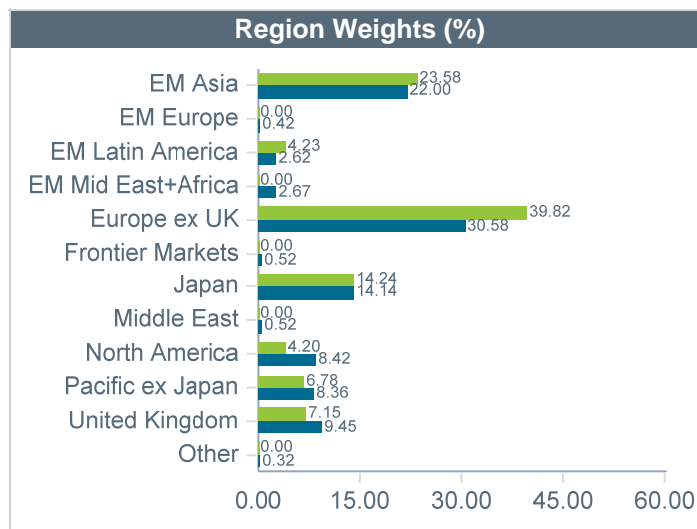
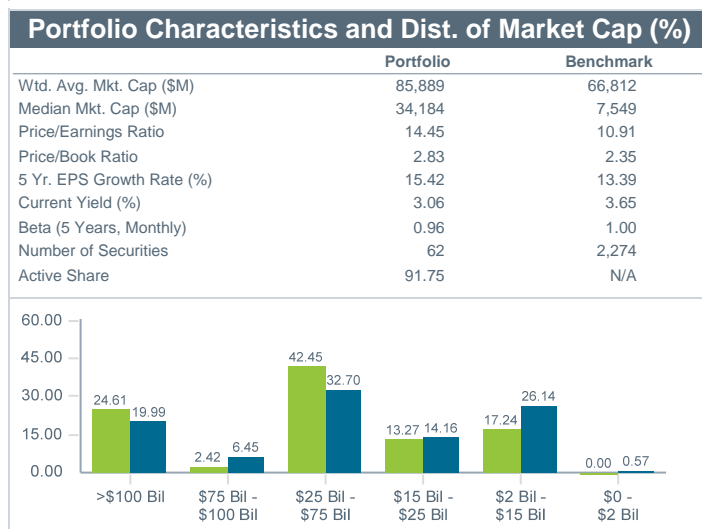
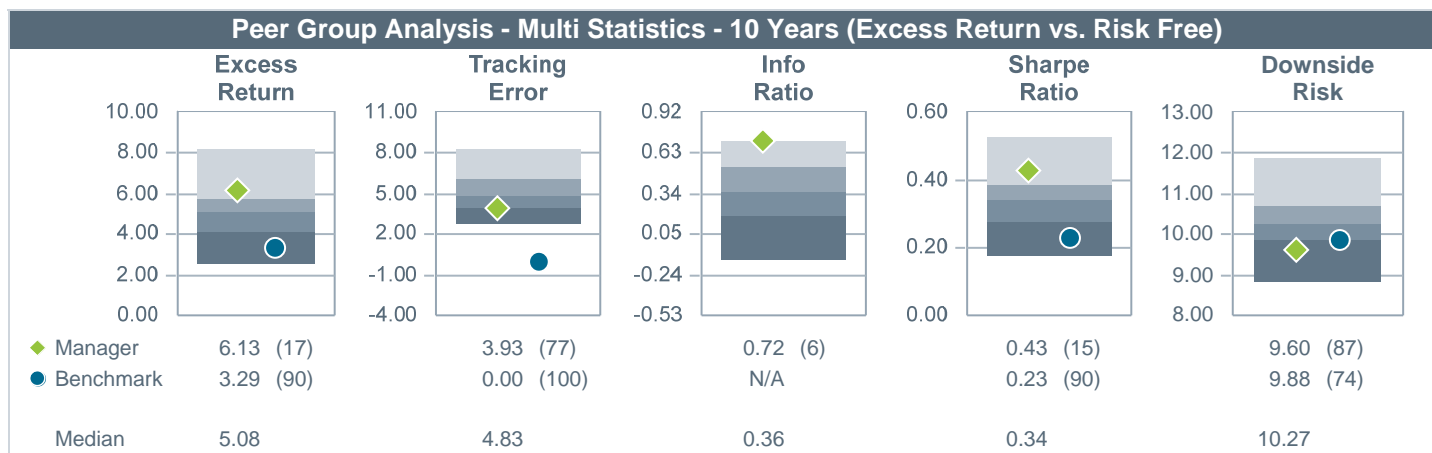
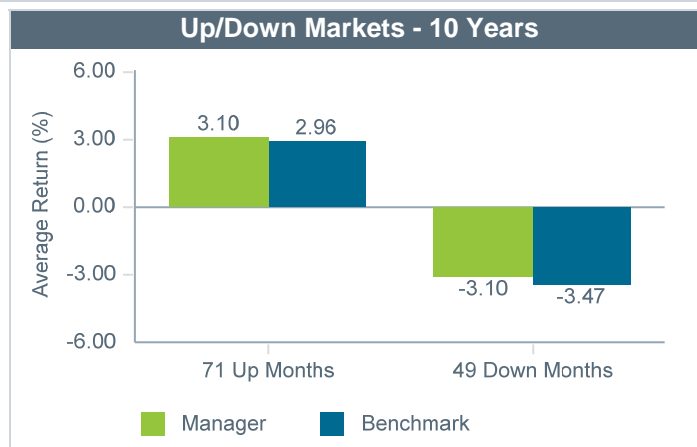
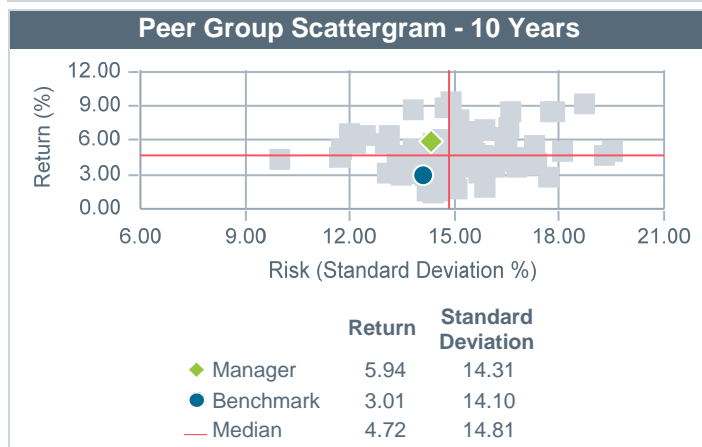
Manager: Harding Loevner

As of September 30, 2022

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

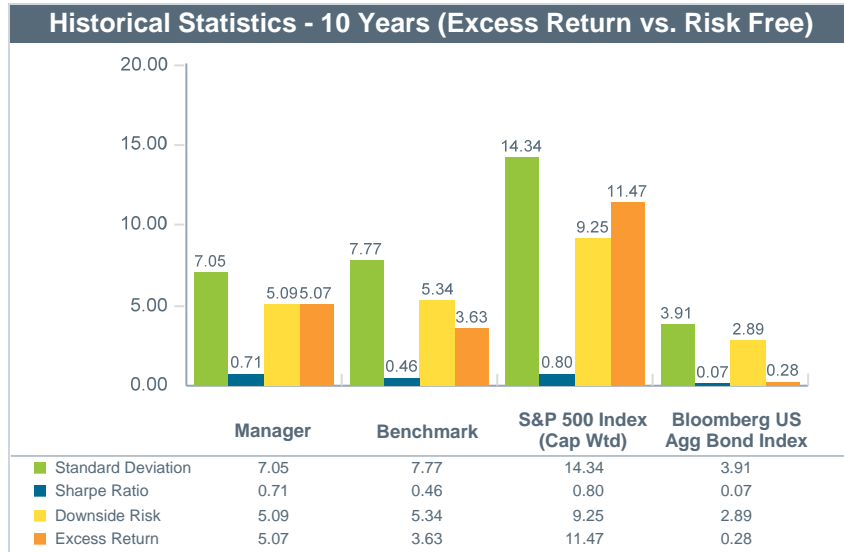
Peer Group: IM All ACWI Ex US (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-7.22	-23.31	1.80	1.92	6.63	5.94	8.65	20.86	26.27	-13.24	30.86
Benchmark	-9.91	-25.17	-1.52	-0.81	3.29	3.01	7.82	10.65	21.51	-14.20	27.19
Difference	2.69	1.86	3.32	2.73	3.34	2.93	0.83	10.21	4.76	0.96	3.67
Peer Group Median	-9.43	-26.02	-0.49	0.27	3.91	4.70	9.59	14.71	24.92	-14.61	28.77
Rank	7	22	15	15	9	14	59	32	43	33	38
Population	148	148	147	147	146	133	150	163	170	180	190



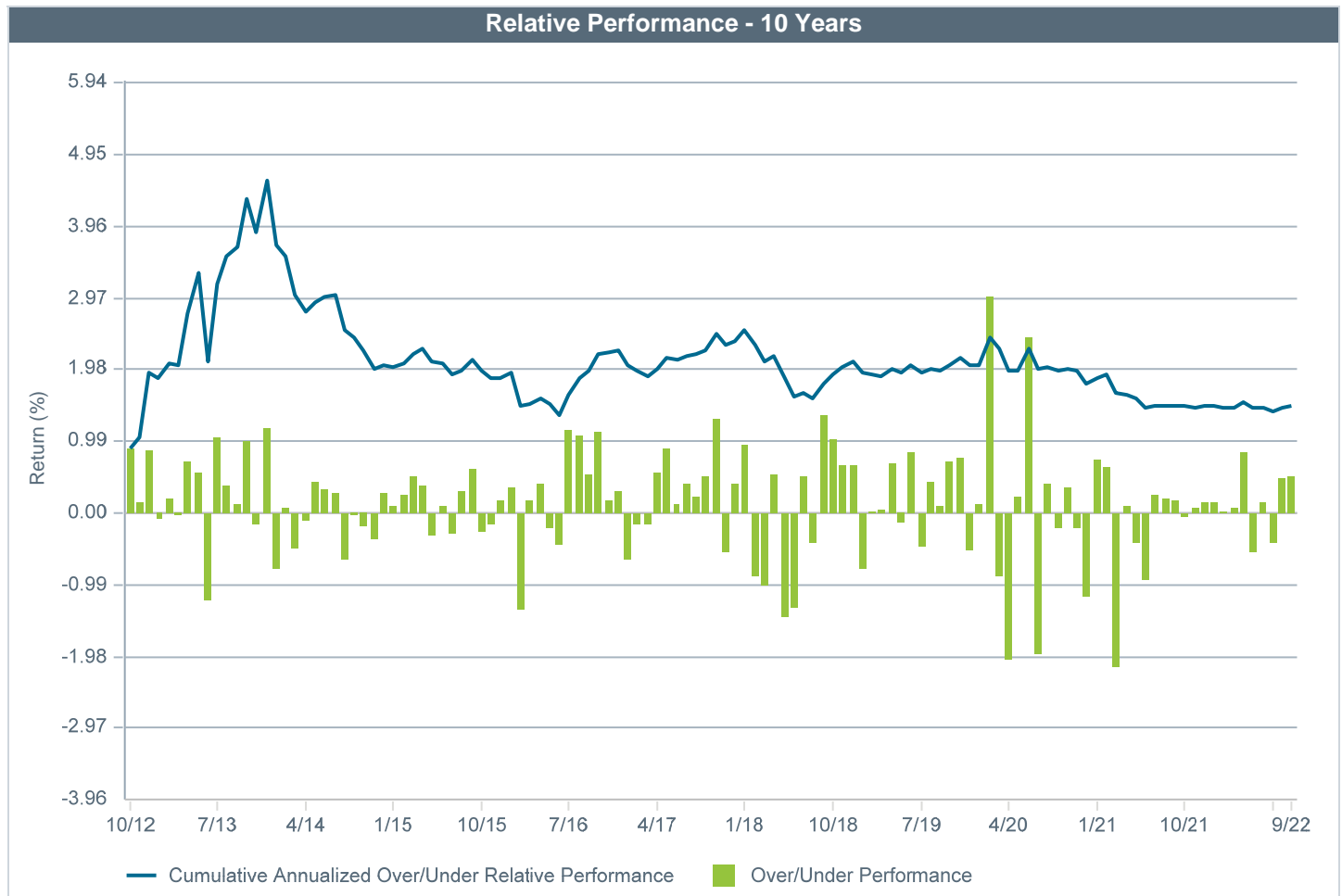
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-1.56	-13.67	0.22	2.62	4.62	5.63	4.48	8.01	19.68	-3.68	12.31
Benchmark	-2.11	-14.92	-0.14	1.89	3.36	4.09	5.71	7.97	17.64	-4.25	9.11
Difference	0.55	1.25	0.36	0.73	1.26	1.54	-1.23	0.04	2.04	0.57	3.20



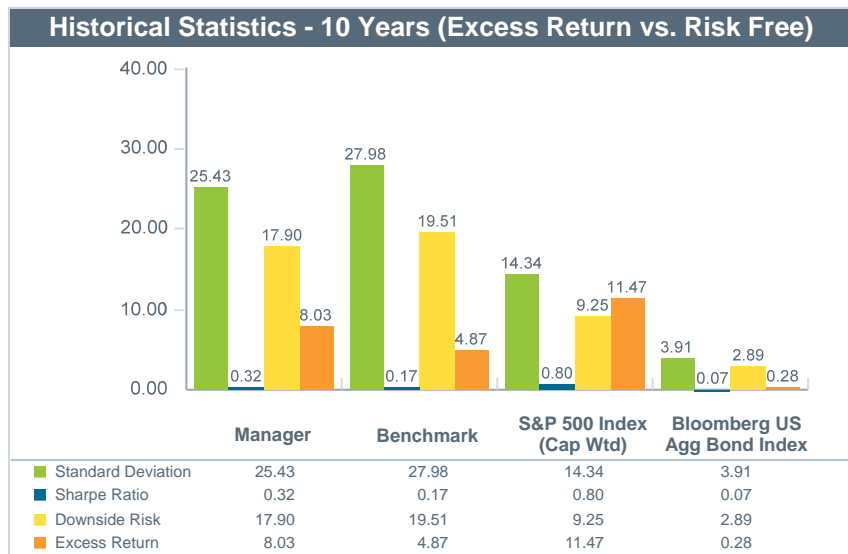
**Actual Correlation - 10 Years**

	Actual Correlation
Preferred Stock Custom Index	0.97
S&P 500 Index (Cap Wtd)	0.81
Russell 2000 Index	0.74
MSCI EAFE Index (USD) (Net)	0.82
MSCI Emg Mkts Index (USD) (Net)	0.76
Bloomberg US Agg Bond Index	0.46
Bloomberg US Trsy US TIPS Index	0.53
NCREIF ODCE Index (AWA) (Gross)	-0.36
Wilshire US REIT Index	0.74
HFRI FOF Comp Index	0.83
Bloomberg Cmnty Index (TR)	0.33
ICE BofAML 3 Mo US T-Bill Index	-0.19
Cons Price Index (Unadjusted)	-0.22



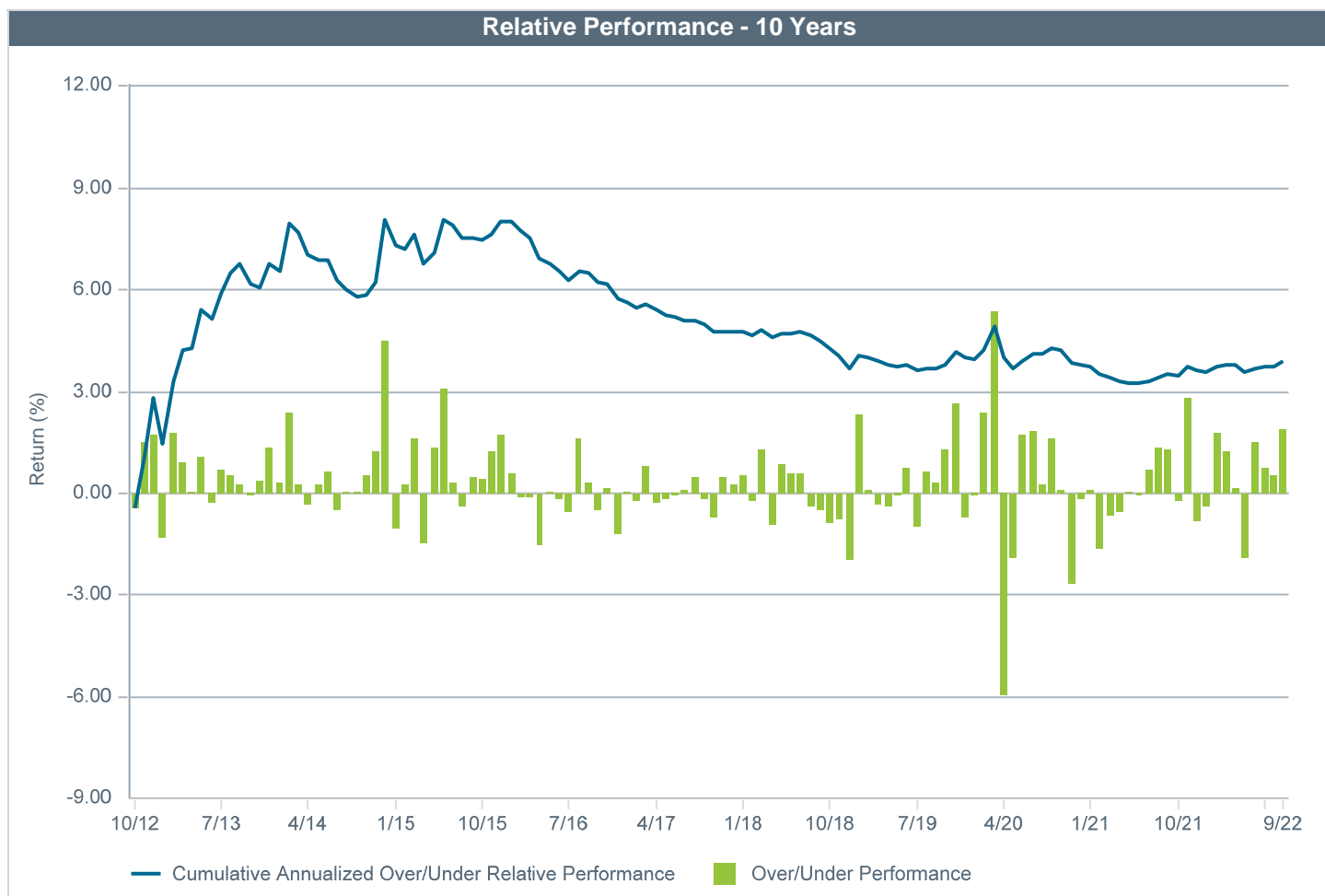
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	6.75	24.35	9.47	5.49	5.40	5.37	42.64	-23.94	13.82	-13.12	-4.98
Benchmark	3.47	15.68	4.74	2.56	2.91	1.40	39.33	-25.60	7.55	-11.67	-5.58
Difference	3.28	8.67	4.73	2.93	2.49	3.97	3.31	1.66	6.27	-1.45	0.60



**Actual Correlation - 10 Years**

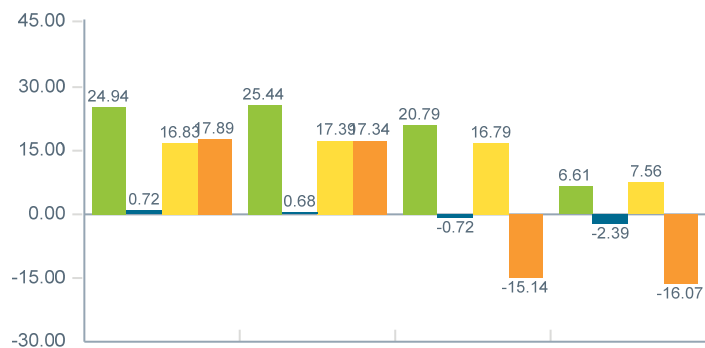
	Actual Correlation
MLP Custom Index	0.99
S&P 500 Index (Cap Wtd)	0.69
Russell 2000 Index	0.73
MSCI EAFE Index (USD) (Net)	0.63
MSCI Emg Mkts Index (USD) (Net)	0.54
Bloomberg US Agg Bond Index	-0.16
Bloomberg US Trsy US TIPS Index	0.11
NCREIF ODCE Index (AWA) (Gross)	0.01
Wilshire US REIT Index	0.58
HFRI FOF Comp Index	0.70
Bloomberg Cmnty Index (TR)	0.69
ICE BofAML 3 Mo US T-Bill Index	-0.29
Cons Price Index (Unadjusted)	0.29



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	3.73	16.47	N/A	N/A	N/A	N/A	40.02	N/A	N/A	N/A	N/A
Benchmark	3.47	15.68	4.74	2.56	2.91	1.40	39.33	-25.60	7.55	-11.67	-5.58
Difference	0.26	0.79	N/A	N/A	N/A	N/A	0.69	N/A	N/A	N/A	N/A

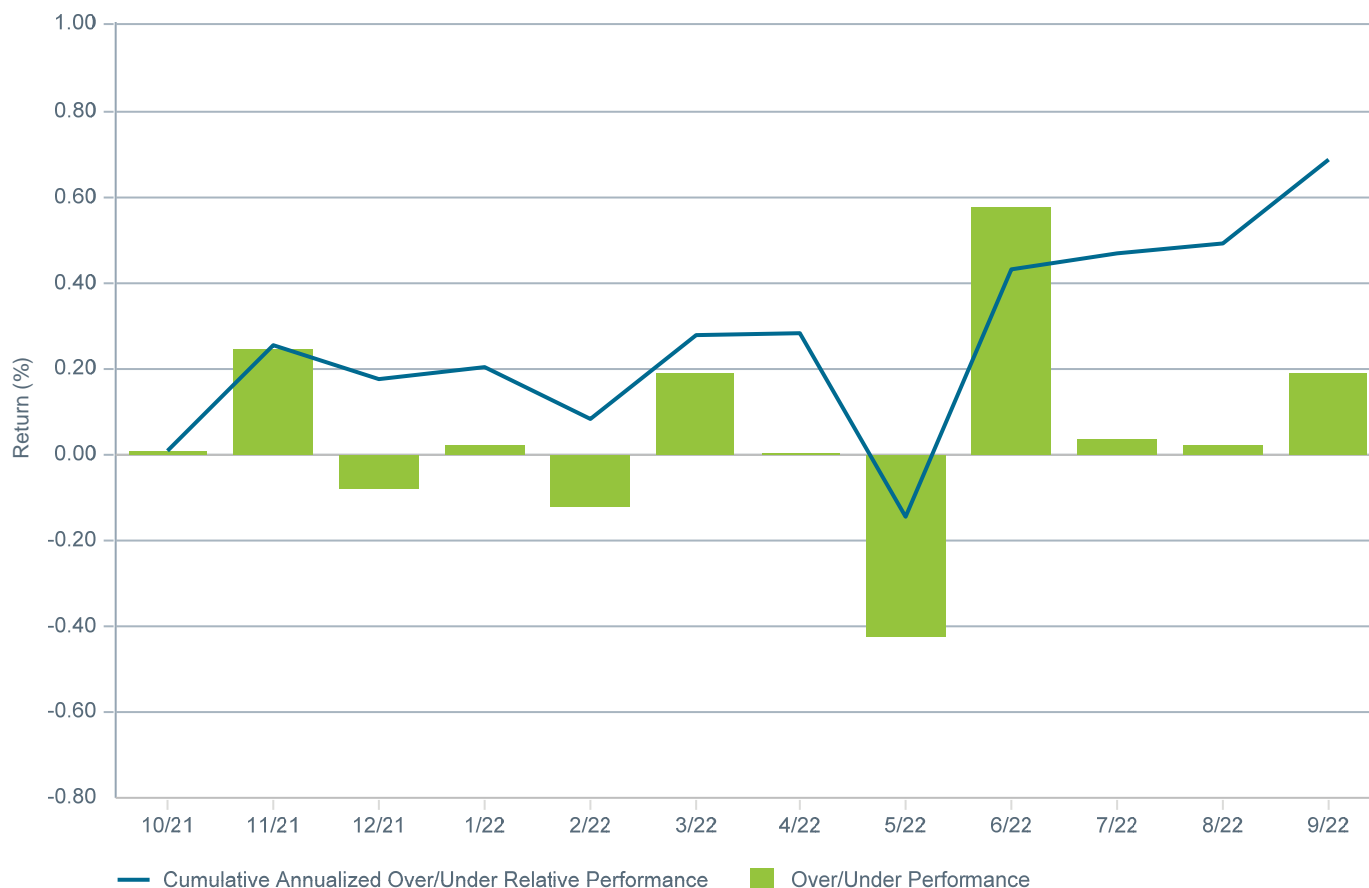
#### Historical Statistics - 1 Year (Excess Return vs. Risk Free)



#### Actual Correlation - 1 Year

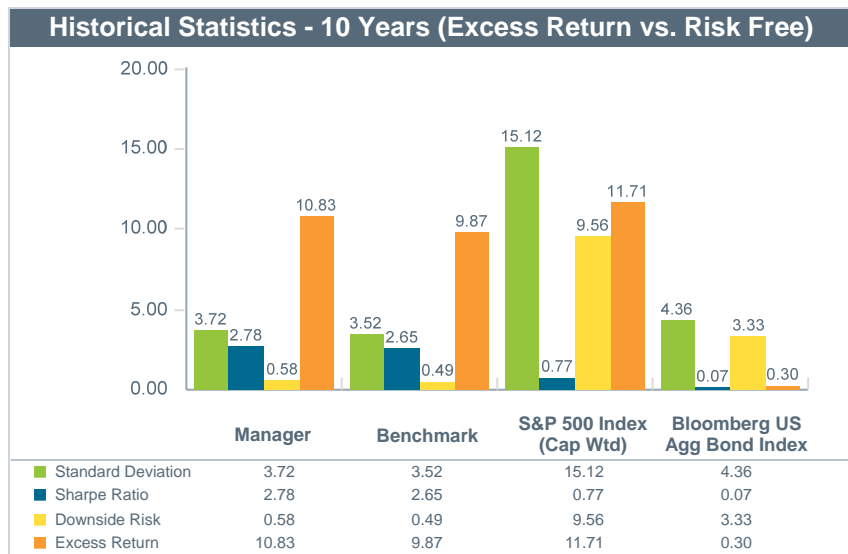
	Actual Correlation
MLP Custom Index	1.00
S&P 500 Index (Cap Wtd)	0.19
Russell 2000 Index	0.24
MSCI EAFE Index (USD) (Net)	0.27
MSCI Emg Mkts Index (USD) (Net)	0.19
Bloomberg US Agg Bond Index	-0.42
Bloomberg US Trsy US TIPS Index	0.12
NCREIF ODCE Index (AWA) (Gross)	0.27
Wilshire US REIT Index	0.17
HFRI FOF Comp Index	0.00
Bloomberg Cmtty Index (TR)	0.94
ICE BofAML 3 Mo US T-Bill Index	-0.12
Cons Price Index (Unadjusted)	0.17
MLP Custom Index	1.00

#### Relative Performance - 1 Year



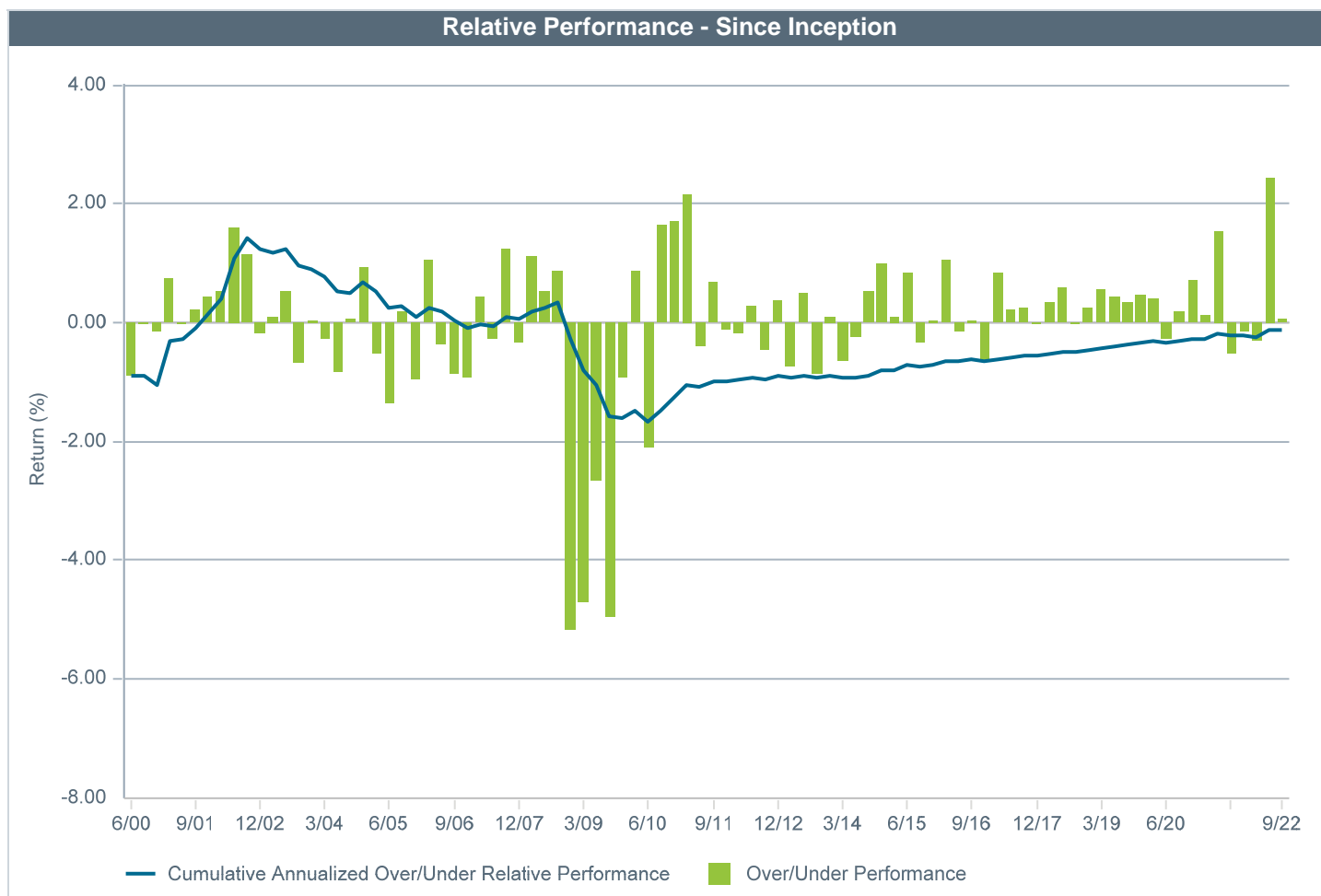
Performance shown is gross of fees and client specific. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	0.60	24.60	14.13	11.85	11.24	11.95	23.38	2.24	7.26	9.66	8.99
Benchmark	0.52	22.09	12.37	10.24	9.85	10.92	22.17	1.19	5.34	8.35	7.62
Difference	0.08	2.51	1.76	1.61	1.39	1.03	1.21	1.05	1.92	1.31	1.37



**Actual Correlation - 10 Years**

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.94
S&P 500 Index (Cap Wtd)	-0.26
Russell 2000 Index	-0.33
MSCI EAFE Index (USD) (Net)	-0.27
MSCI Emg Mkts Index (USD) (Net)	-0.33
Bloomberg US Agg Bond Index	-0.39
Bloomberg US Trsy US TIPS Index	-0.30
Wilshire US REIT Index	-0.02
HFRI FOF Comp Index	-0.32
Bloomberg Cmtty Index (TR)	0.08
ICE BofAML 3 Mo US T-Bill Index	-0.37
Cons Price Index (Unadjusted)	0.47



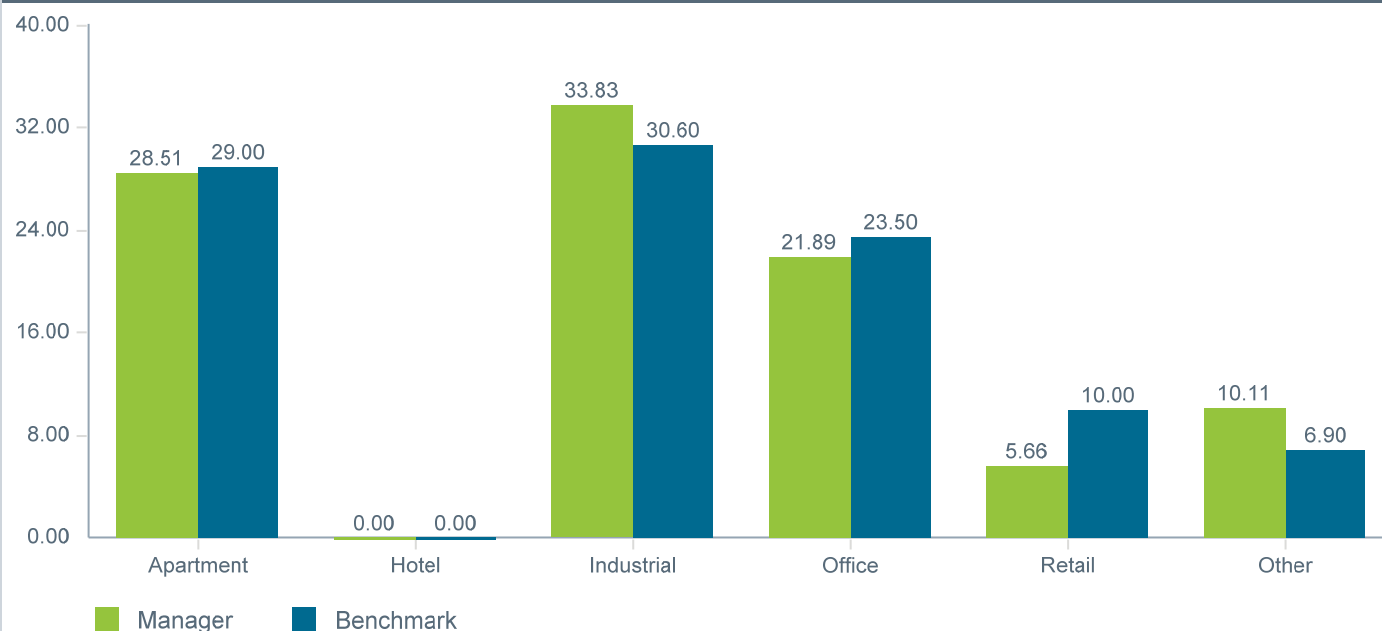
### Investment Strategy

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.

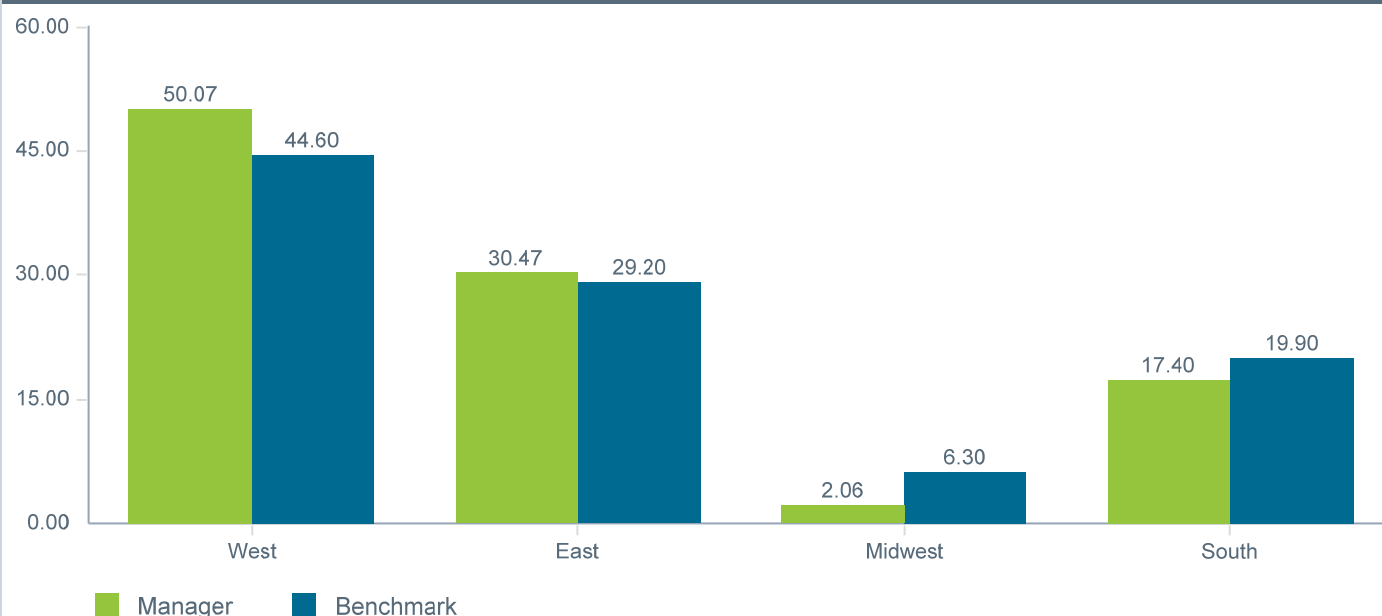
### Investment Profile

Fund Inception	2000
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M) (\$000)	24
Fund Leverage %	20.48
Portfolio Occupancy %	92.90
Cash Reserve %	1.40
Number of Investments	183
Number of Limited Partners	559

### Property Type Allocation (%)



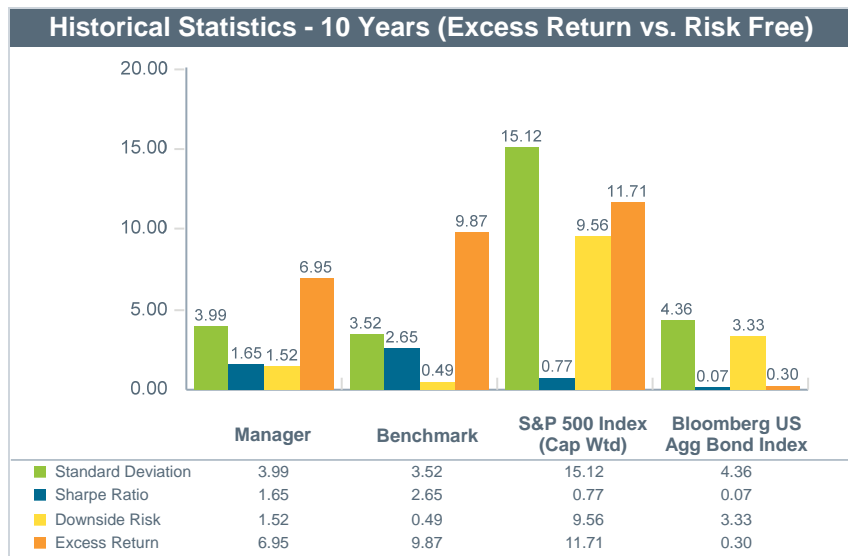
### Geographic Allocation (%)



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 land. 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.

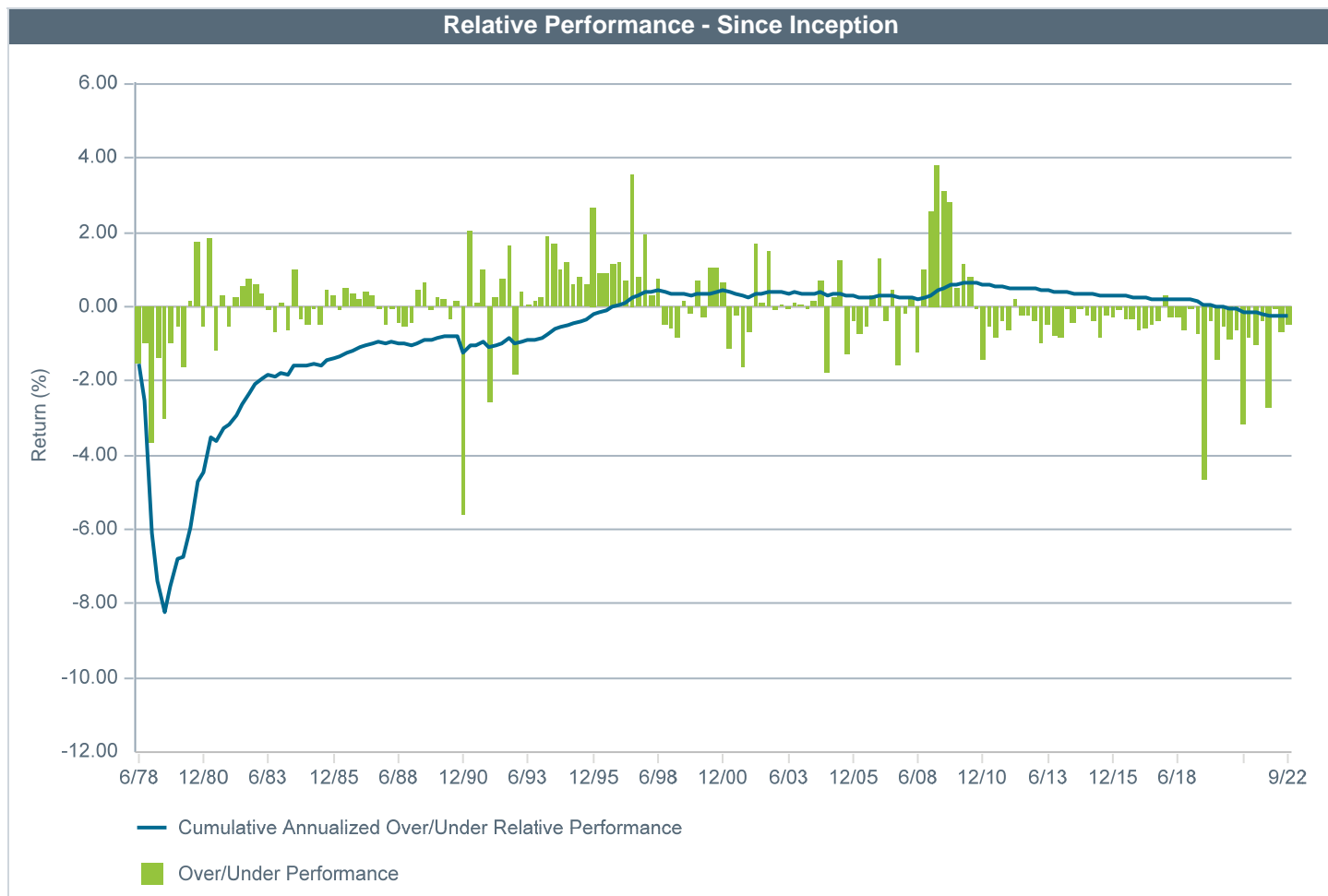


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	0.02	17.37	7.64	5.97	6.29	7.77	16.24	-4.04	-2.10	6.99	6.30
Benchmark	0.52	22.09	12.37	10.24	9.85	10.92	22.17	1.19	5.34	8.35	7.62
Difference	-0.50	-4.72	-4.73	-4.27	-3.56	-3.15	-5.93	-5.23	-7.44	-1.36	-1.32



**Actual Correlation - 10 Years**

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.89
S&P 500 Index (Cap Wtd)	-0.30
Russell 2000 Index	-0.39
MSCI EAFE Index (USD) (Net)	-0.33
MSCI Emg Mkts Index (USD) (Net)	-0.42
Bloomberg US Agg Bond Index	-0.41
Bloomberg US Trsy US TIPS Index	-0.33
Wilshire US REIT Index	-0.05
HFRI FOF Comp Index	-0.40
Bloomberg Cmdb Index (TR)	0.07
ICE BofAML 3 Mo US T-Bill Index	-0.46
Cons Price Index (Unadjusted)	0.32



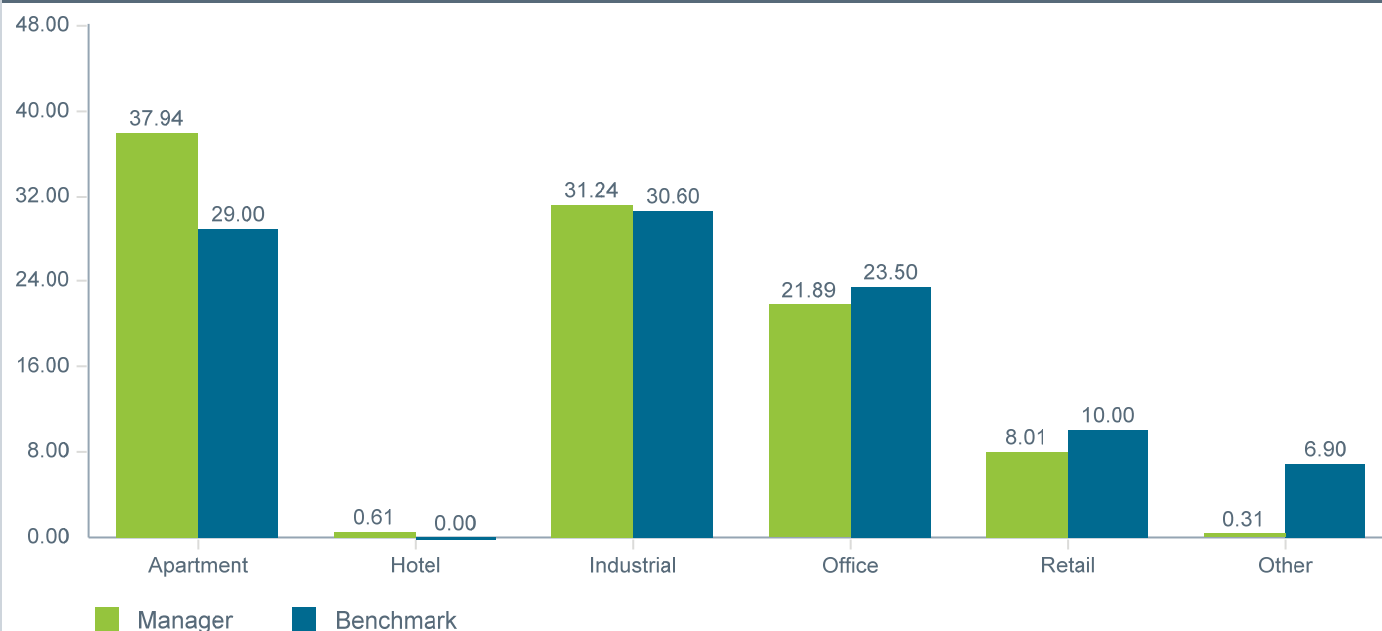
### Investment Strategy

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.

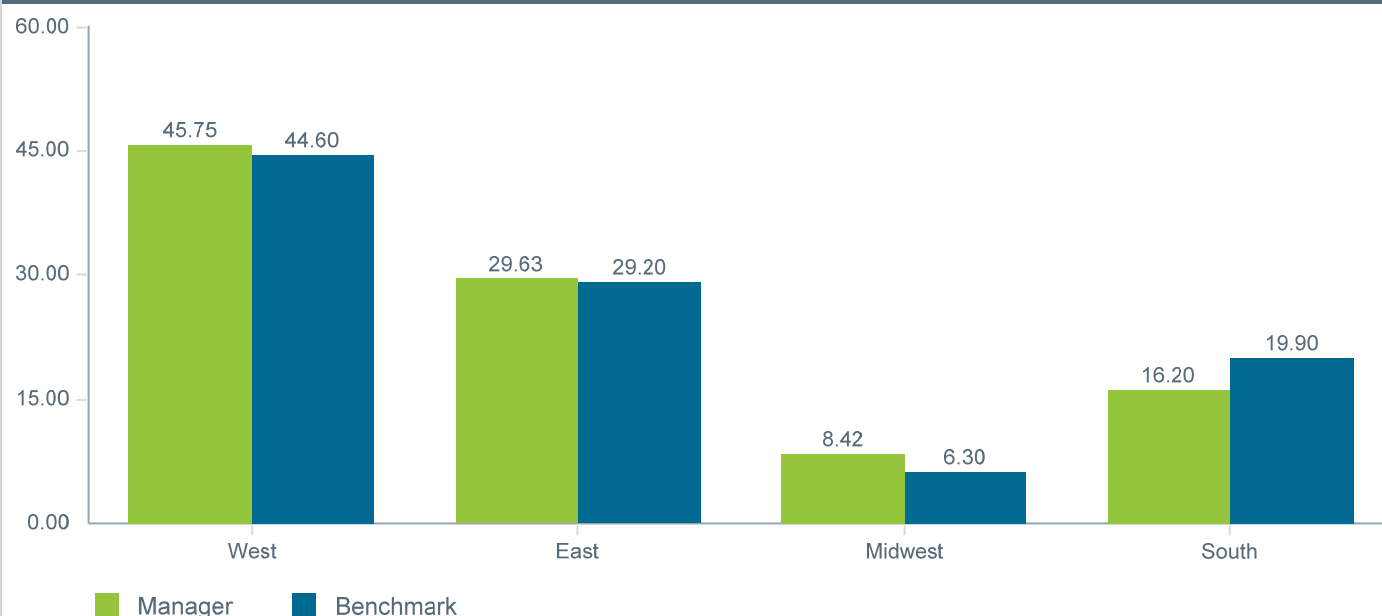
### Investment Profile

Fund Inception	1978
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M) (\$000)	18
Fund Leverage %	18.60
Portfolio Occupancy %	92.30
Cash Reserve %	2.60
Number of Investments	155
Number of Limited Partners	439

### Property Type Allocation (%)

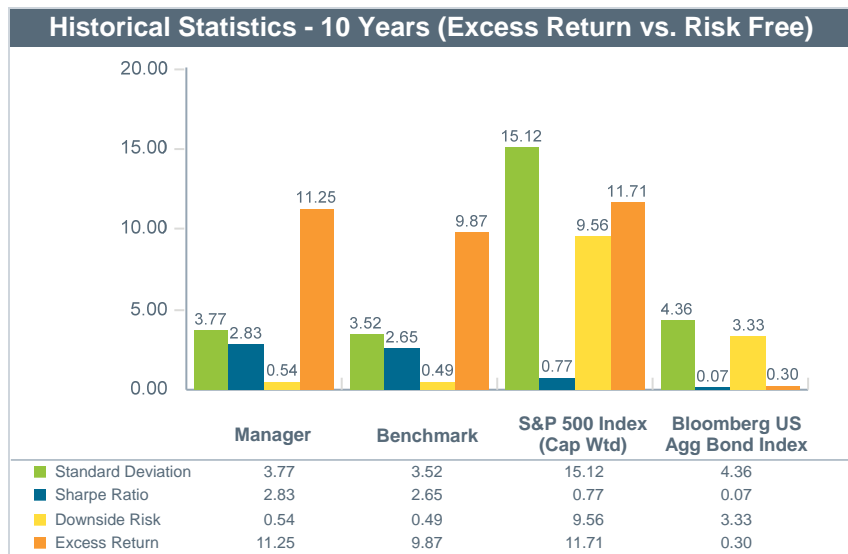


### Geographic Allocation (%)



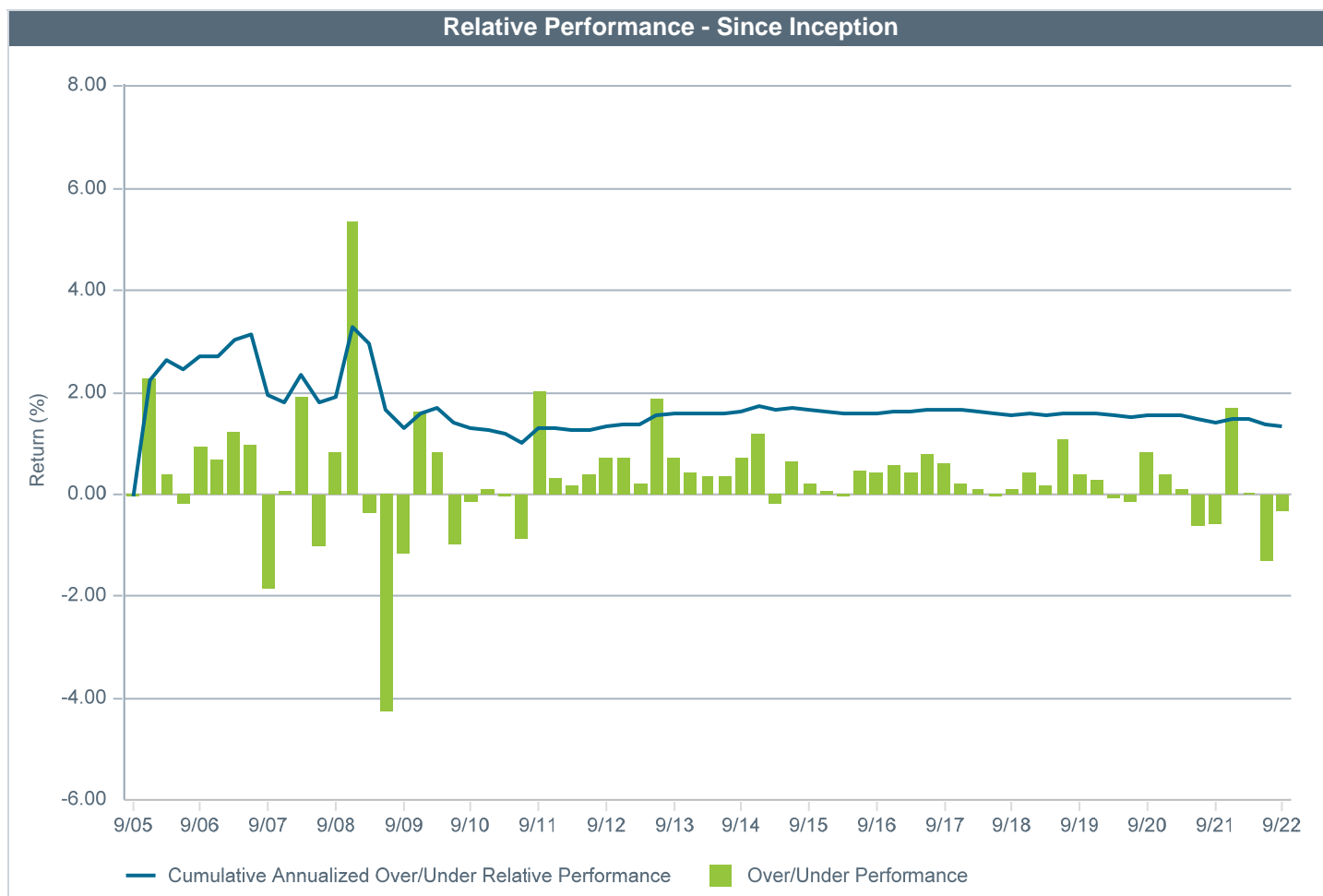
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists 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	0.20	22.18	12.46	10.84	10.80	12.40	22.87	2.18	7.40	8.99	9.84
Benchmark	0.52	22.09	12.37	10.24	9.85	10.92	22.17	1.19	5.34	8.35	7.62
Difference	-0.32	0.09	0.09	0.60	0.95	1.48	0.70	0.99	2.06	0.64	2.22



**Actual Correlation - 10 Years**

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.95
S&P 500 Index (Cap Wtd)	-0.08
Russell 2000 Index	-0.20
MSCI EAFE Index (USD) (Net)	-0.12
MSCI Emg Mkts Index (USD) (Net)	-0.28
Bloomberg US Agg Bond Index	-0.32
Bloomberg US Trsy US TIPS Index	-0.24
Wilshire US REIT Index	0.12
HFRI FOF Comp Index	-0.22
Bloomberg Cmdty Index (TR)	0.08
ICE BofA 3 Mo US T-Bill Index	-0.44
Cons Price Index (Unadjusted)	0.27



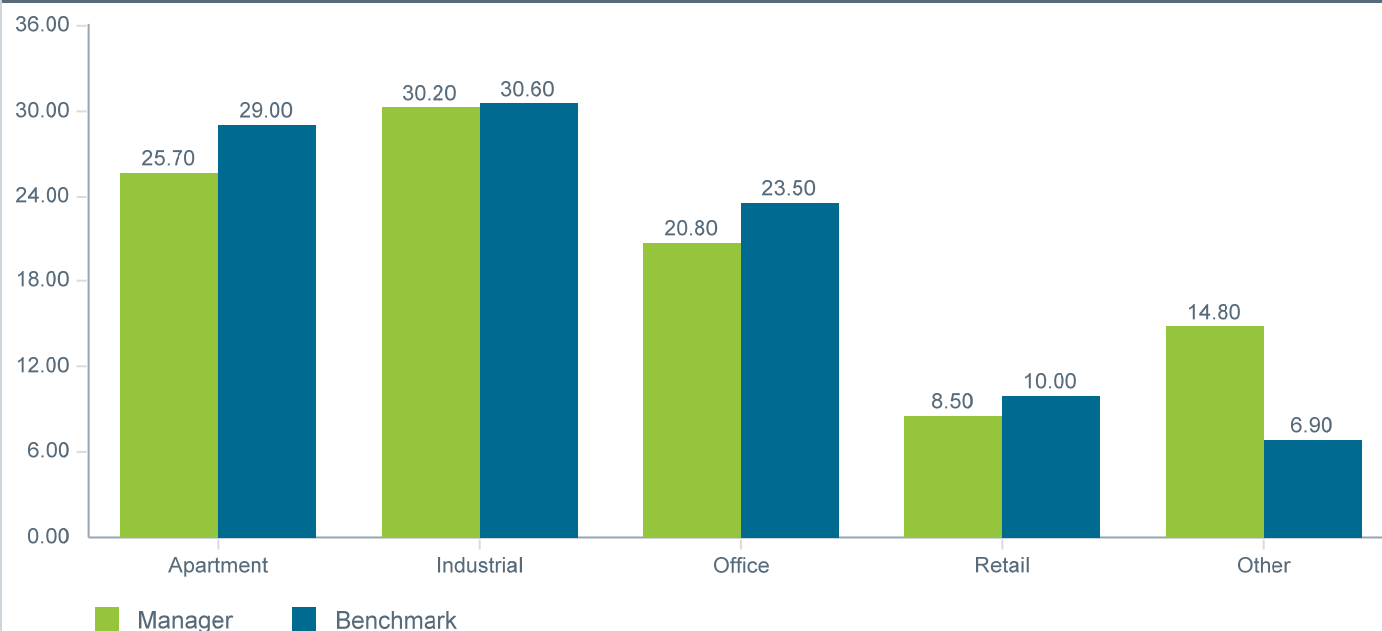
### Investment Strategy

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.

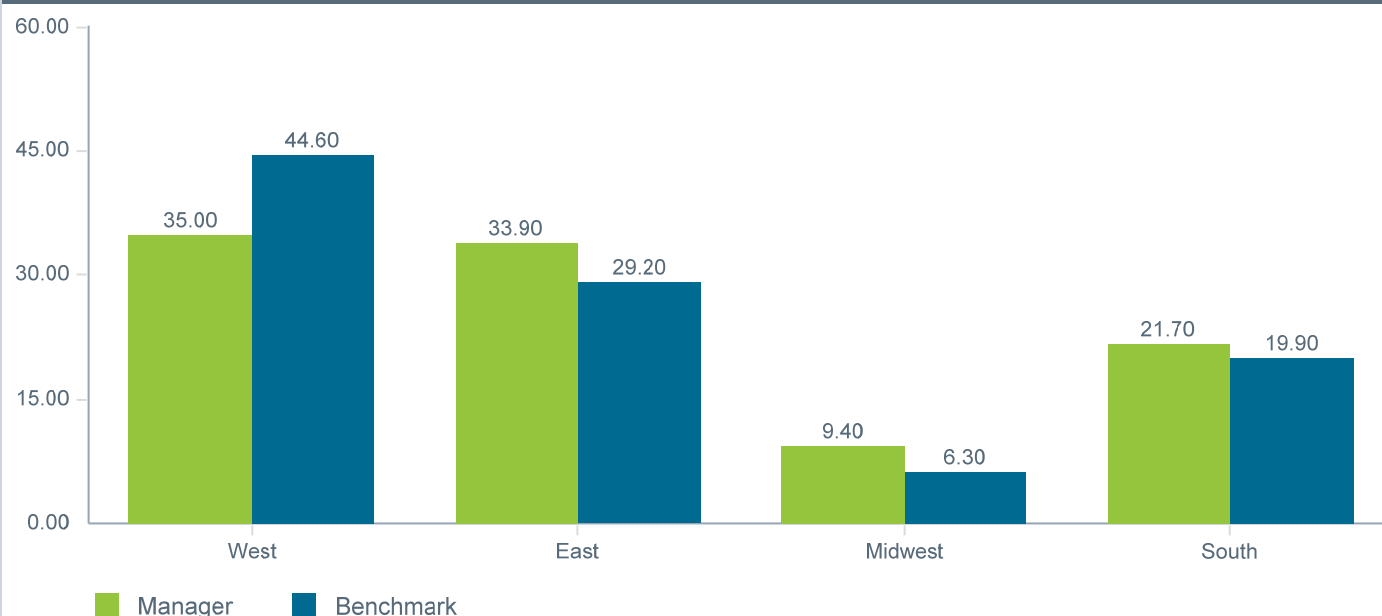
### Investment Profile

Fund Inception	1973
Legal Structure	LLC
Fund Structure	Open-End
Gross Real Estate Assets (\$M) (\$000)	45
Fund Leverage %	18.00
Portfolio Occupancy %	95.00
Cash Reserve %	2.80
Number of Investments	536
Number of Limited Partners	432

### 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**

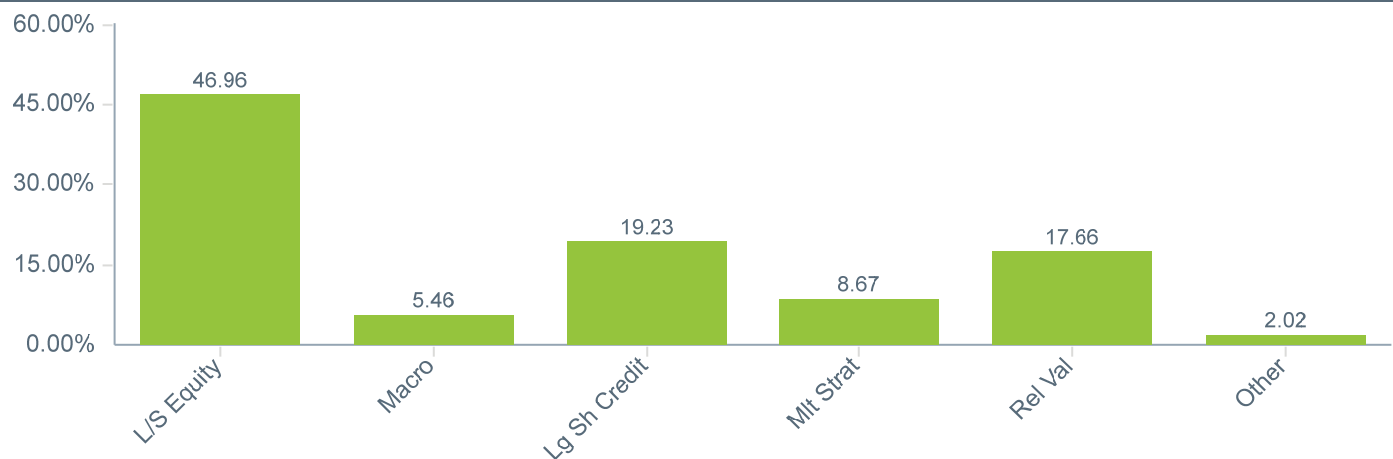
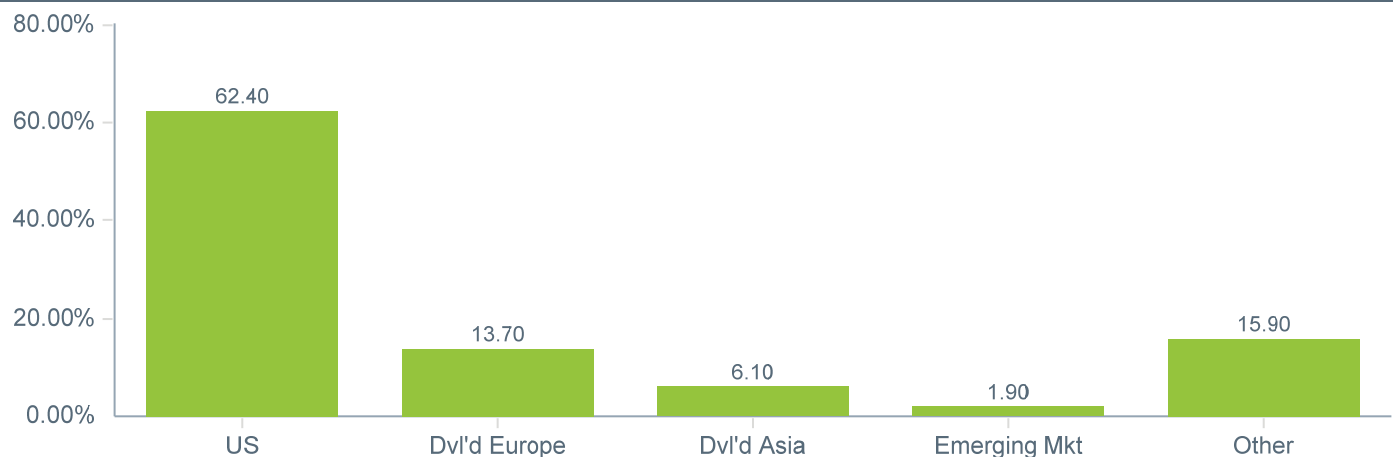
The Fund's investment objectives are to generate superior absolute and risk adjusted rates of return with low performance volatility and low correlation with the global equity and fixed-income markets over a full market cycle. The Fund is also designed to preserve capital in challenging market environments.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

**Firm Statistics**

Year Firm Established	1971
Firm AUM (\$M)	24,661
Percentage Employee Owned %	78.00

**Fund Statistics**

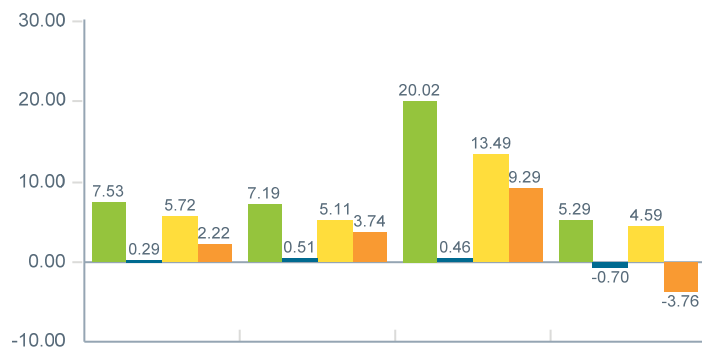
Fund Inception	2018
Fund Size(\$M)	440
Number of Underlying Managers	25
Maximum Weighting of an Underlying Manager %	10.00
Current Leverage (Assets/Equity)	2.90
Annual Manager Turnover %	40.00
Annual Management Fee %	0.60
Performance Fee %	5
Hurdle %	T-bills+2%
Initial Lock-Up Periods	N/A
Redemption 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	0.45	-8.13	2.56	N/A	N/A	N/A	5.25	9.70	5.67	N/A	N/A
Benchmark	-0.35	-6.52	4.15	3.08	3.17	3.46	6.17	10.88	8.39	-4.02	7.77
Difference	0.80	-1.61	-1.59	N/A	N/A	N/A	-0.92	-1.18	-2.72	N/A	N/A

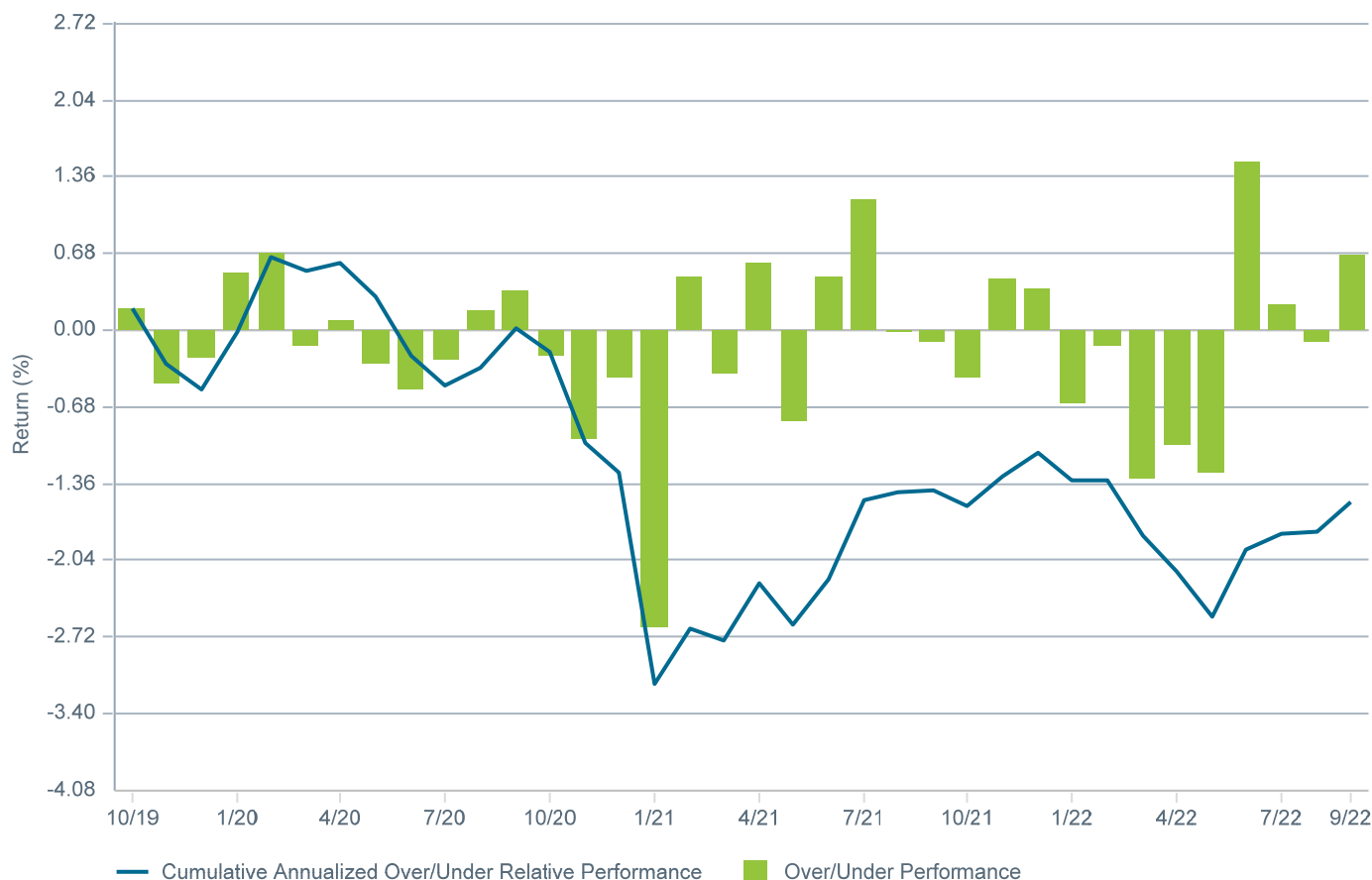
#### Historical Statistics - 3 Years (Excess Return vs. Risk Free)



#### Actual Correlation - 3 Years

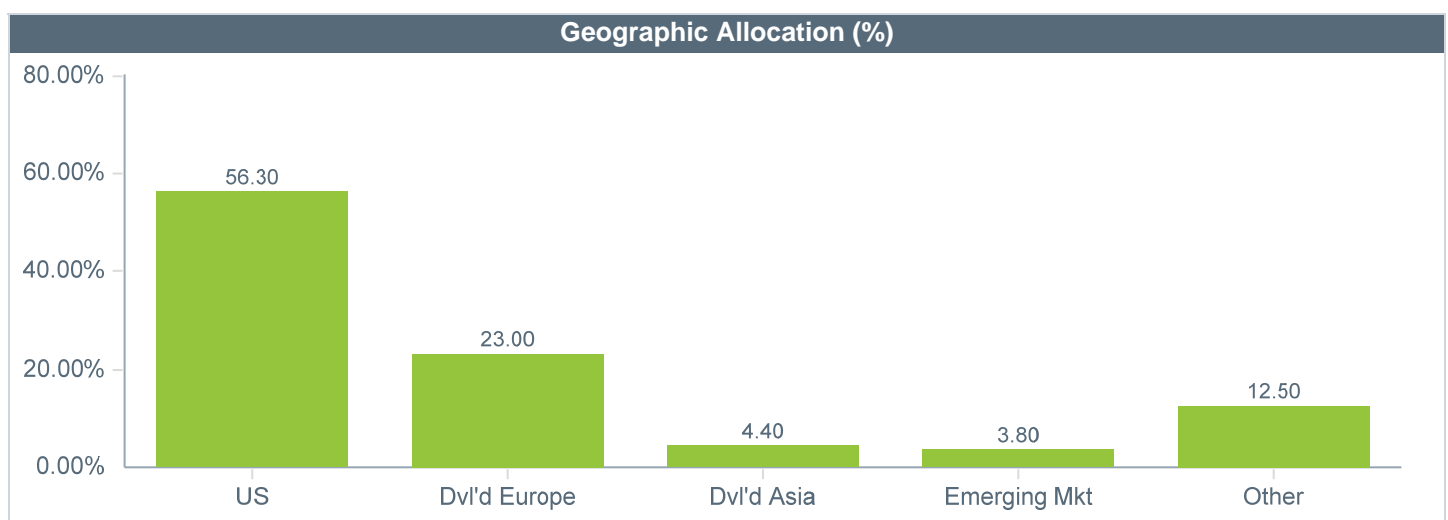
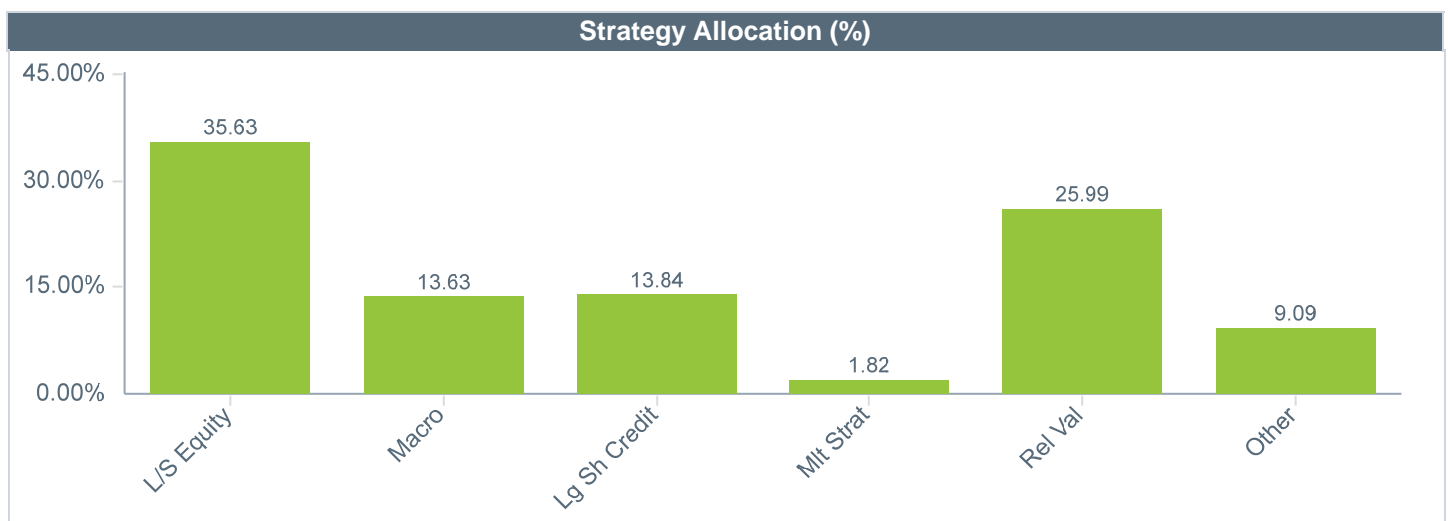
	Actual Correlation
HFRI FOF Comp Index	0.97
S&P 500 Index (Cap Wtd)	0.90
Russell 2000 Index	0.89
MSCI EAFE Index (USD) (Net)	0.92
MSCI Emg Mkts Index (USD) (Net)	0.89
Bloomberg US Agg Bond Index	0.42
Bloomberg US Trsy US TIPS Index	0.57
NCREIF ODCE Index (AWA) (Gross)	-0.38
Wilshire US REIT Index	0.75
Bloomberg Cmnty Index (TR)	0.42
ICE BofAML 3 Mo US T-Bill Index	-0.42
Cons Price Index (Unadjusted)	-0.49

#### Relative Performance - 3 Years



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

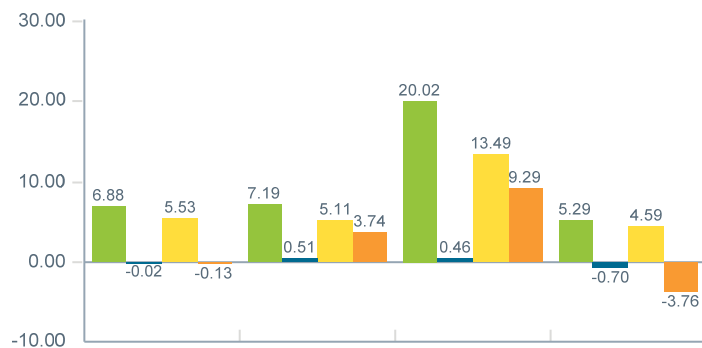
Investment Strategy	Firm Statistics
Silvery Lupine Fund Class C is a direct hedge funds portfolio managed by the Wyoming State Treasurer's Office.	Year Firm Established
	1971
	Firm AUM (\$M)
	24,661
	Percentage Employee Owned %
	78.00
Fund Statistics	
Fund Inception	2018
Fund Size(\$M)	661
Number of Underlying Managers	18
Maximum Weighting of an Underlying Manager %	N/A
Current Leverage (Assets/Equity)	5.10
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	-0.16	-9.83	0.22	N/A	N/A	N/A	5.05	5.83	6.08	N/A	N/A
Benchmark	-0.35	-6.52	4.15	3.08	3.17	3.46	6.17	10.88	8.39	-4.02	7.77
Difference	0.19	-3.31	-3.93	N/A	N/A	N/A	-1.12	-5.05	-2.31	N/A	N/A

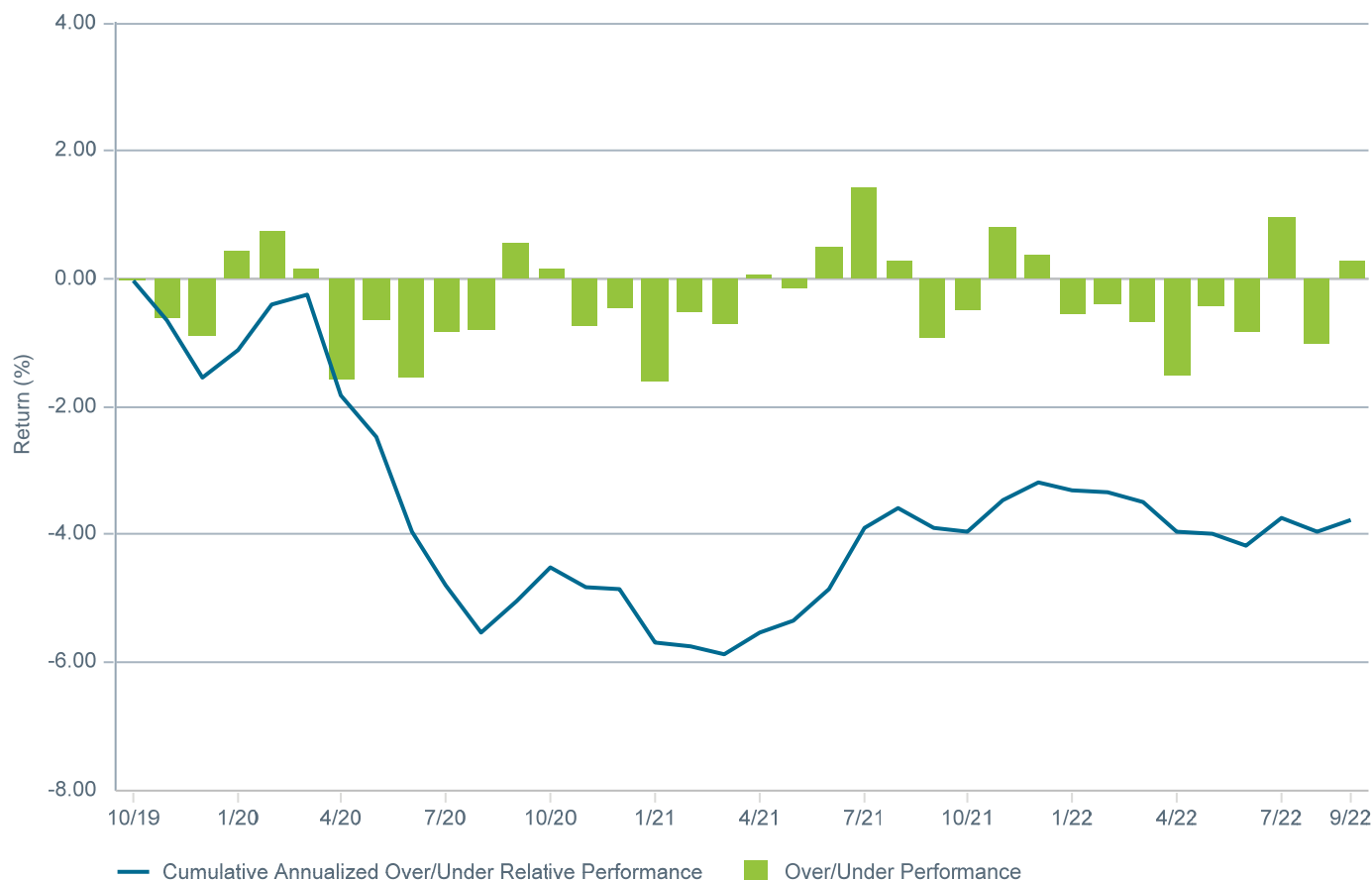
#### Historical Statistics - 3 Years (Excess Return vs. Risk Free)



#### 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)	0.92
MSCI Emg Mkts Index (USD) (Net)	0.85
Bloomberg US Agg Bond Index	0.41
Bloomberg US Trsy US TIPS Index	0.59
NCREIF ODCE Index (AWA) (Gross)	-0.27
Wilshire US REIT Index	0.81
Bloomberg Cmnty Index (TR)	0.47
ICE BofAML 3 Mo US T-Bill Index	-0.43
Cons Price Index (Unadjusted)	-0.45

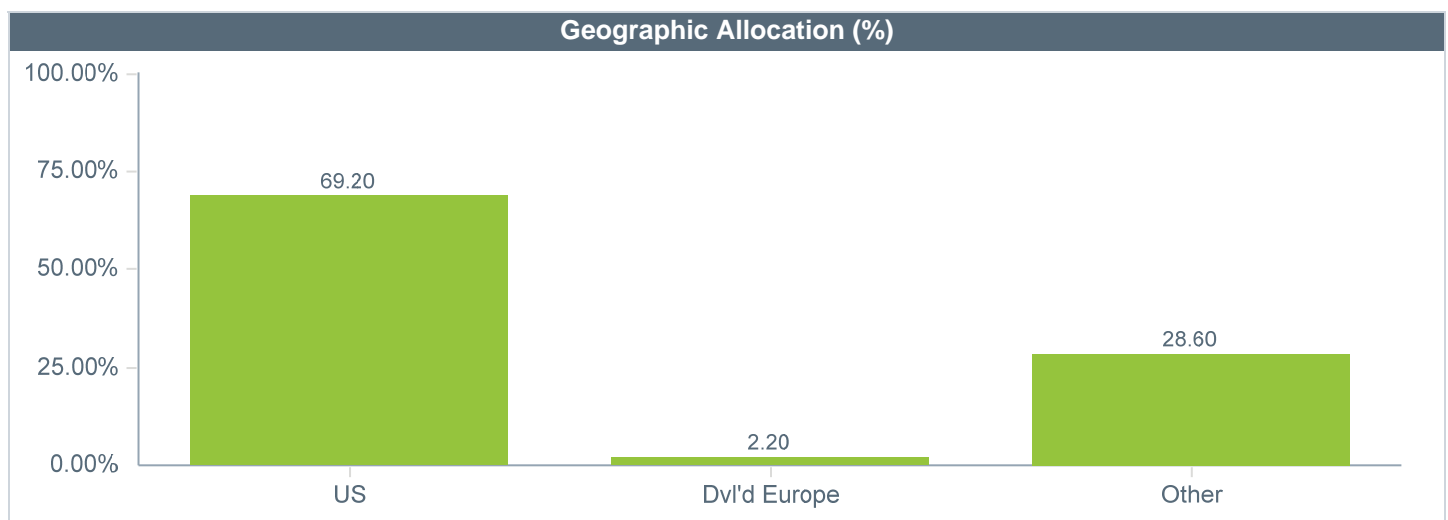
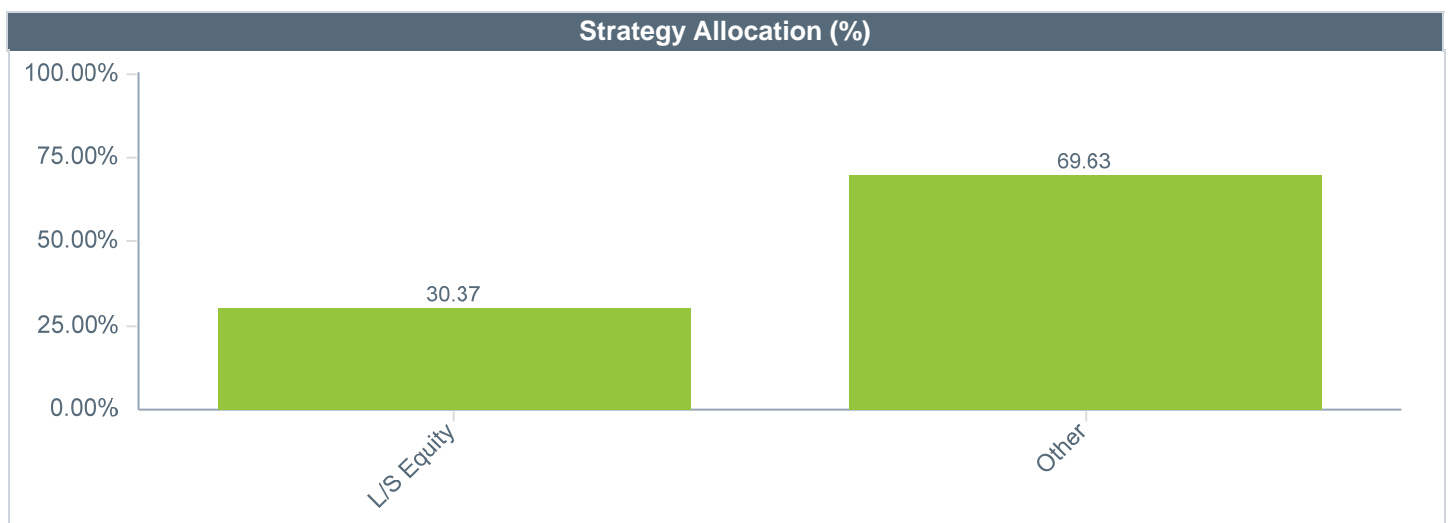
#### Relative Performance - 3 Years



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

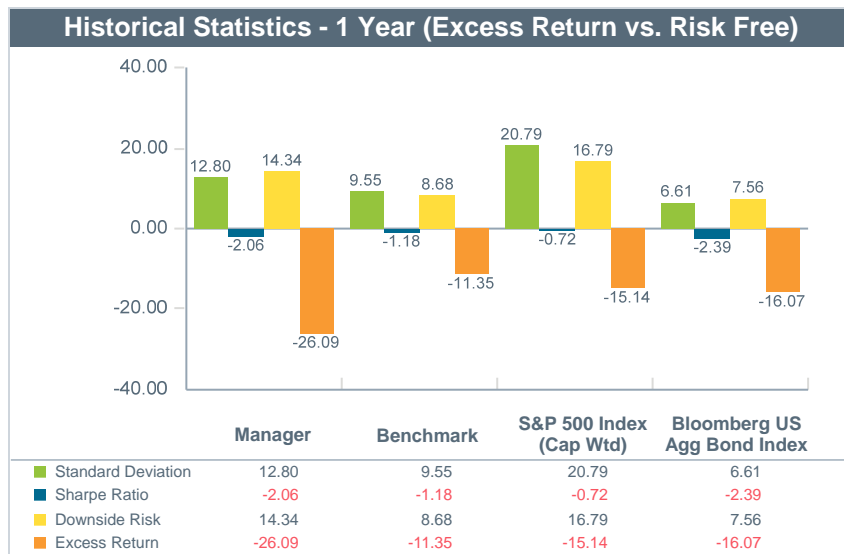


Investment Strategy	Firm Statistics	
Grosvenor Silvery Lupine Fund Class D is the opportunistic investment portfolio of the State Treasurer's Office.	Year Firm Established	1971
	Firm AUM (\$M)	24,661
	Percentage Employee Owned %	78.00
	Fund Statistics	
	Fund Inception	2020
	Fund Size(\$M)	103
	Number of Underlying Managers	N/A
	Maximum Weighting of an Underlying Manager %	N/A
	Current Leverage (Assets/Equity)	0.90
	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	



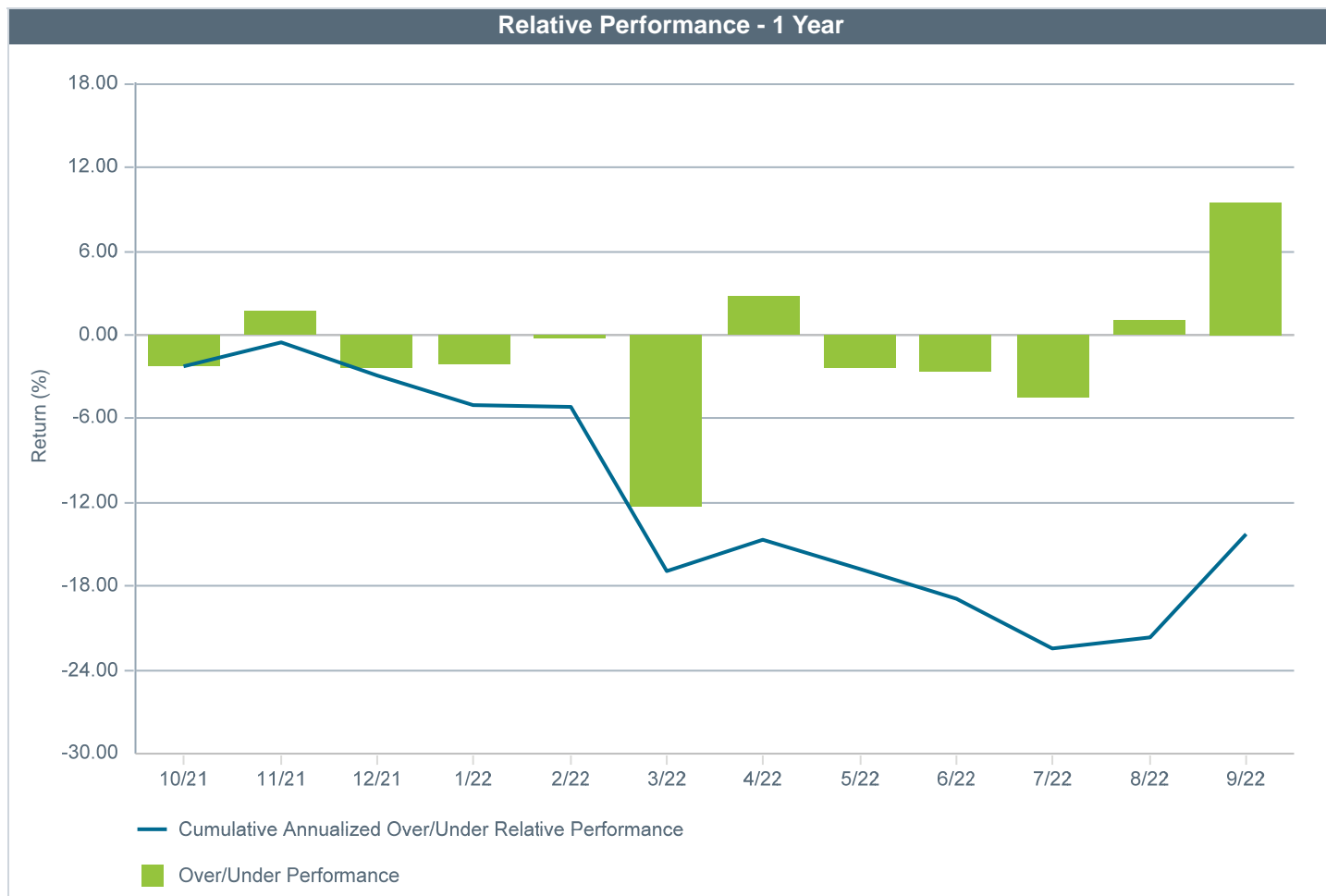
Strategy allocation to other consists of cash, expenses, fees, SPV, and net receivable. Geographic allocation to other consists of cash or funds where geographic data are unavailable. Fund statistics shown are provided by GCM and are as of the most recently available quarter end.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	2.28	-23.38	N/A	N/A	N/A	N/A	30.17	N/A	N/A	N/A	N/A
Benchmark	-3.30	-10.64	N/A	N/A	N/A	N/A	9.35	N/A	N/A	N/A	N/A
Difference	5.58	-12.74	N/A	N/A	N/A	N/A	20.82	N/A	N/A	N/A	N/A



**Actual Correlation - 1 Year**

	Actual Correlation
Grosvenor Class D Custom Benchmark	-0.10
S&P 500 Index (Cap Wtd)	-0.08
Russell 2000 Index	0.00
MSCI EAFE Index (USD) (Net)	-0.04
MSCI Emg Mkts Index (USD) (Net)	-0.12
Bloomberg US Agg Bond Index	0.11
Bloomberg US Trsy US TIPS Index	0.04
Wilshire US REIT Index	-0.17
Bloomberg Cmtty Index (TR)	-0.31
ICE BofAML 3 Mo US T-Bill Index	0.42
Cons Price Index (Unadjusted)	-0.74



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

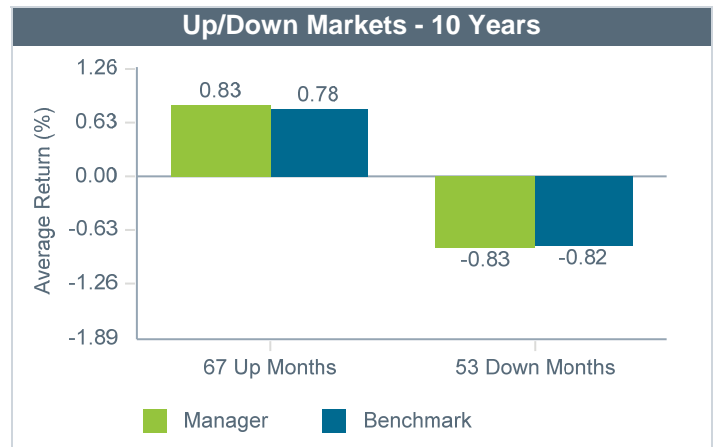
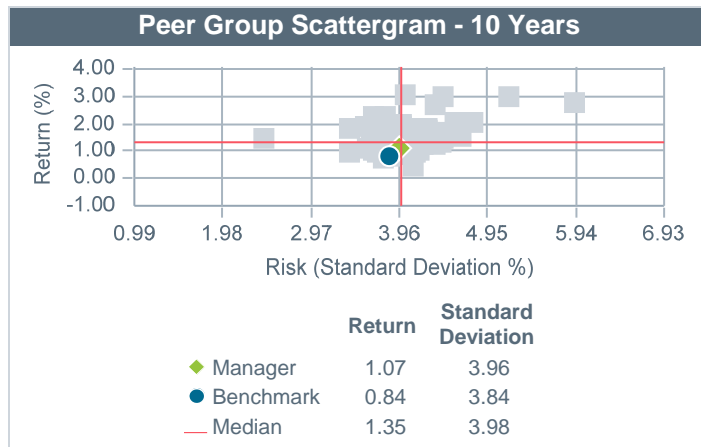
Manager: PIMCO Core

As of September 30, 2022

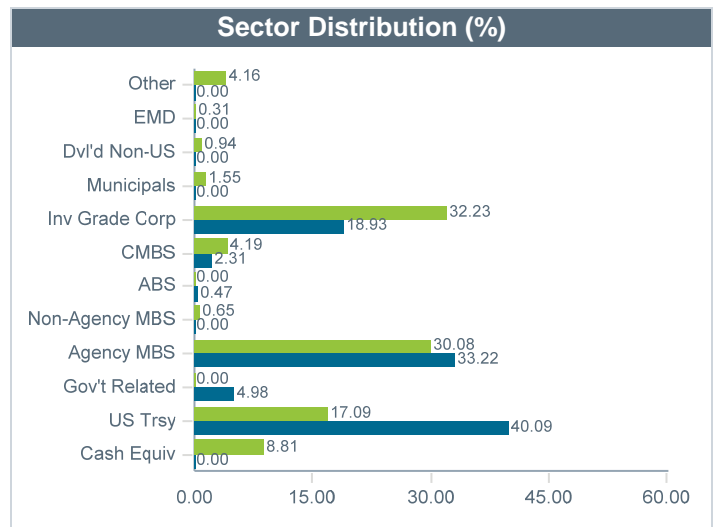
Benchmark: PIMCO Custom Index

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	-4.58	-15.27	-3.10	-0.16	0.78	1.07	-1.62	8.93	7.71	0.58	4.27
Benchmark	-4.77	-14.70	-3.10	-0.38	0.46	0.84	-1.63	8.14	7.30	0.32	3.54
Difference	0.19	-0.57	0.00	0.22	0.32	0.23	0.01	0.79	0.41	0.26	0.73
Peer Group Median	-4.55	-14.49	-2.75	0.17	1.04	1.35	-1.23	8.51	9.20	0.06	4.01
Rank	52	81	80	84	80	80	81	34	94	15	34
Population	134	134	134	131	129	124	145	153	155	162	167



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	6.19	N/A
Spread Duration	4.41	4.57
Avg. Maturity	8.26	5.56
Avg. Quality	Aa2	Aa1/Aa2
Yield To Maturity (%)	5.58	4.69
Coupon Rate (%)	2.88	2.37
Current Yield (%)	3.22	N/A
Holdings Count	244	9,367

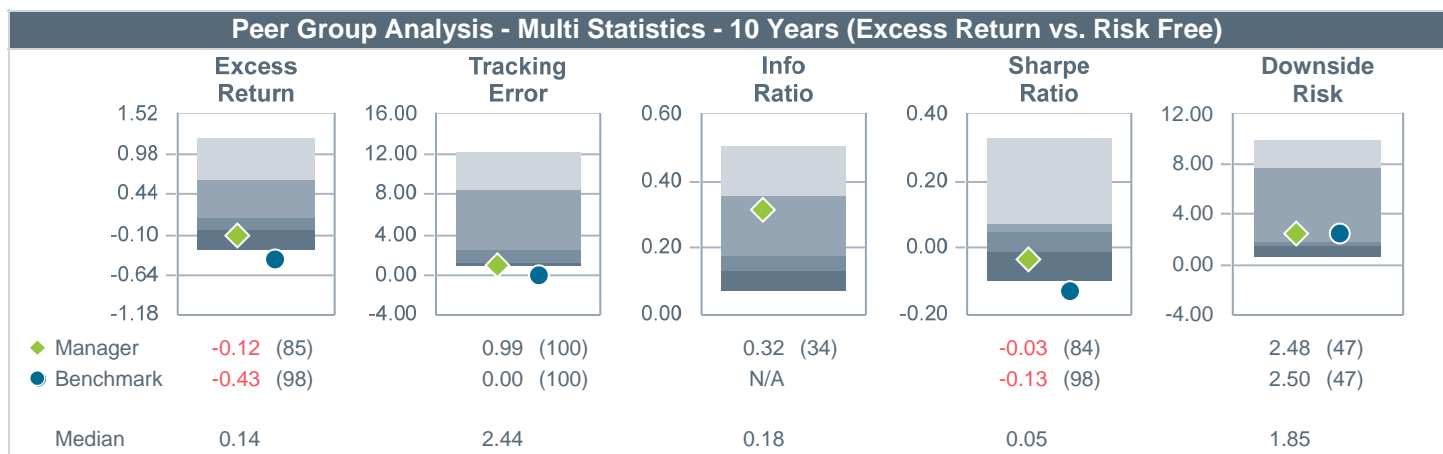
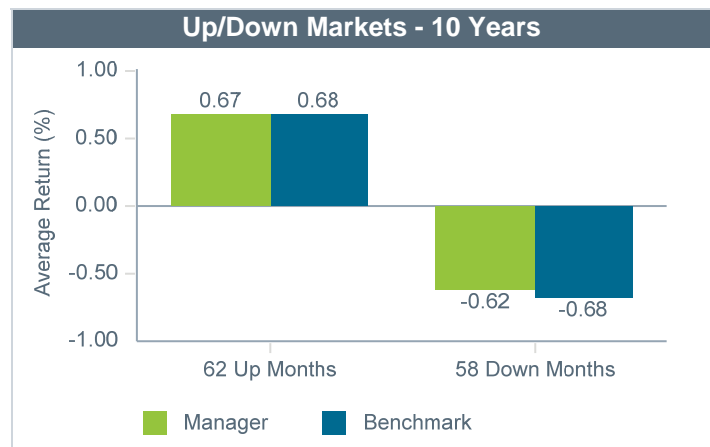
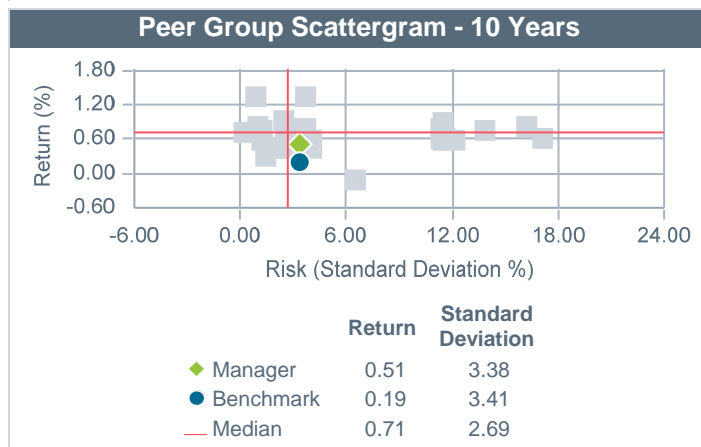


Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Sector allocation to "Other" consists of Euro/Yankee securities.

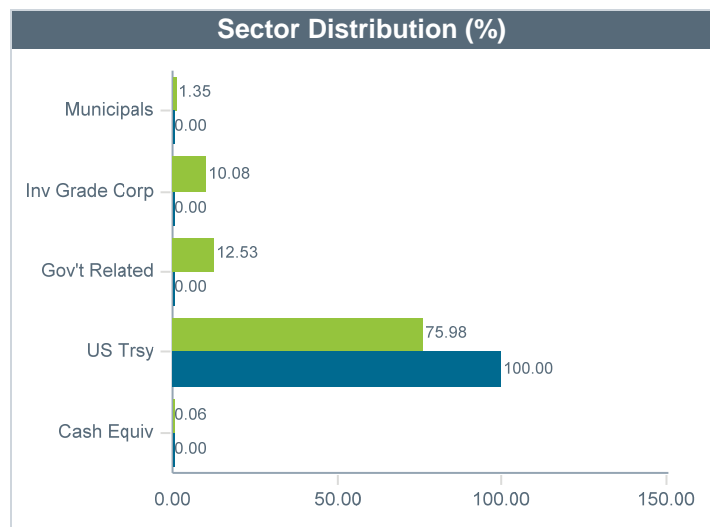
**Manager: Internal Intermediate Gov't Fixed Income Portfolio**
**As of September 30, 2022**
**Benchmark:** Internal Int Govt Fixed Income Portfolio Index

**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	-4.25	-12.32	-2.87	-0.45	0.10	0.51	-2.40	7.85	4.53	1.85	1.84
Benchmark	-4.35	-12.94	-3.00	-0.61	-0.19	0.19	-2.32	8.00	4.70	1.43	1.14
Difference	0.10	0.62	0.13	0.16	0.29	0.32	-0.08	-0.15	-0.17	0.42	0.70
Peer Group Median	-4.38	-12.44	-2.79	-0.26	0.24	0.71	-2.14	6.37	5.84	1.27	1.77
Rank	49	50	51	55	57	86	54	46	72	8	50
Population	36	36	36	36	34	31	40	46	48	54	53



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.84	6.10
Spread Duration	N/A	6.11
Avg. Maturity	7.83	7.63
Avg. Quality	Aa1	Aaa
Yield To Maturity (%)	4.21	4.13
Coupon Rate (%)	1.91	1.84
Current Yield (%)	2.22	N/A
Holdings Count	60	274



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.



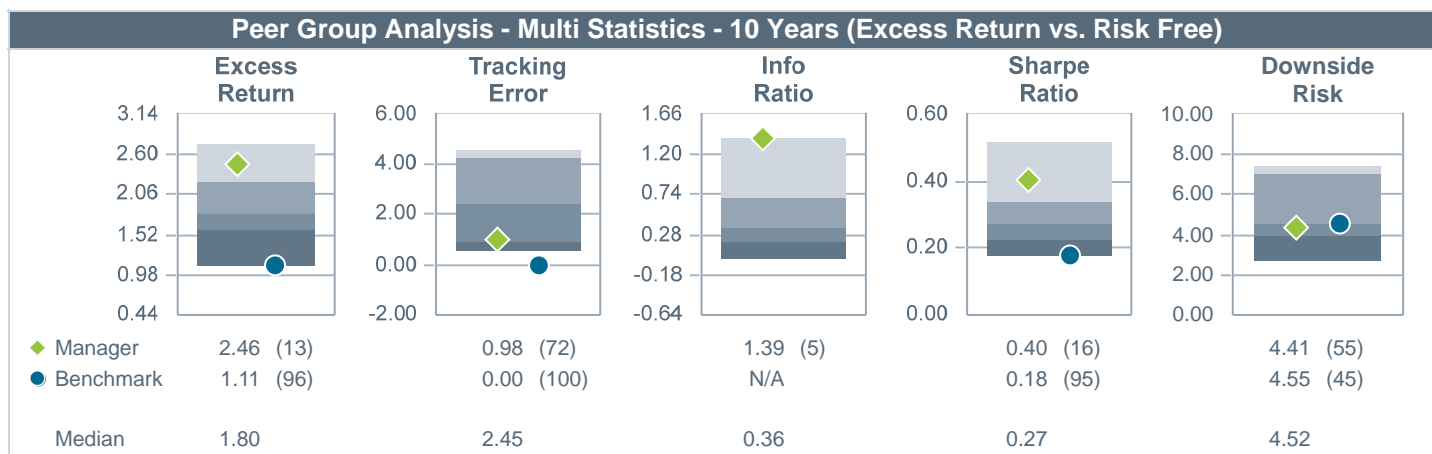
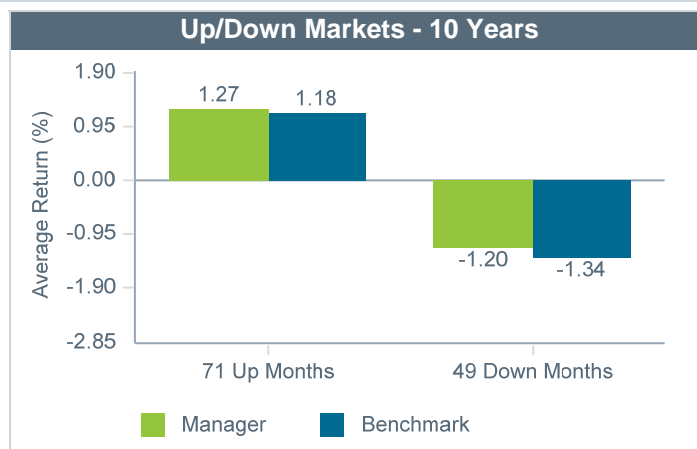
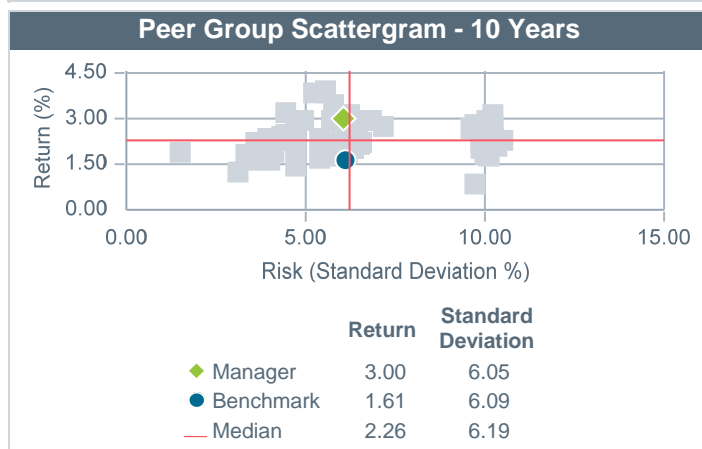
Manager: Payden & Rygel

As of September 30, 2022

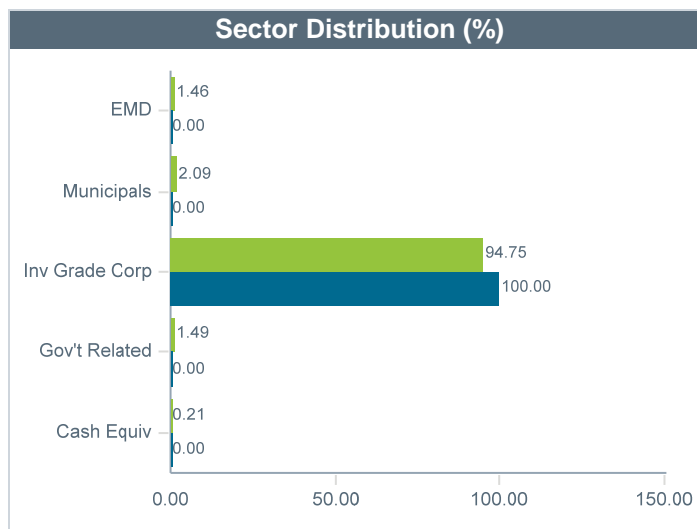
Benchmark: Payden & Rygel Custom Index

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	-5.15	-18.32	-3.45	0.30	2.34	3.00	-0.94	10.37	14.96	-2.41	9.23
Benchmark	-5.06	-18.53	-3.93	-0.20	1.35	1.61	-1.04	8.94	14.54	-2.51	6.42
Difference	-0.09	0.21	0.48	0.50	0.99	1.39	0.10	1.43	0.42	0.10	2.81
Peer Group Median	-4.89	-18.51	-3.01	0.42	2.07	2.26	-0.50	11.27	15.08	-2.37	7.22
Rank	66	45	67	59	29	8	72	66	53	52	32
Population	116	116	114	108	103	95	124	134	136	140	136



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	7.00	7.09
Spread Duration	7.21	7.24
Avg. Maturity	10.65	11.03
Avg. Quality	A3	A3/Baa1
Yield To Maturity (%)	5.69	5.69
Coupon Rate (%)	3.85	3.66
Current Yield (%)	4.22	N/A
Holdings Count	219	7,302



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

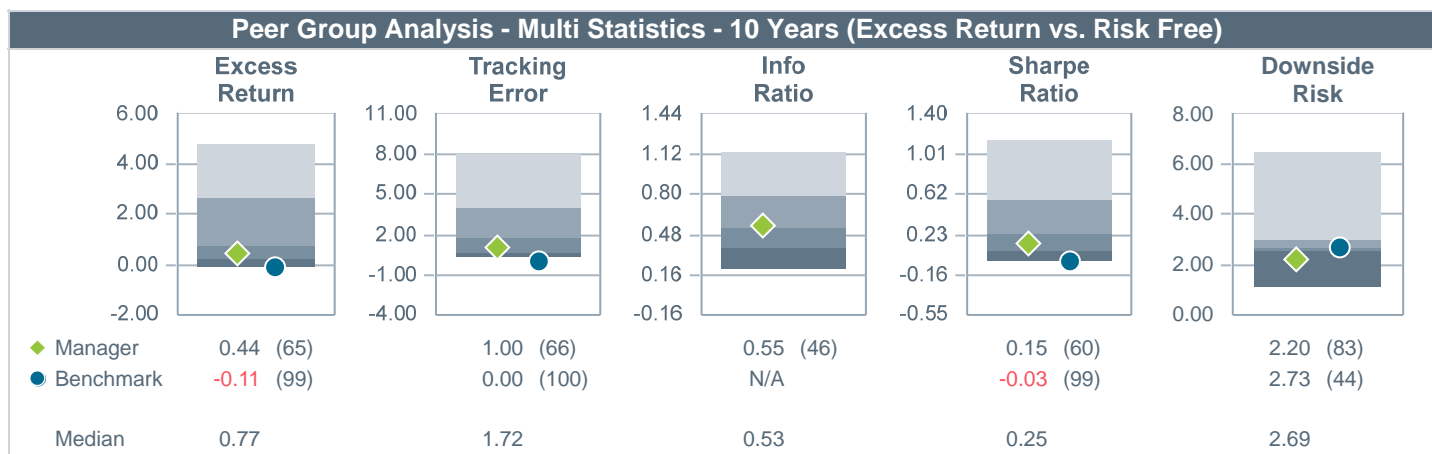
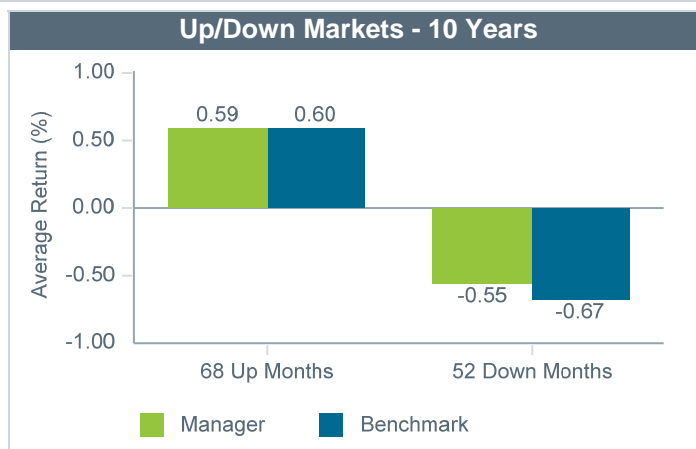
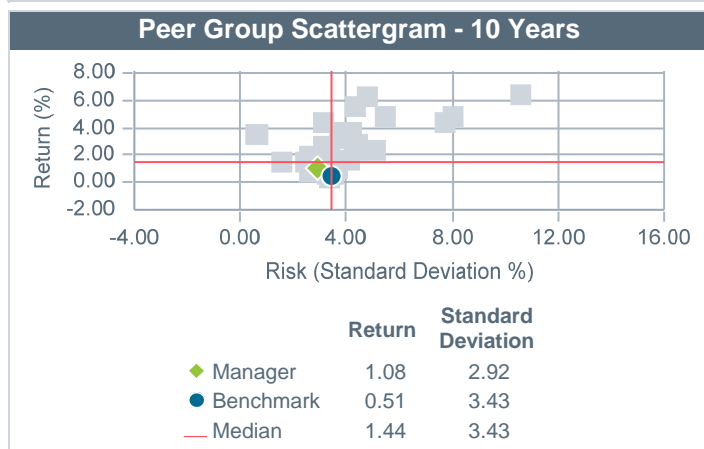
Manager: JPM MBS

As of September 30, 2022

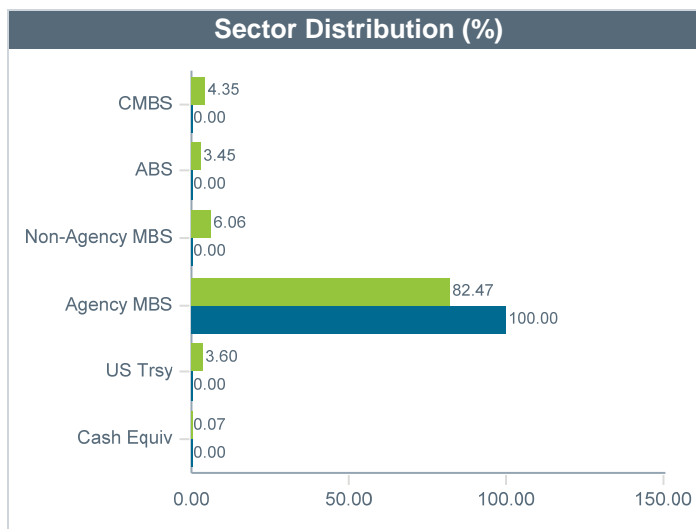
Benchmark: Bloomberg US MBS Index (Unhgd)

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	-4.72	-11.61	-2.05	0.16	0.75	1.08	-0.62	5.73	6.47	1.01	2.64
Benchmark	-5.35	-13.98	-3.67	-0.92	-0.11	0.51	-1.04	3.87	6.35	0.99	2.47
Difference	0.63	2.37	1.62	1.08	0.86	0.57	0.42	1.86	0.12	0.02	0.17
Peer Group Median	-4.49	-12.26	-2.59	0.01	0.71	1.37	-0.25	4.06	6.55	1.65	3.78
Rank	57	46	43	48	49	61	59	11	56	74	72
Population	51	51	51	48	46	44	54	57	57	58	61

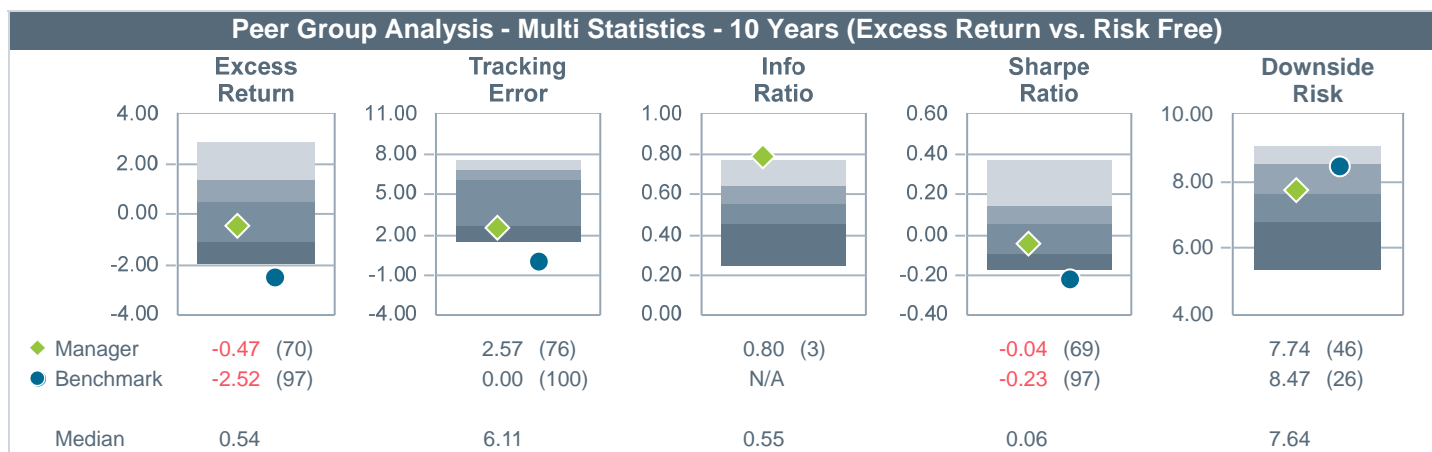
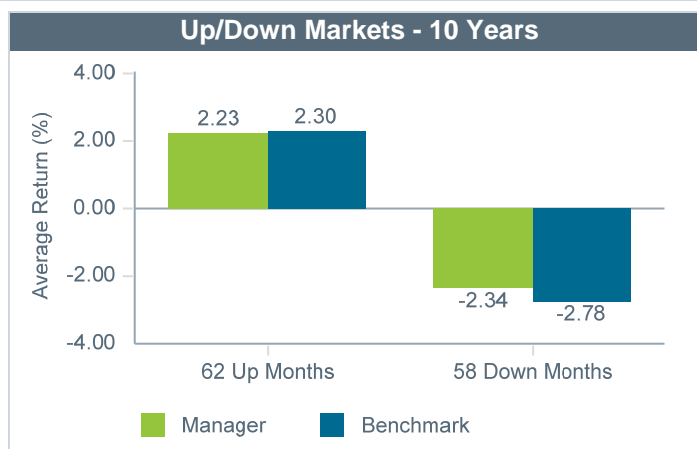
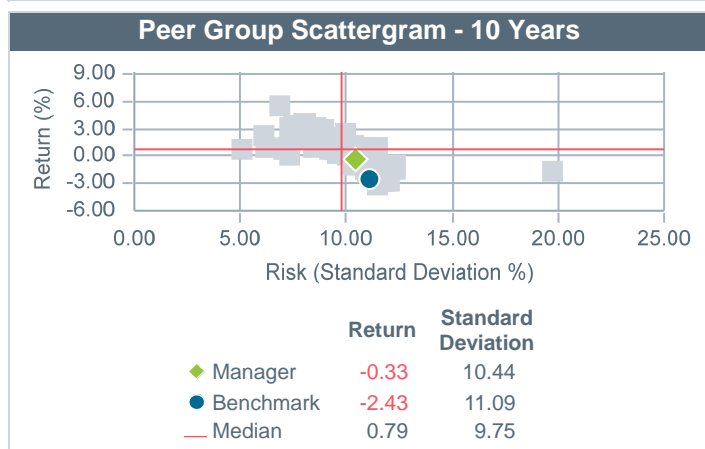


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.43	5.94
Spread Duration	5.27	5.85
Avg. Maturity	7.04	8.10
Avg. Quality	Aa2	Aaa
Yield To Maturity (%)	5.34	4.83
Coupon Rate (%)	2.99	2.69
Current Yield (%)	4.26	N/A
Holdings Count	516	430

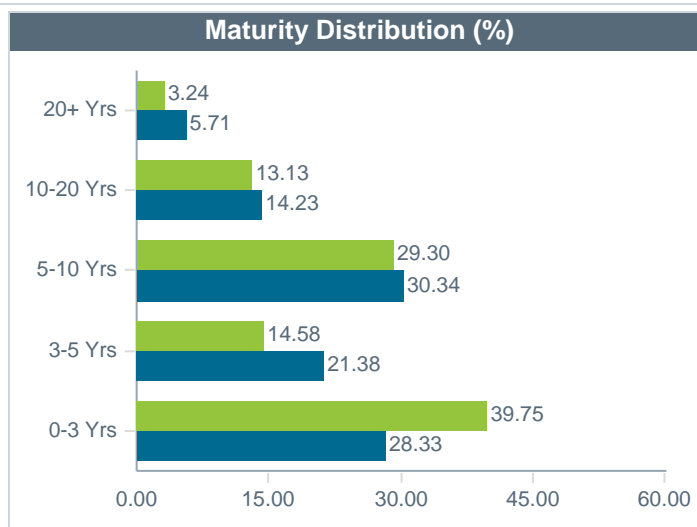


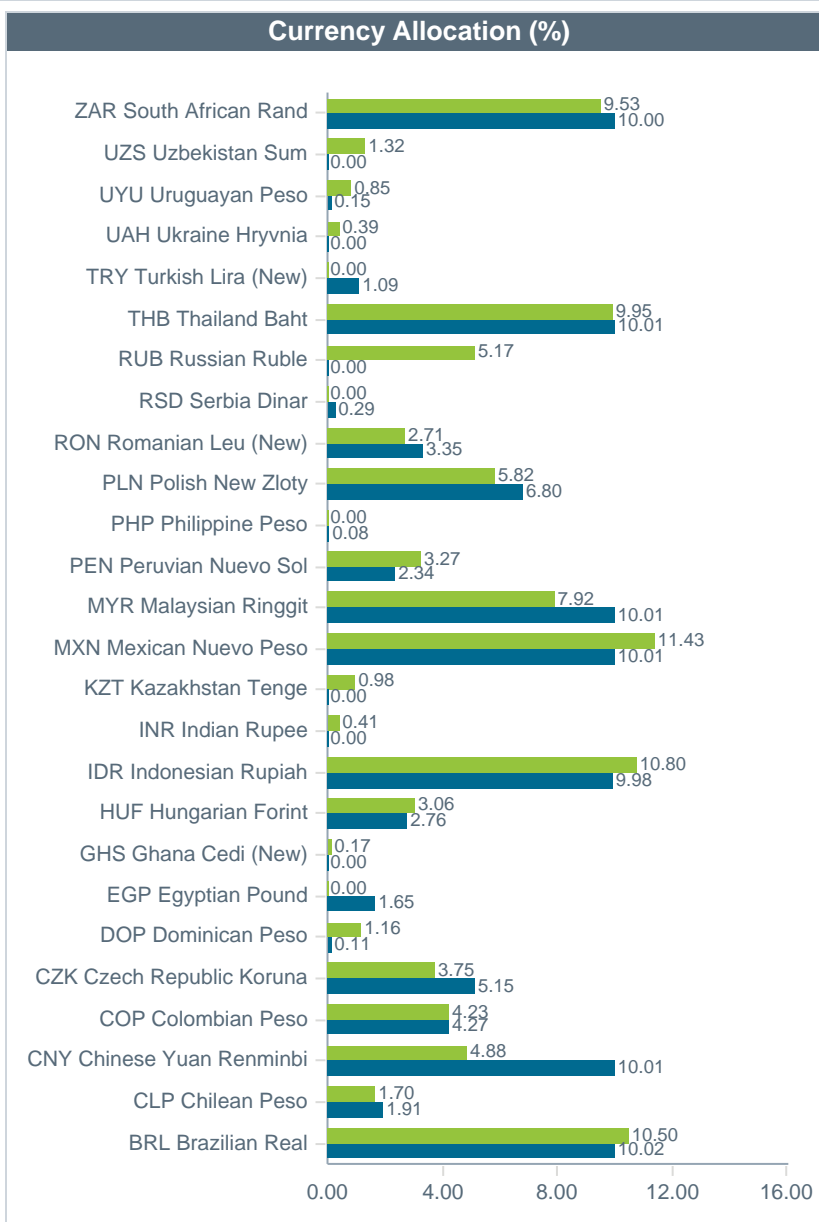
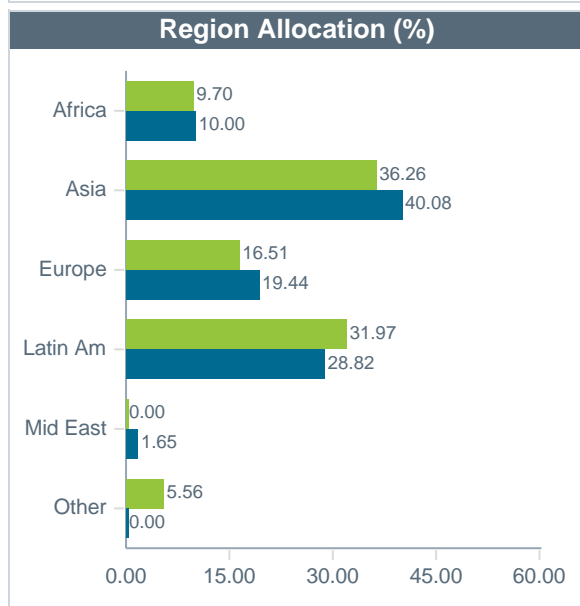
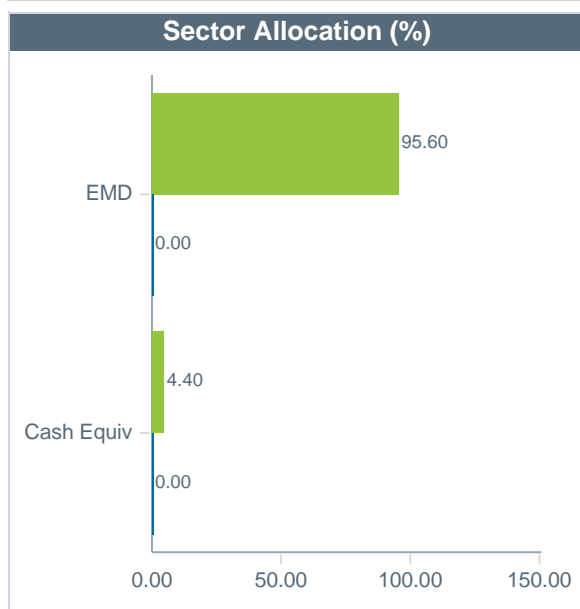
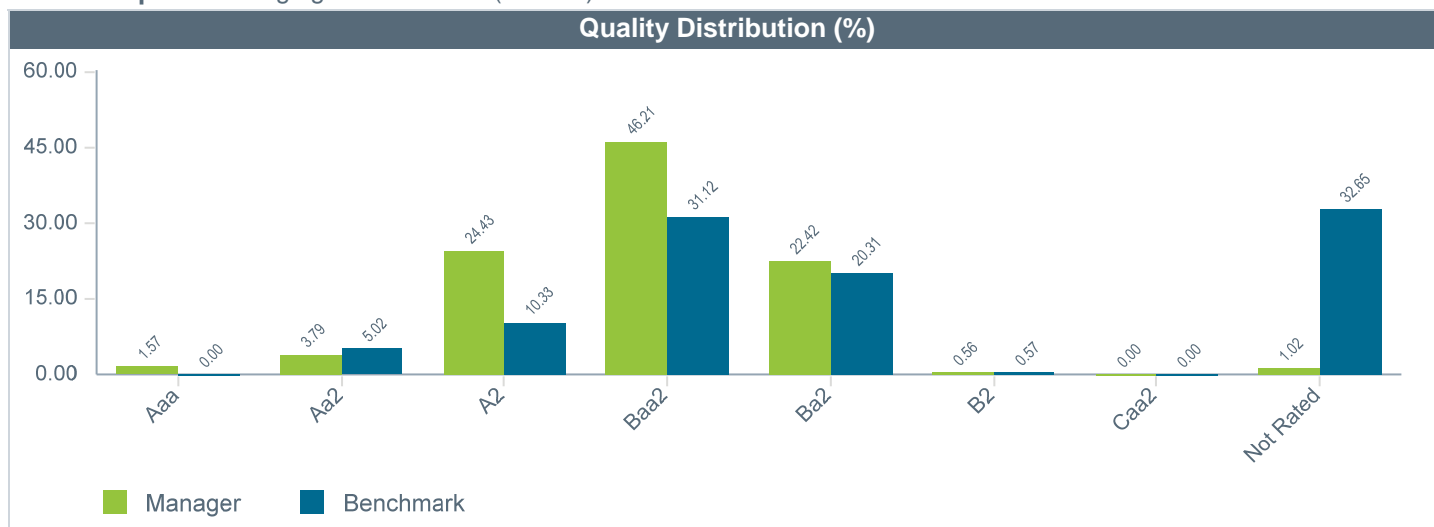
Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-2.98	-16.09	-4.86	-3.23	1.33	-0.33	-7.45	2.77	12.61	-7.84	15.68
Benchmark	-4.73	-20.63	-7.06	-3.92	0.40	-2.43	-8.75	2.69	13.47	-6.21	15.21
Difference	1.75	4.54	2.20	0.69	0.93	2.10	1.30	0.08	-0.86	-1.63	0.47
Peer Group Median	-4.04	-19.94	-4.92	-2.09	1.78	0.79	-2.29	6.71	14.30	-5.29	12.45
Rank	26	15	49	79	72	69	84	94	78	86	21
Population	129	129	128	122	116	88	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	4.27	4.90
Spread Duration	N/A	0.03
Avg. Maturity	5.89	7.09
Avg. Quality	Baa1	Ba3
Yield To Maturity (%)	7.84	7.76
Coupon Rate (%)	5.96	5.41
Current Yield (%)	5.81	5.64
Holdings Count	80	304





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.



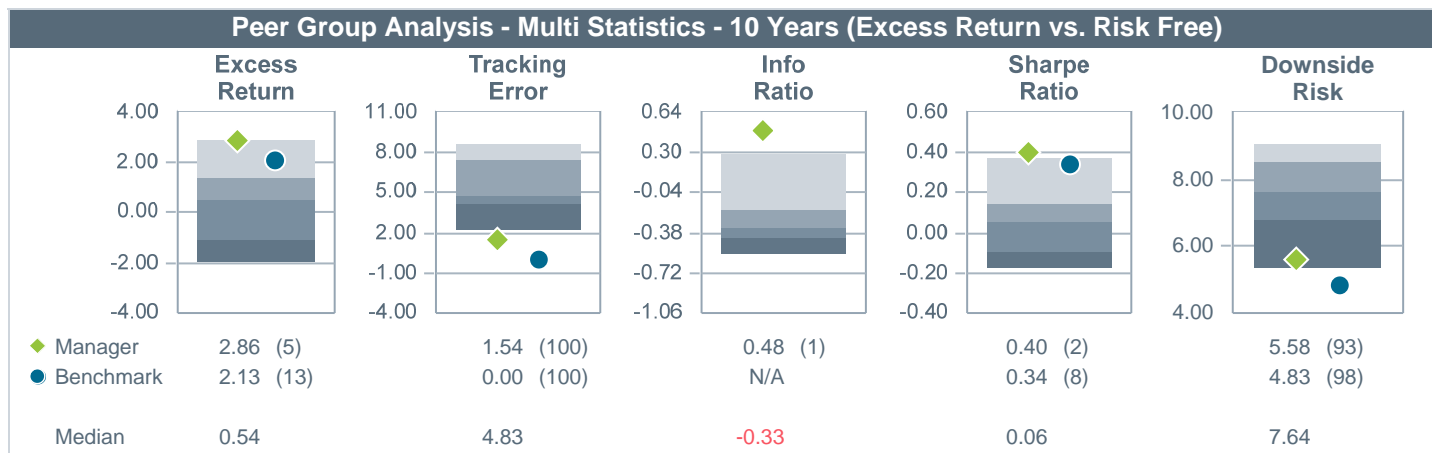
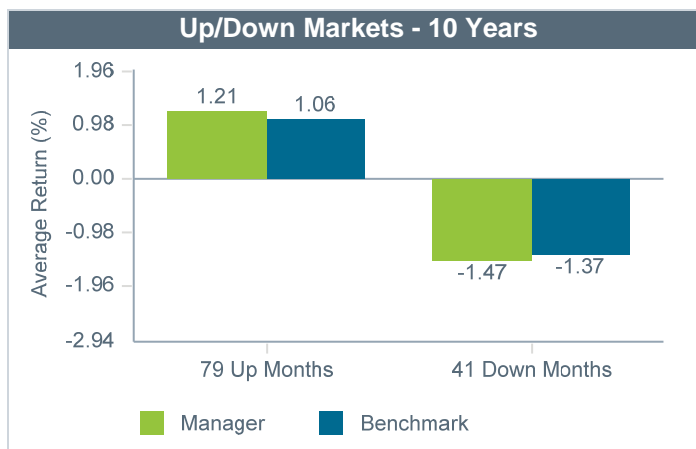
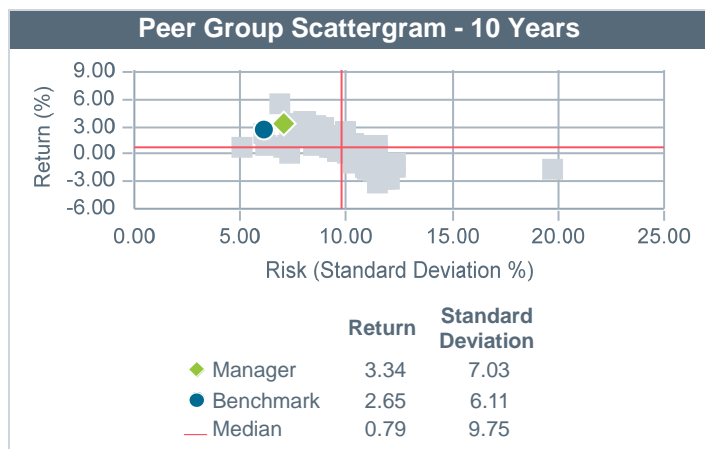
Manager: Goldman Sachs

As of September 30, 2022

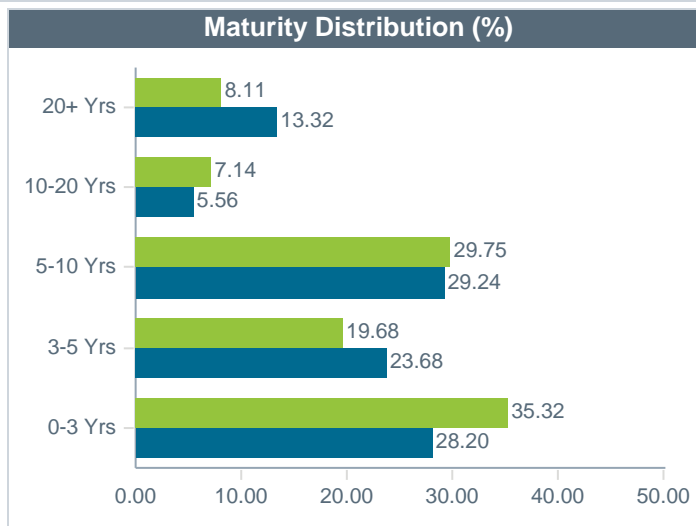
Benchmark: Goldman Sachs Custom Index

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	-1.45	-17.05	-2.43	0.65	3.39	3.34	-0.38	8.70	14.69	-1.62	9.57
Benchmark	-2.64	-16.73	-2.48	0.32	2.64	2.65	0.91	7.31	13.09	-1.65	7.96
Difference	1.19	-0.32	0.05	0.33	0.75	0.69	-1.29	1.39	1.60	0.03	1.61
Peer Group Median	-4.04	-19.94	-4.92	-2.09	1.78	0.79	-2.29	6.71	14.30	-5.29	12.45
Rank	6	20	19	12	11	5	23	22	42	13	86
Population	129	129	128	122	116	88	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	4.25	4.26
Spread Duration	4.42	4.30
Avg. Maturity	12.45	10.73
Avg. Quality	Baa3	Baa3
Yield To Maturity (%)	9.58	8.28
Coupon Rate (%)	4.61	4.65
Current Yield (%)	5.52	5.39
Holdings Count	242	1,943

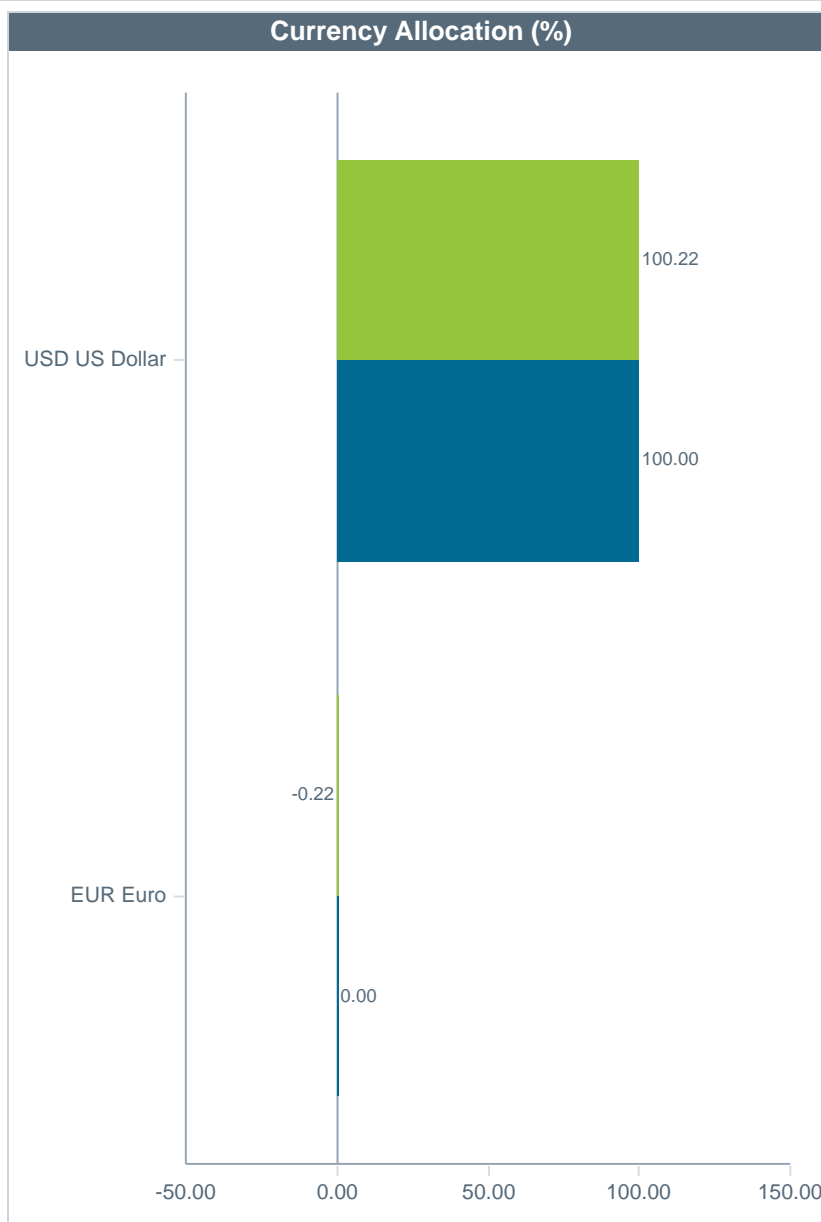
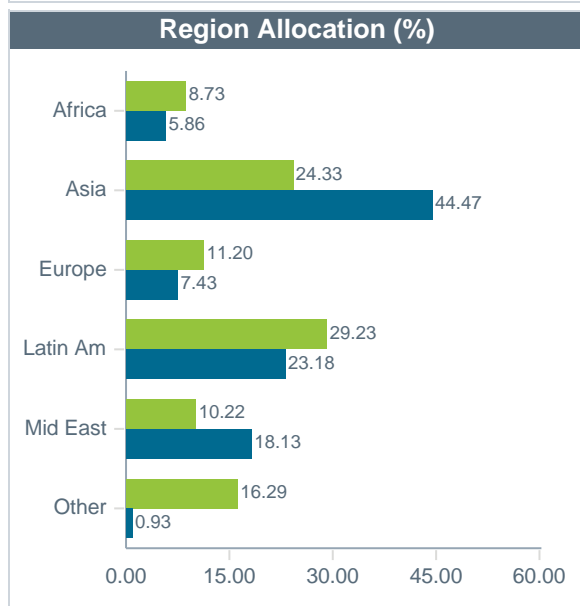
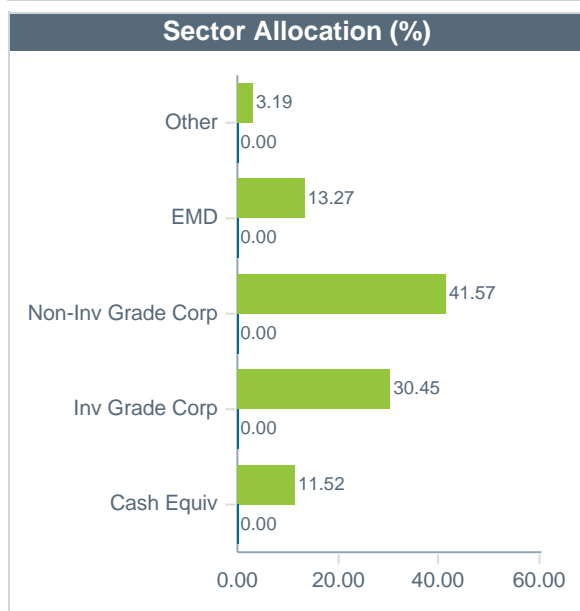
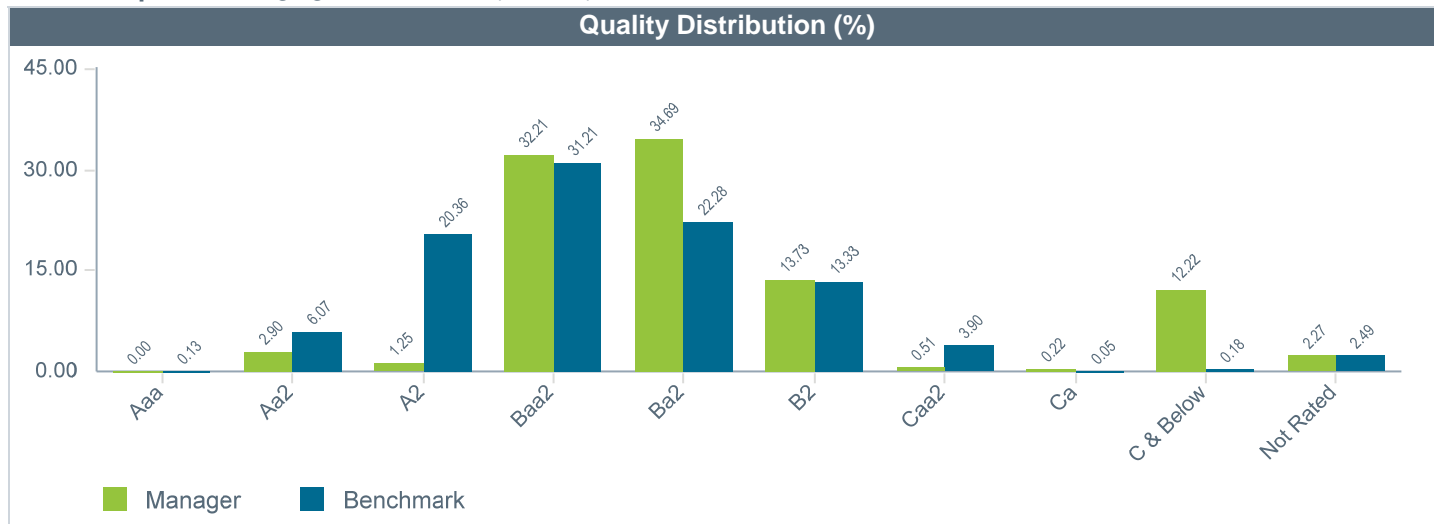


Manager: Goldman Sachs

As of September 30, 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.



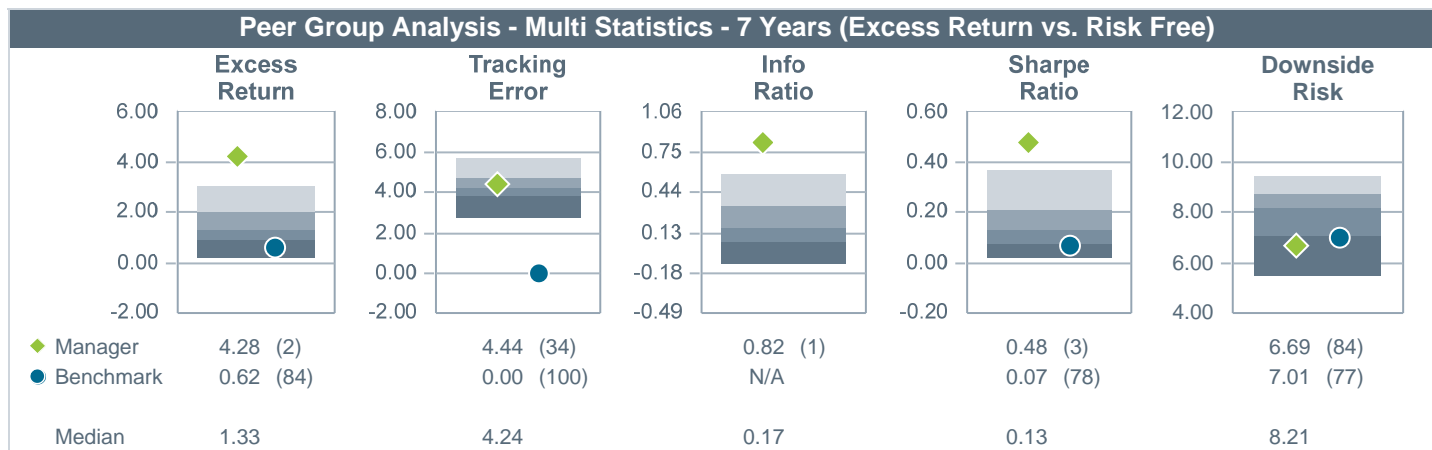
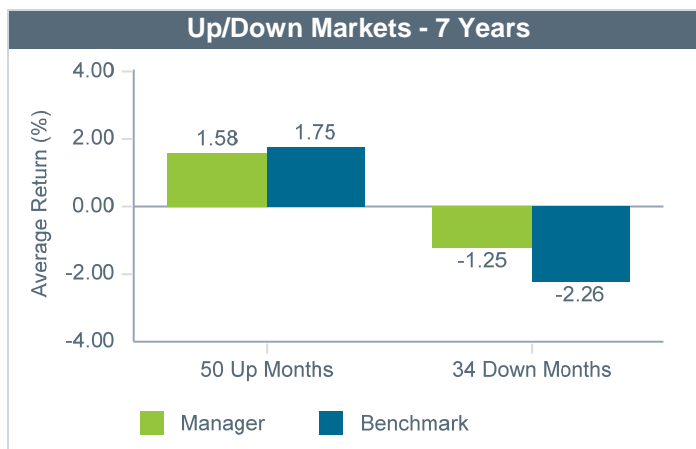
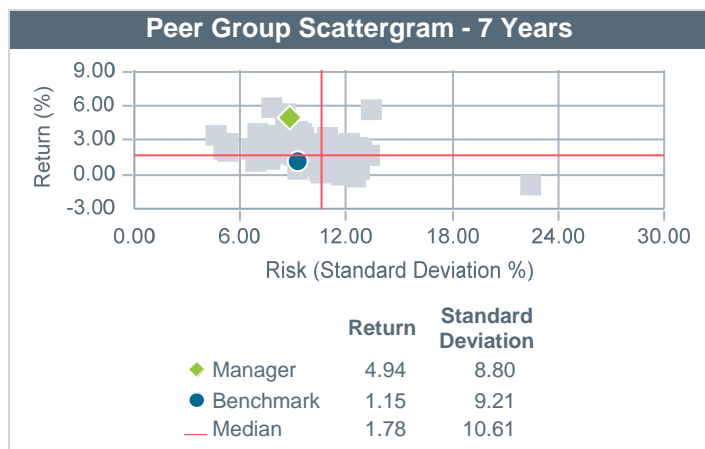
Manager: Eaton Vance

As of September 30, 2022

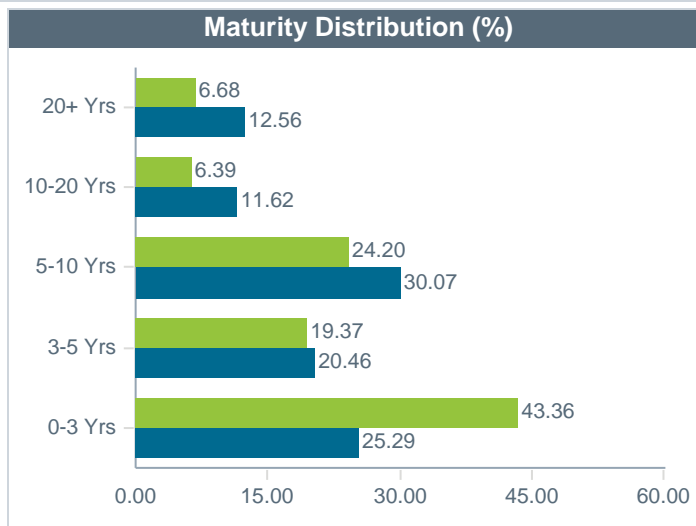
Benchmark: JP Morgan EMB (JEMB) Hard/Local 50/50

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	-1.35	-17.09	-0.44	1.82	4.94	N/A	3.23	8.35	19.33	-3.44	14.00
Benchmark	-4.16	-20.57	-5.92	-2.49	1.15	-0.24	-4.65	4.49	13.84	-4.50	12.15
Difference	2.81	3.48	5.48	4.31	3.79	N/A	7.88	3.86	5.49	1.06	1.85
Peer Group Median	-4.04	-19.94	-4.92	-2.09	1.78	0.79	-2.29	6.71	14.30	-5.29	12.45
Rank	6	21	4	3	2	N/A	3	24	1	24	36
Population	129	129	128	122	116	88	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	3.18	5.15
Spread Duration	1.84	2.73
Avg. Maturity	5.26	9.26
Avg. Quality	B2	Ba3
Yield To Maturity (%)	14.06	11.87
Coupon Rate (%)	6.27	5.11
Current Yield (%)	9.25	5.75
Holdings Count	207	871

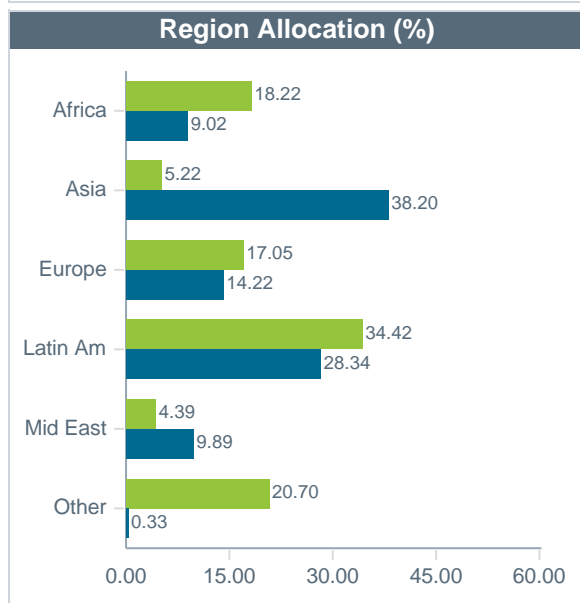
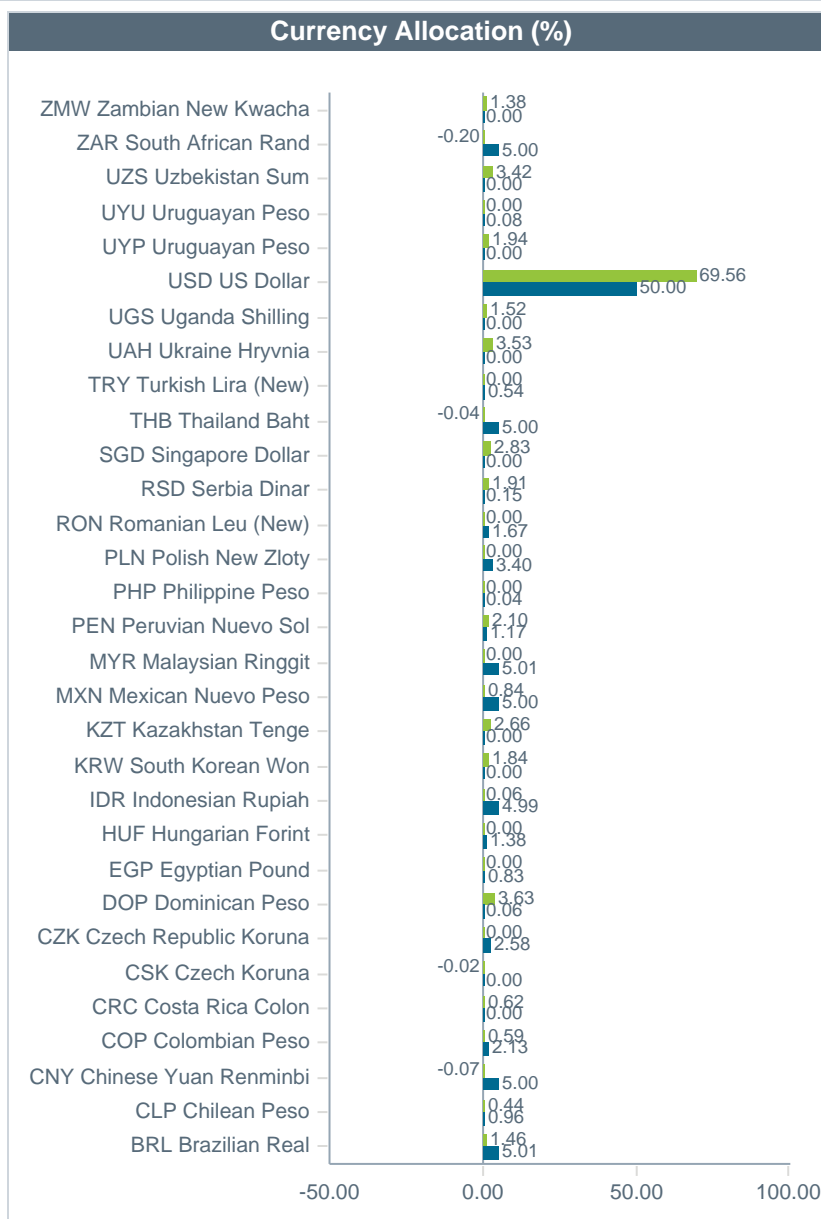
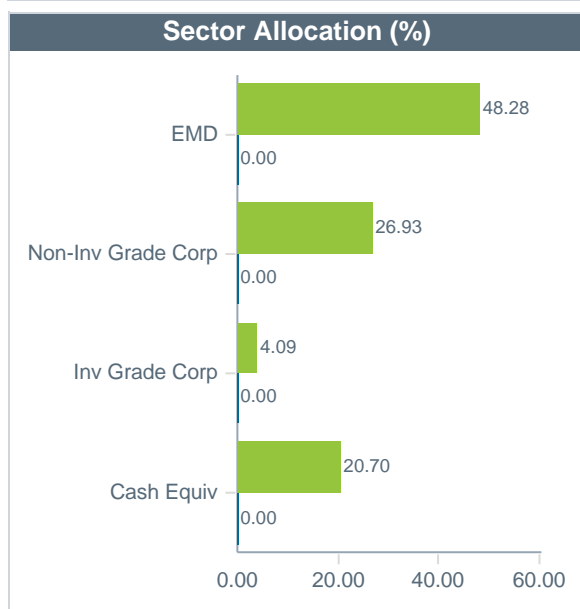
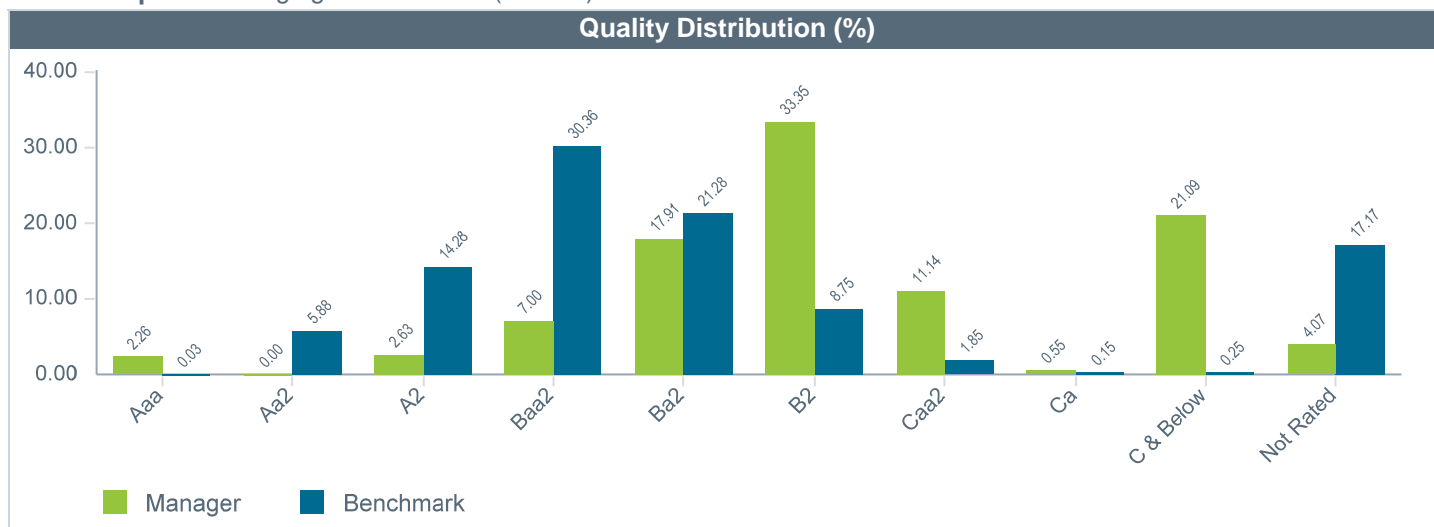


Manager: Eaton Vance

As of September 30, 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.



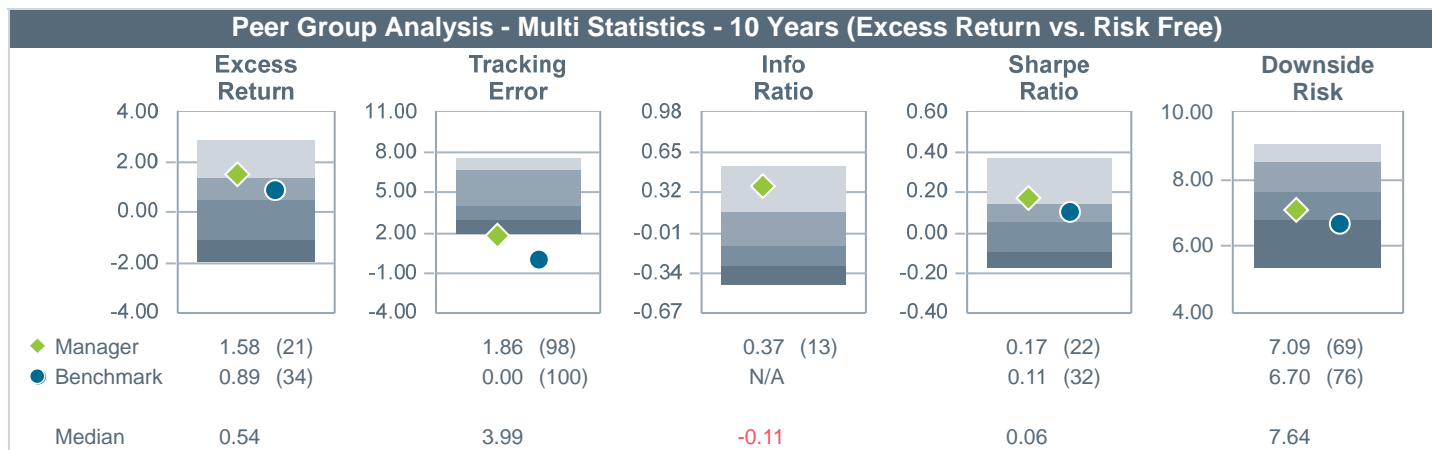
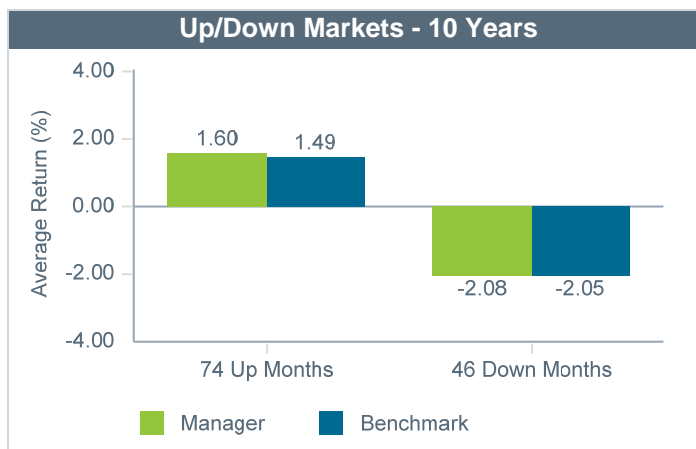
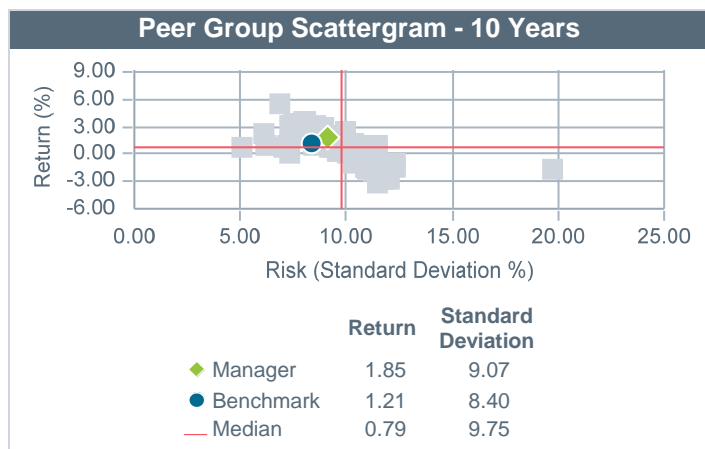
Manager: Global Evolution Hard

As of September 30, 2022

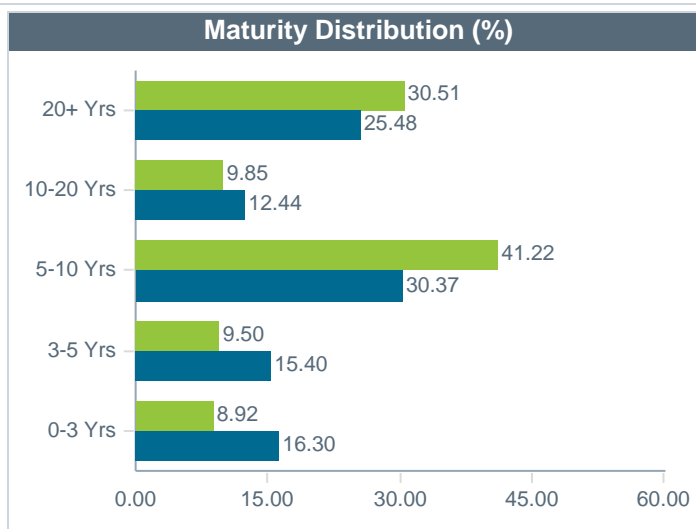
Benchmark: JP Morgan EMBIG Div Ex CCC Index (USD) Total Return

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	-4.37	-24.03	-6.93	-2.49	1.39	1.85	-3.07	6.04	14.13	-4.01	13.35
Benchmark	-4.33	-23.34	-6.62	-2.12	1.10	1.21	-2.04	6.09	15.72	-4.14	10.79
Difference	-0.04	-0.69	-0.31	-0.37	0.29	0.64	-1.03	-0.05	-1.59	0.13	2.56
Peer Group Median	-4.04	-19.94	-4.92	-2.09	1.78	0.79	-2.29	6.71	14.30	-5.29	12.45
Rank	63	77	88	60	68	22	57	58	54	33	40
Population	129	129	128	122	116	88	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	7.06	6.52
Spread Duration	N/A	6.54
Avg. Maturity	13.46	12.12
Avg. Quality	Baa3	Ba1
Yield To Maturity (%)	8.88	23.68
Coupon Rate (%)	4.95	4.97
Current Yield (%)	6.85	6.34
Holdings Count	127	932

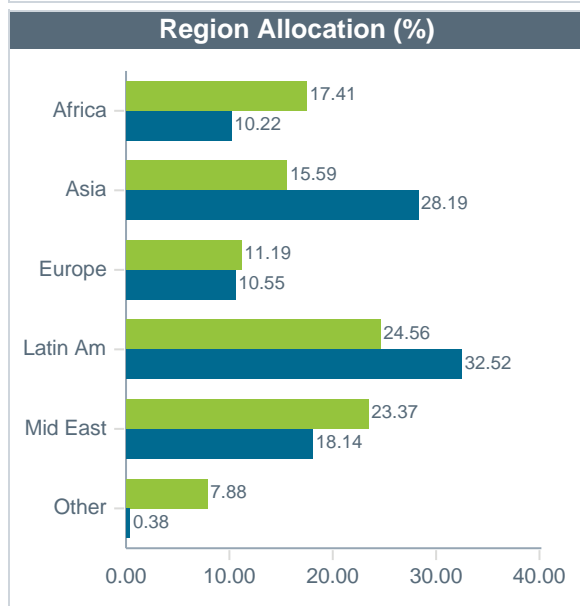
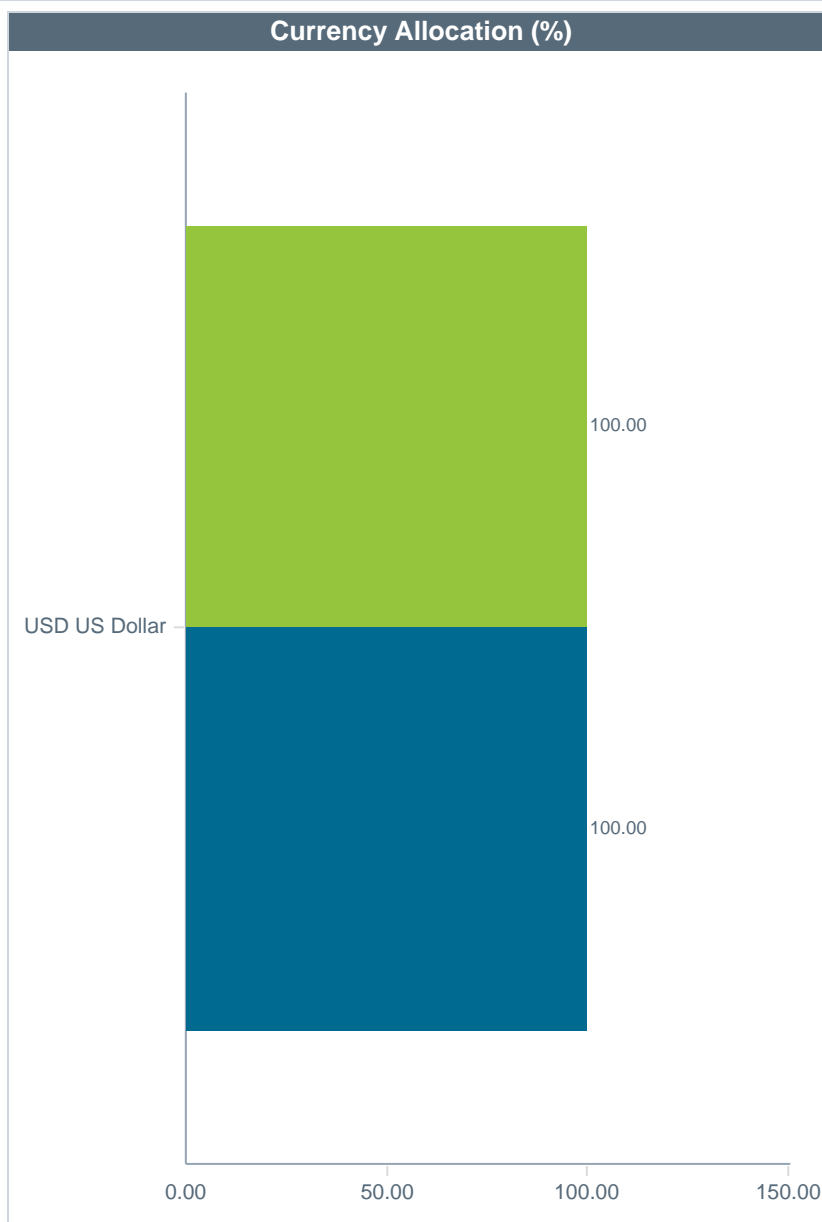
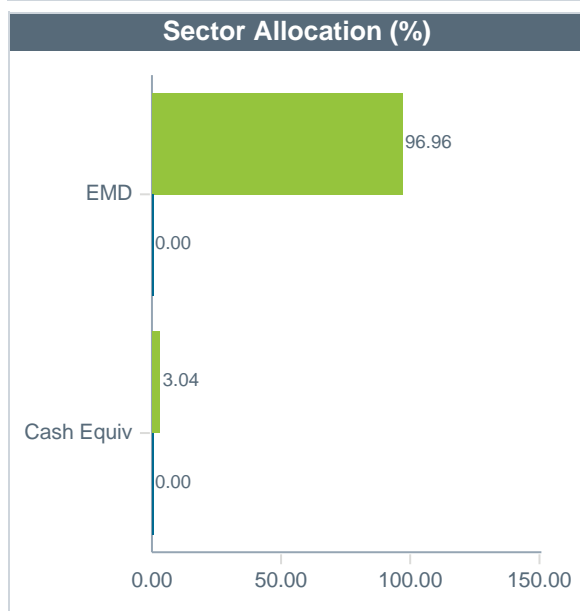
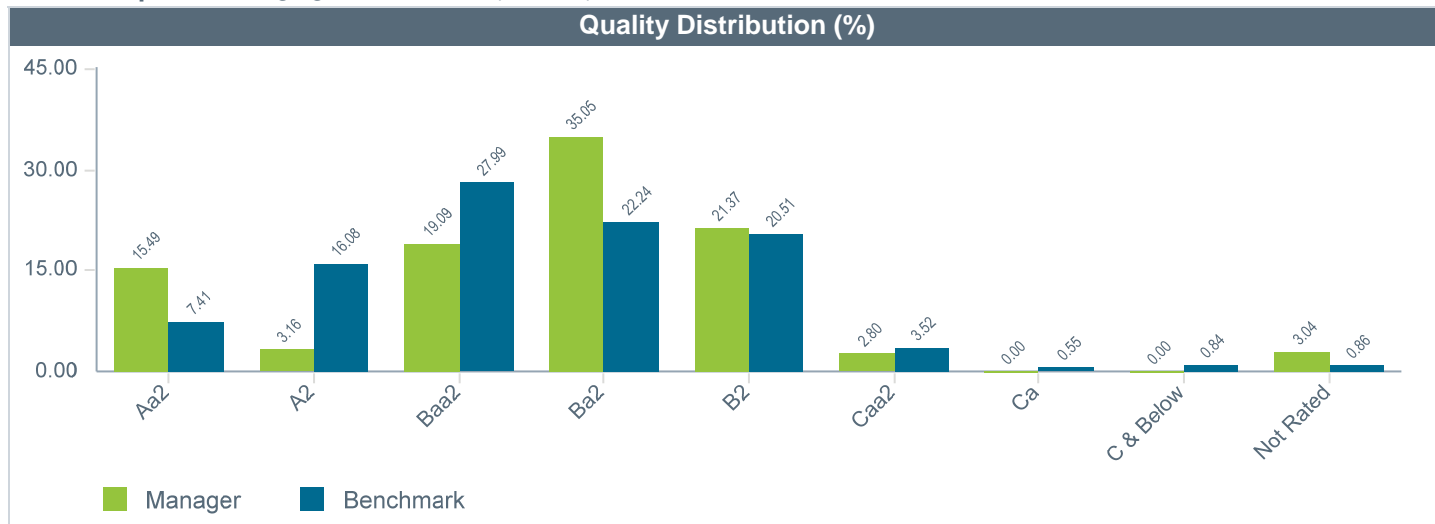


**Manager:** Global Evolution Hard

**As of September 30, 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.

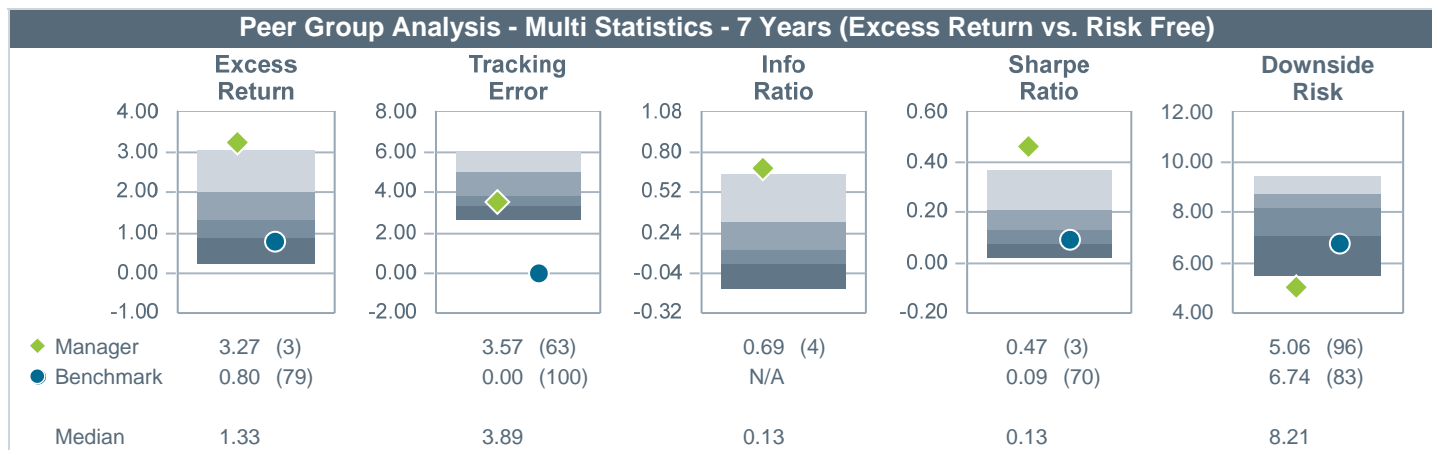
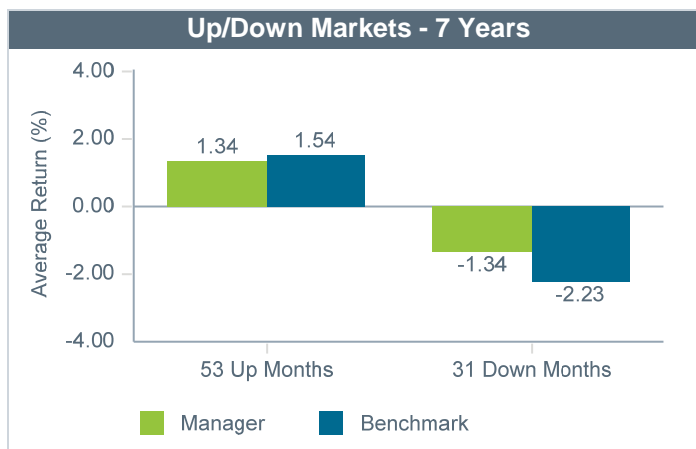
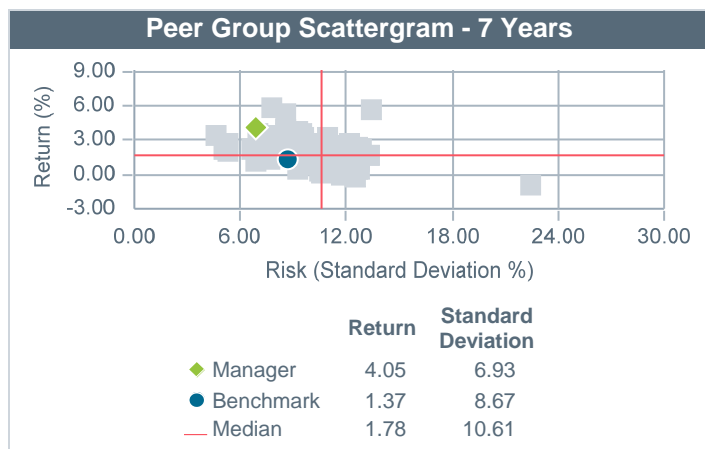
Manager: Finisterre

As of September 30, 2022

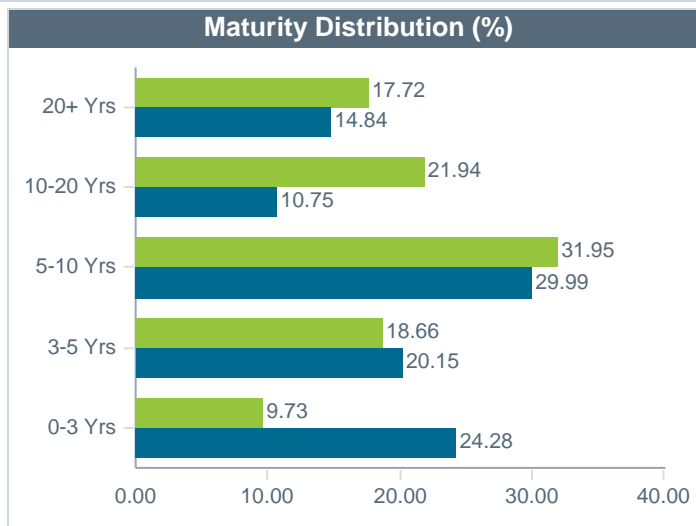
Benchmark: Custom EMD Benchmark (1/3)

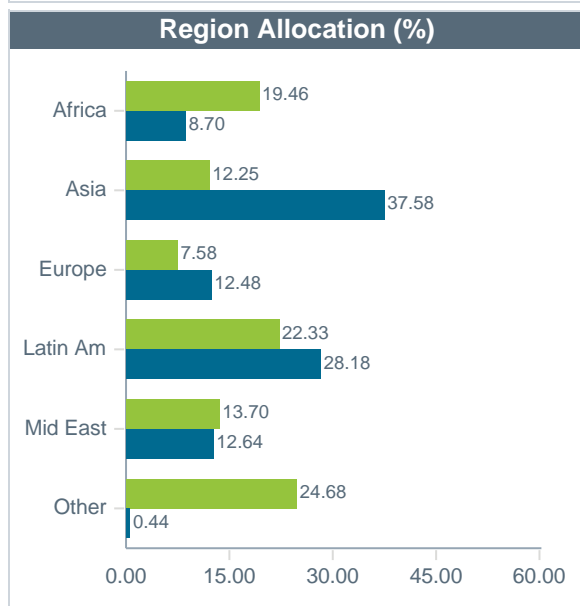
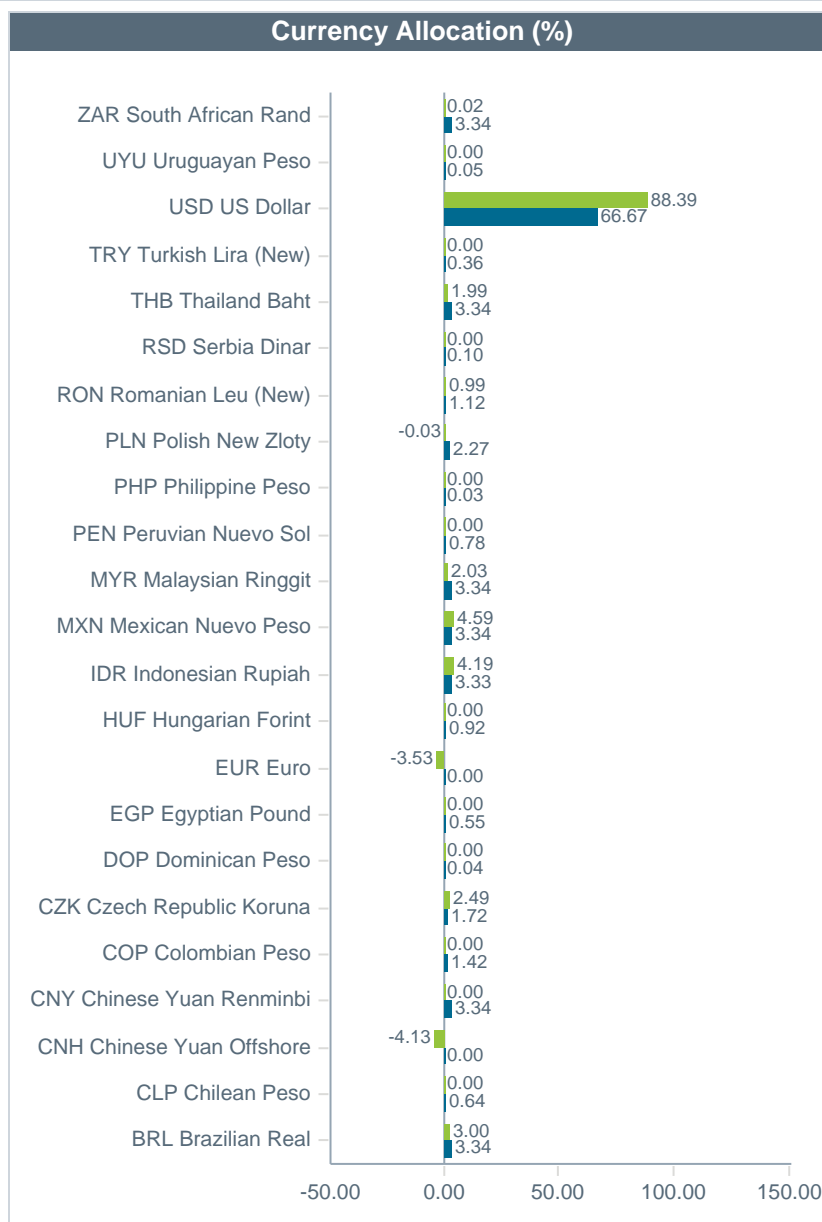
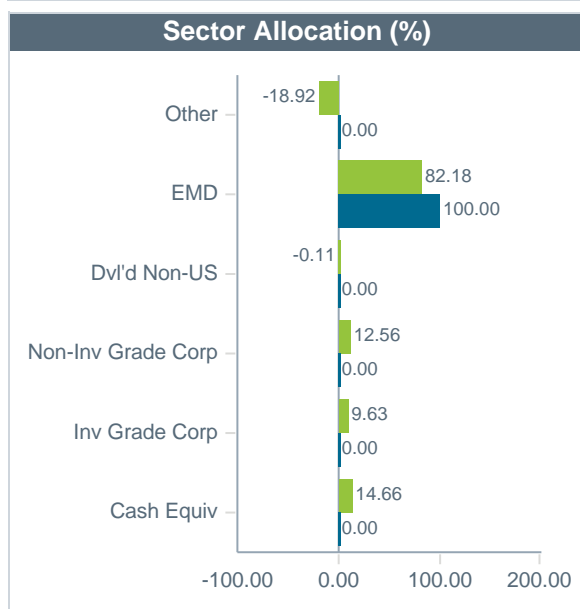
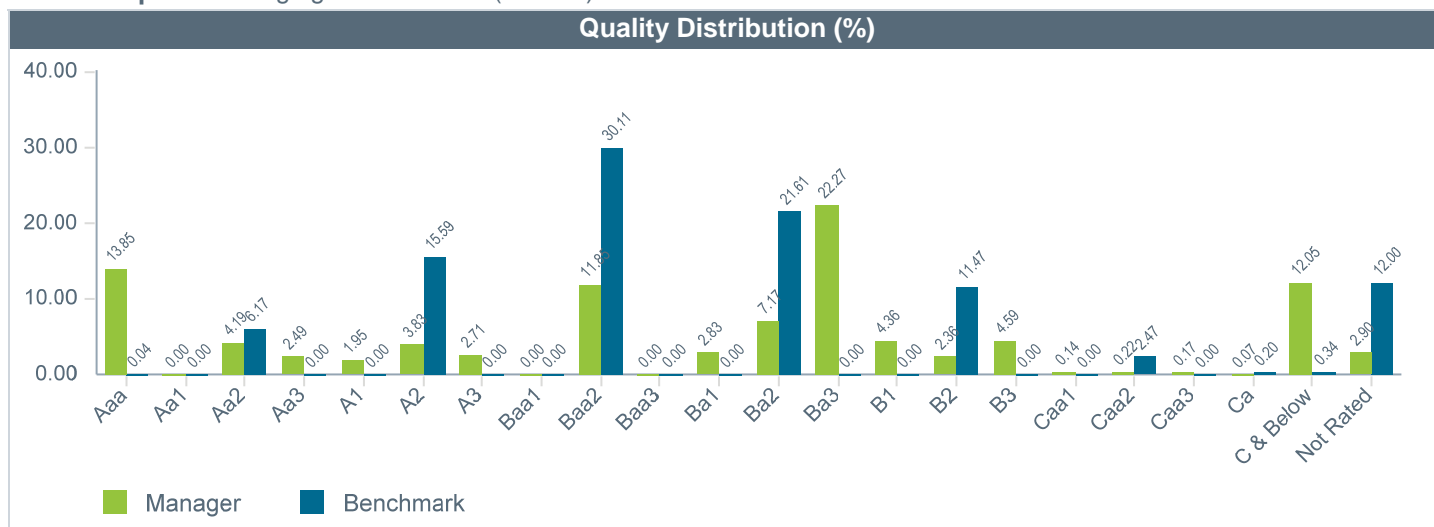
Peer Group: IM Emerging Markets Debt (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-3.88	-14.87	-2.19	1.17	4.05	N/A	-2.68	8.14	16.04	-0.20	12.46
Benchmark	-3.97	-20.56	-5.55	-2.04	1.37	0.47	-3.26	5.07	13.93	-3.96	11.13
Difference	0.09	5.69	3.36	3.21	2.68	N/A	0.58	3.07	2.11	3.76	1.33
Peer Group Median	-4.04	-19.94	-4.92	-2.09	1.78	0.79	-2.29	6.71	14.30	-5.29	12.45
Rank	43	10	15	5	3	N/A	54	28	14	6	50
Population	129	129	128	122	116	88	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	4.57	5.23
Spread Duration	3.31	3.62
Avg. Maturity	8.00	9.98
Avg. Quality	BBB	Ba2
Yield To Maturity (%)	7.98	13.24
Coupon Rate (%)	5.00	5.01
Current Yield (%)	6.10	5.79
Holdings Count	237	1,060





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.



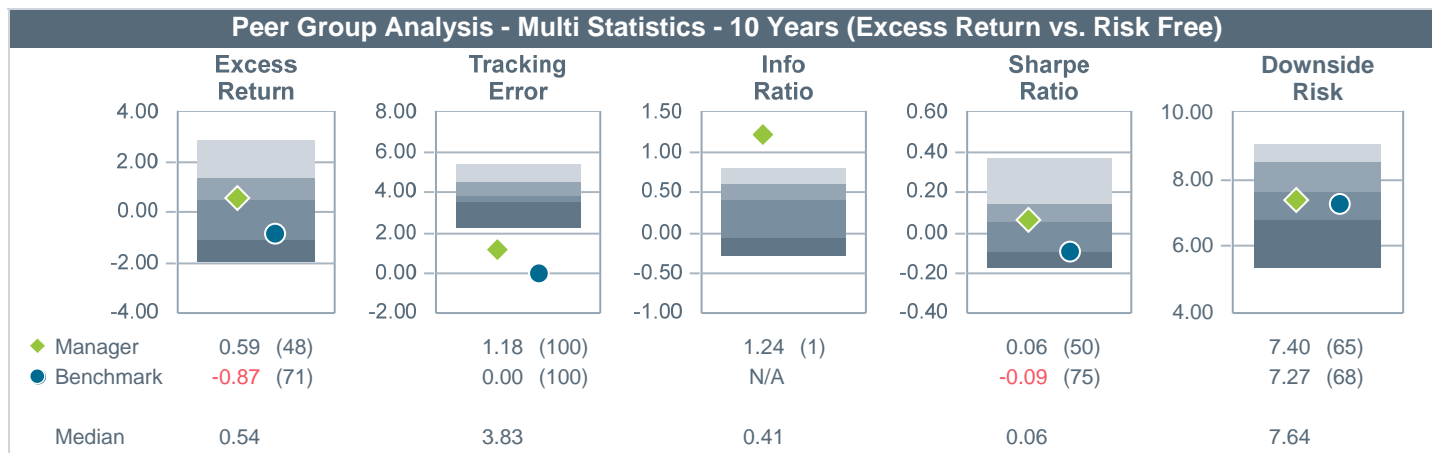
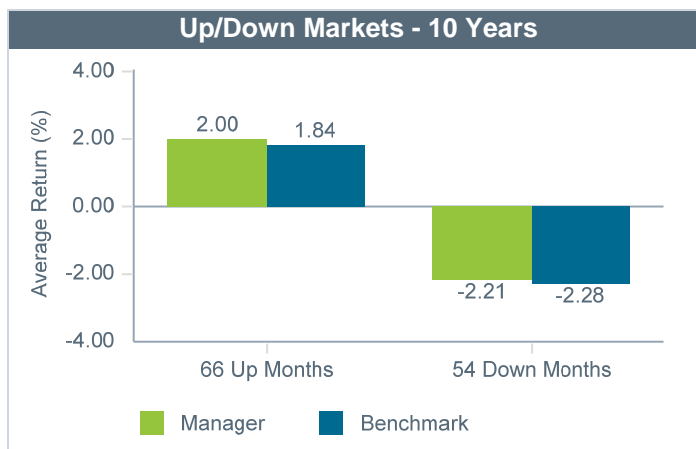
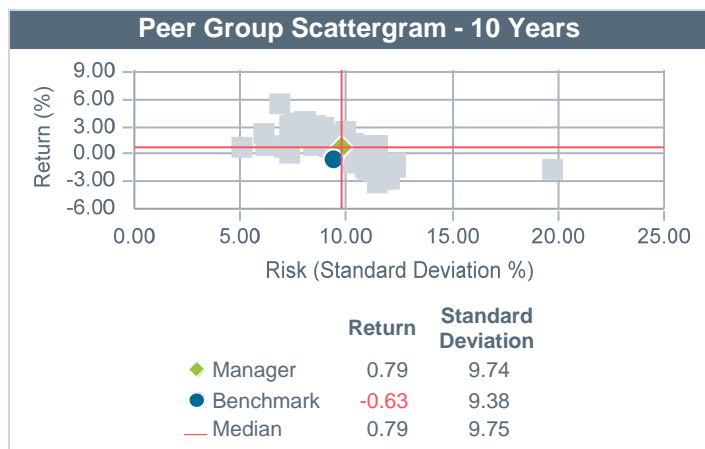
Manager: Wellington

As of September 30, 2022

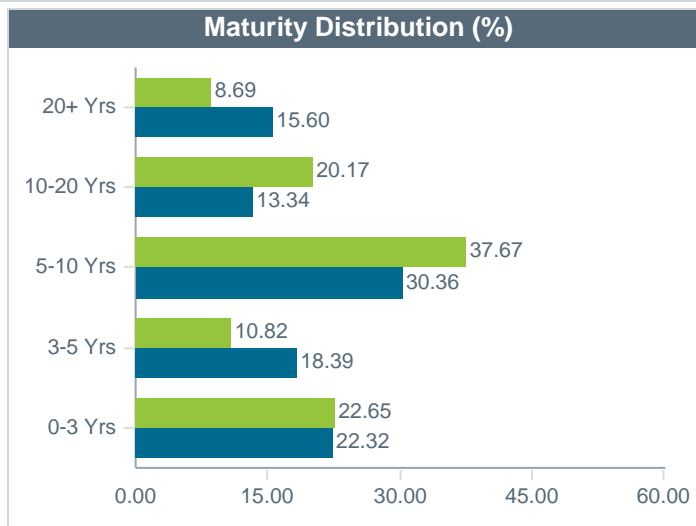
Benchmark: 50% JPM GBI-EM Glb Div / 50% JPM EMBI Glb Div

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	-3.92	-21.55	-5.58	-1.95	2.15	0.79	-5.20	6.53	17.28	-5.34	14.56
Benchmark	-4.63	-22.45	-7.07	-3.22	0.71	-0.63	-5.32	4.02	14.31	-5.15	12.74
Difference	0.71	0.90	1.49	1.27	1.44	1.42	0.12	2.51	2.97	-0.19	1.82
Peer Group Median	-4.04	-19.94	-4.92	-2.09	1.78	0.79	-2.29	6.71	14.30	-5.29	12.45
Rank	43	60	62	47	36	50	70	54	5	53	30
Population	129	129	128	122	116	88	138	149	159	169	174



Portfolio Characteristics (%)		
	Portfolio	Benchmark
Effective Duration	5.70	5.71
Spread Duration	3.03	3.29
Avg. Maturity	9.10	9.60
Avg. Quality	Baa2	Ba3
Yield To Maturity (%)	8.18	15.72
Coupon Rate (%)	4.95	5.19
Current Yield (%)	6.83	5.99
Holdings Count	429	618

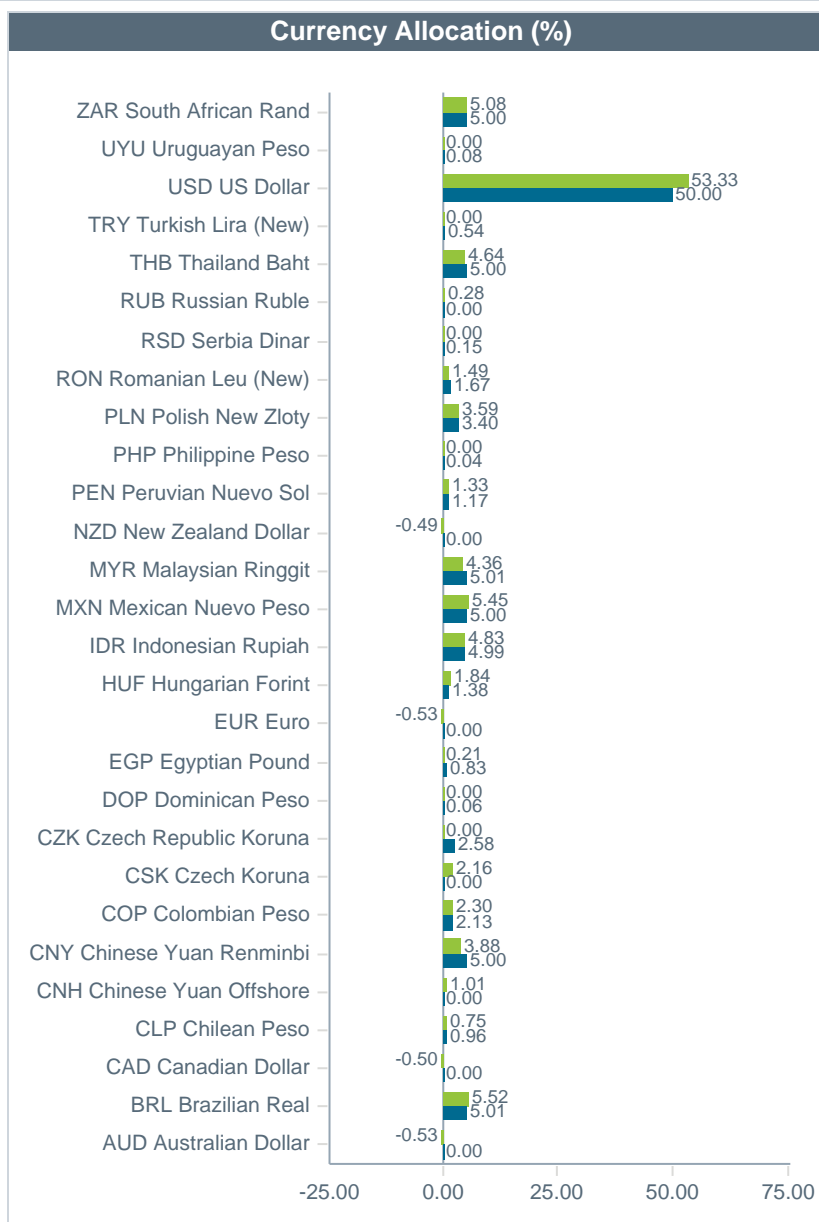
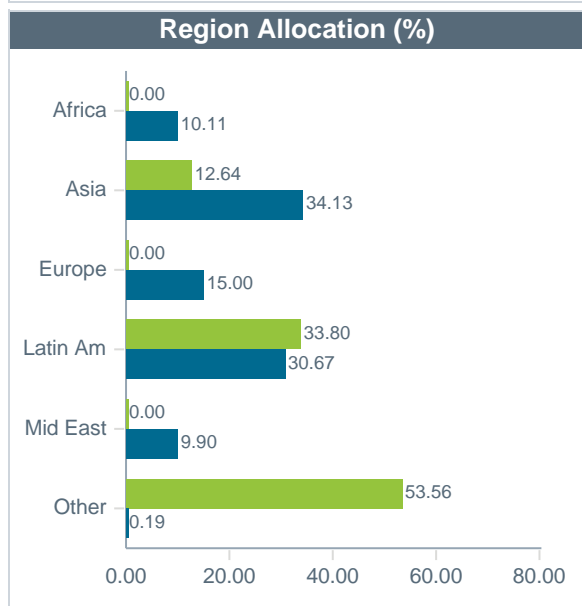
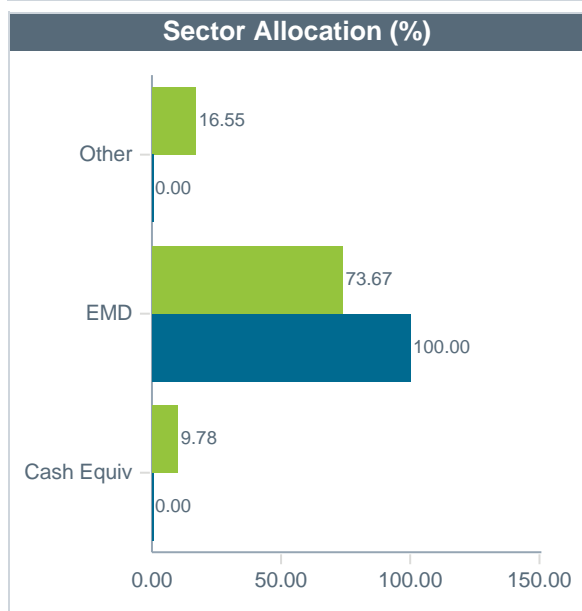
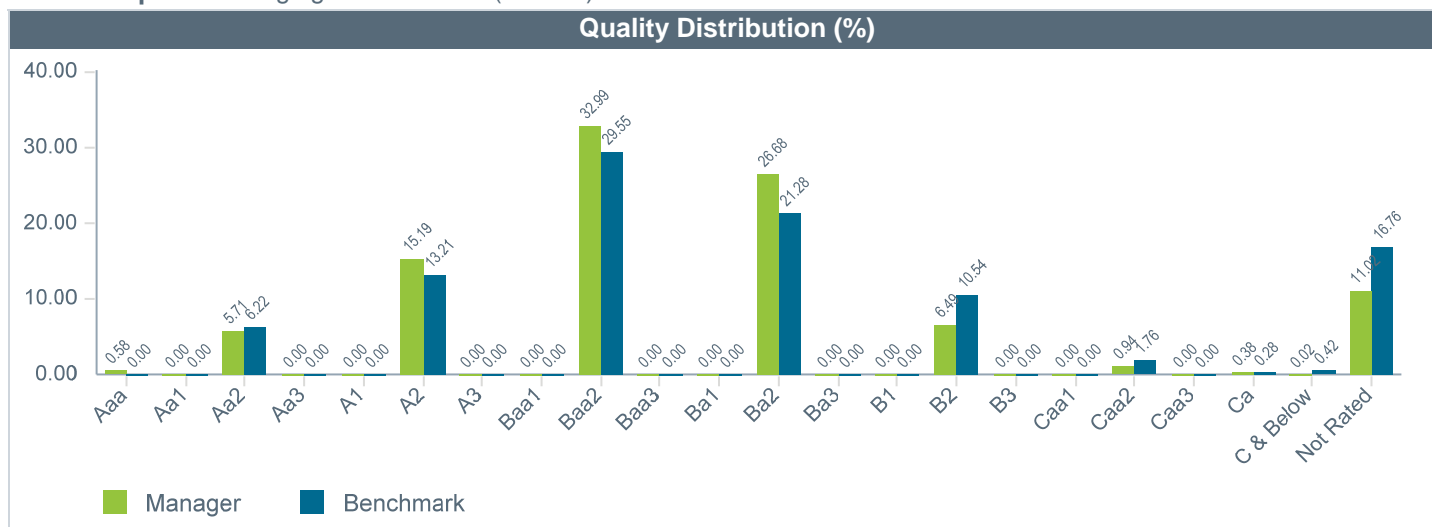


Manager: Wellington

As of September 30, 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.



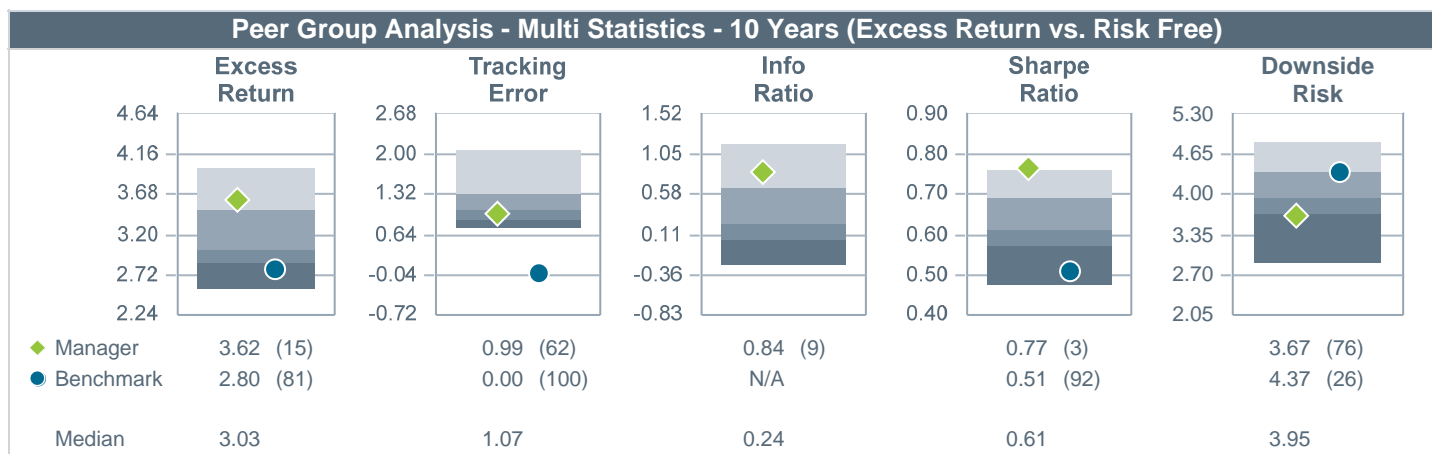
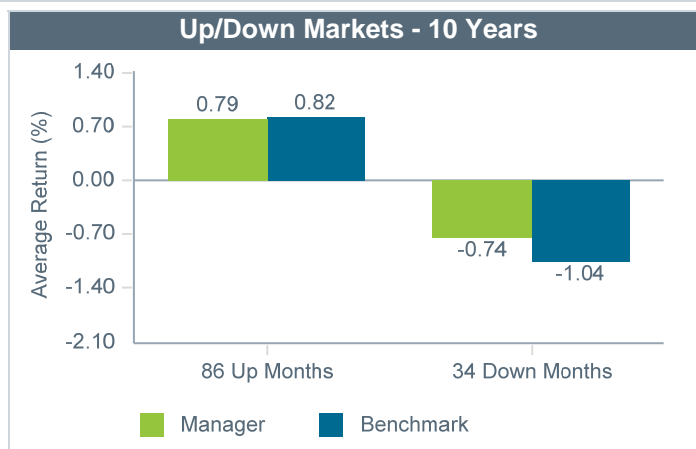
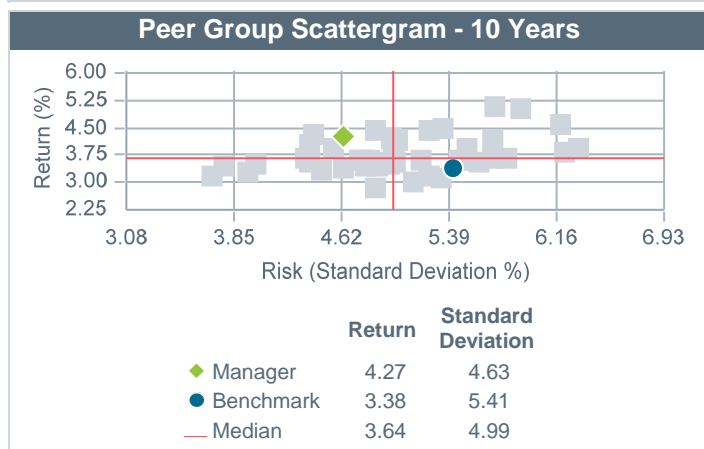
Manager: Credit Suisse

As of September 30, 2022

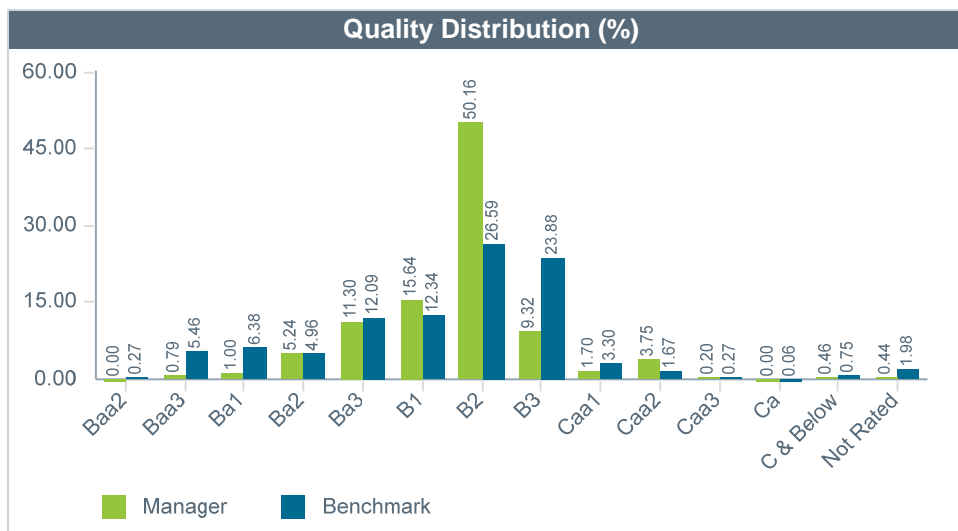
Benchmark: Bank Loans Custom Index

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	1.51	-1.77	2.44	3.26	4.04	4.27	5.23	3.11	7.97	1.51	5.07
Benchmark	1.32	-3.89	1.69	2.66	3.43	3.38	4.66	3.12	8.64	0.44	4.12
Difference	0.19	2.12	0.75	0.60	0.61	0.89	0.57	-0.01	-0.67	1.07	0.95
Peer Group Median	1.35	-2.87	2.01	3.02	3.57	3.64	5.34	2.49	8.71	0.80	4.46
Rank	37	24	28	24	22	15	53	30	82	11	17
Population	52	51	51	50	48	45	54	57	60	67	68



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.25	N/A
Spread Duration	2.06	N/A
Avg. Maturity	4.49	4.59
Avg. Quality	Ba2	B1
Yield To Maturity (%)	10.36	8.47
Coupon Rate (%)	6.98	3.55
Current Yield (%)	7.59	8.47
Holdings Count	326	1,521



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

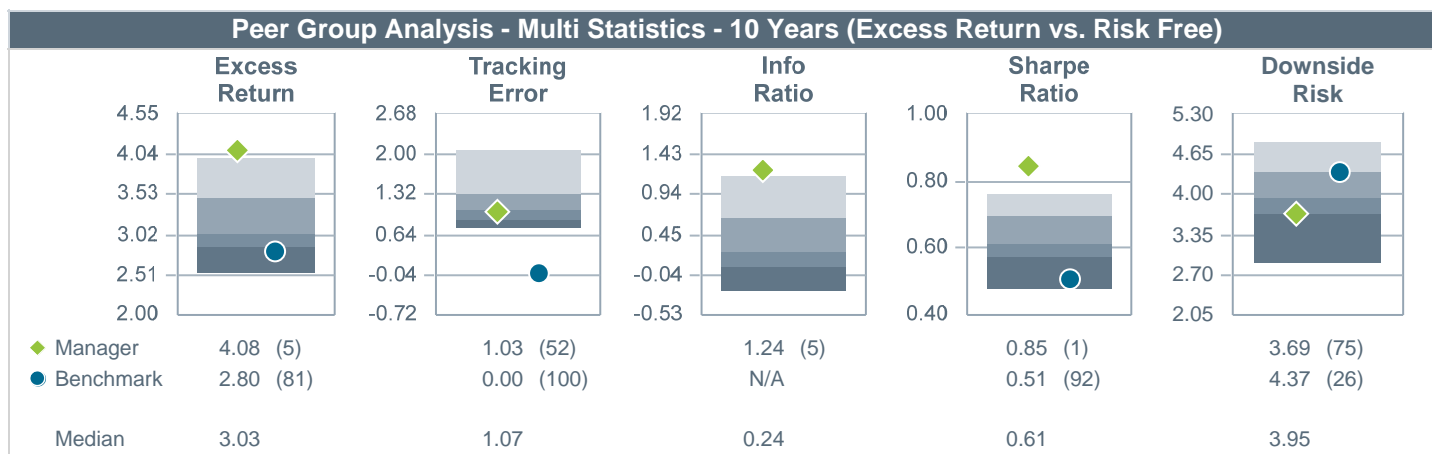
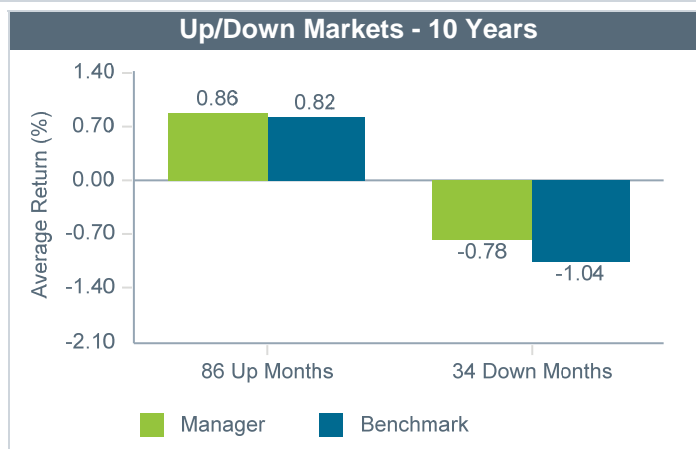
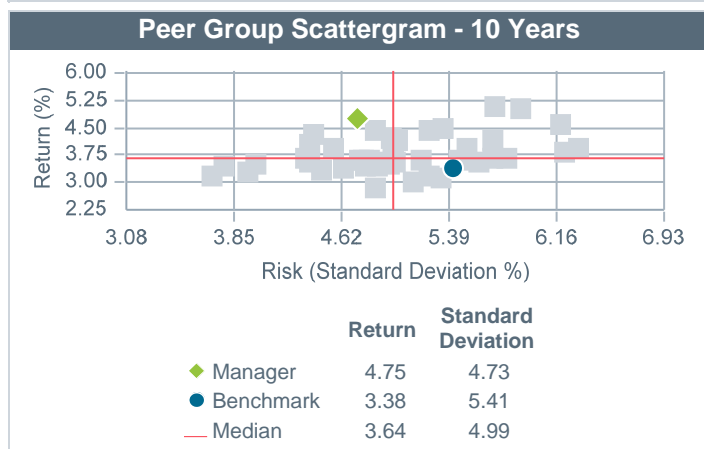
Manager: Octagon

As of September 30, 2022

Benchmark: Bank Loans Custom Index

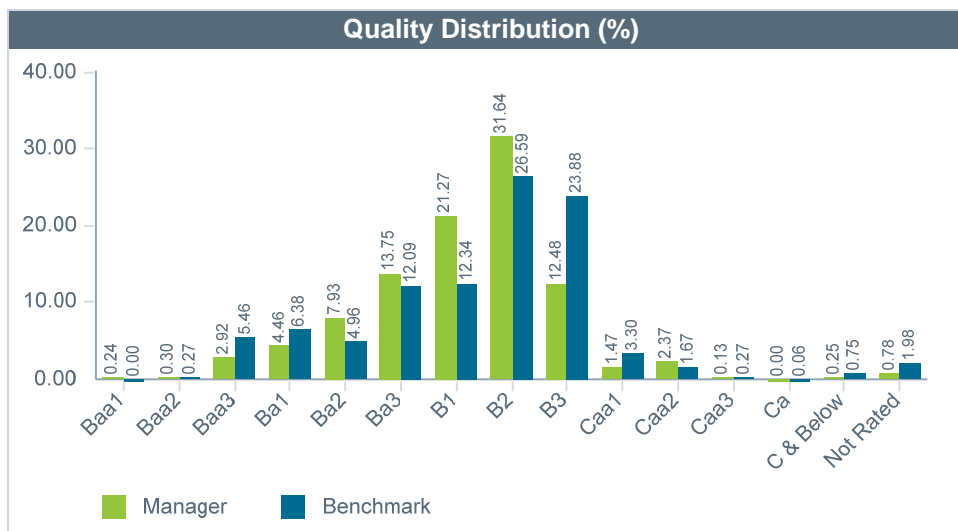
Peer Group: IM U.S. Bank Loans (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	1.16	-3.54	2.13	3.41	4.38	4.75	5.04	3.72	8.92	2.17	6.65
Benchmark	1.32	-3.89	1.69	2.66	3.43	3.38	4.66	3.12	8.64	0.44	4.12
Difference	-0.16	0.35	0.44	0.75	0.95	1.37	0.38	0.60	0.28	1.73	2.53
Peer Group Median	1.35	-2.87	2.01	3.02	3.57	3.64	5.34	2.49	8.71	0.80	4.46
Rank	67	77	40	17	7	4	57	17	44	6	5
Population	52	51	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	5.01	4.59
Avg. Quality	B1	B1
Yield To Maturity (%)	9.19	8.47
Coupon Rate (%)	6.86	3.55
Current Yield (%)	7.53	8.47
Holdings Count	305	1,521



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

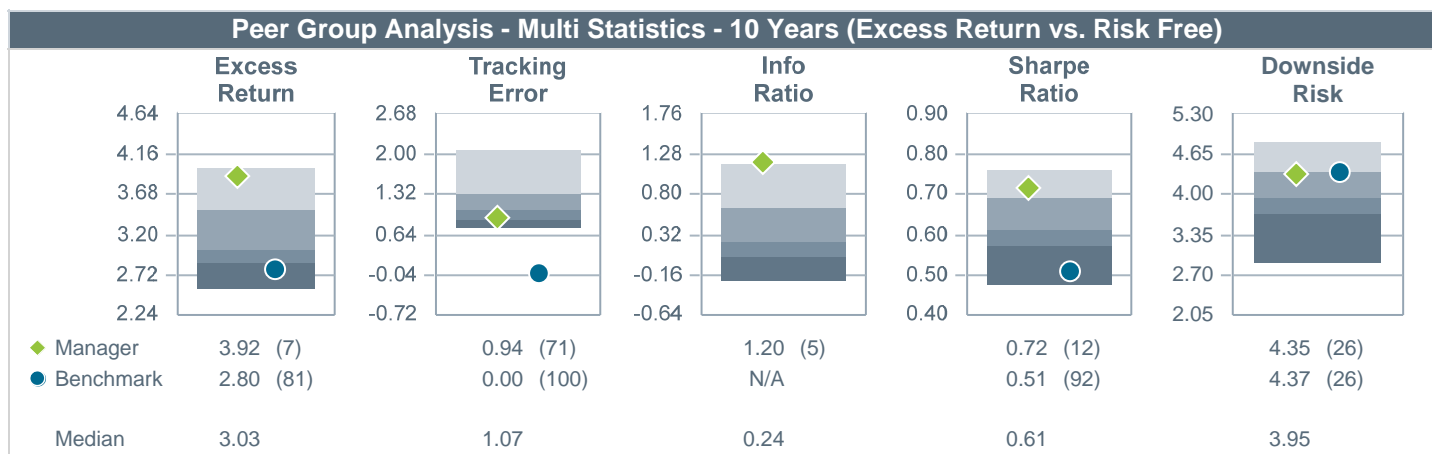
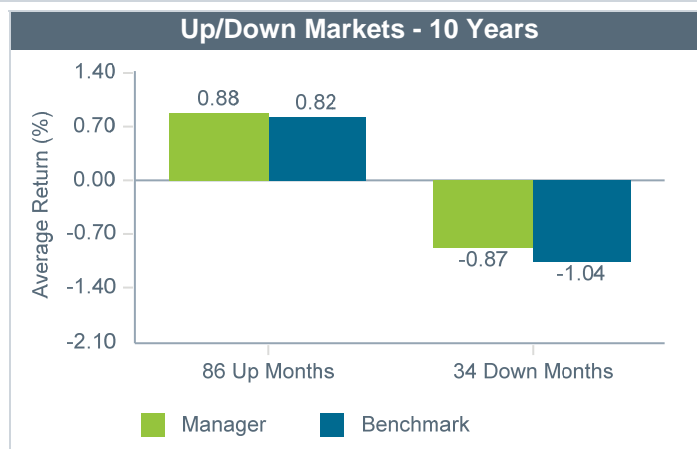
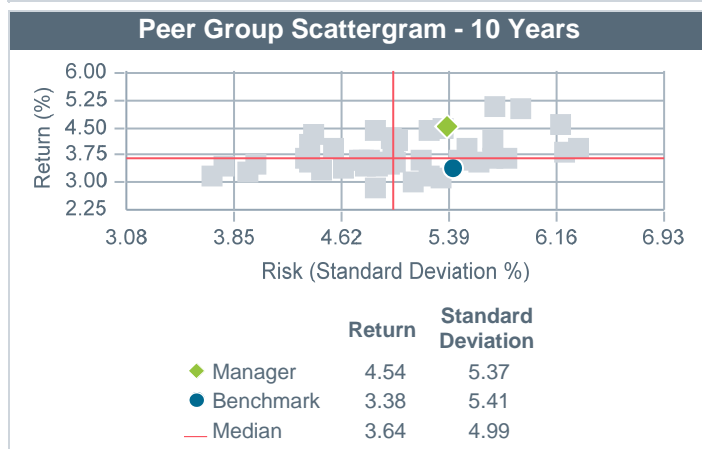
Manager: KKR

As of September 30, 2022

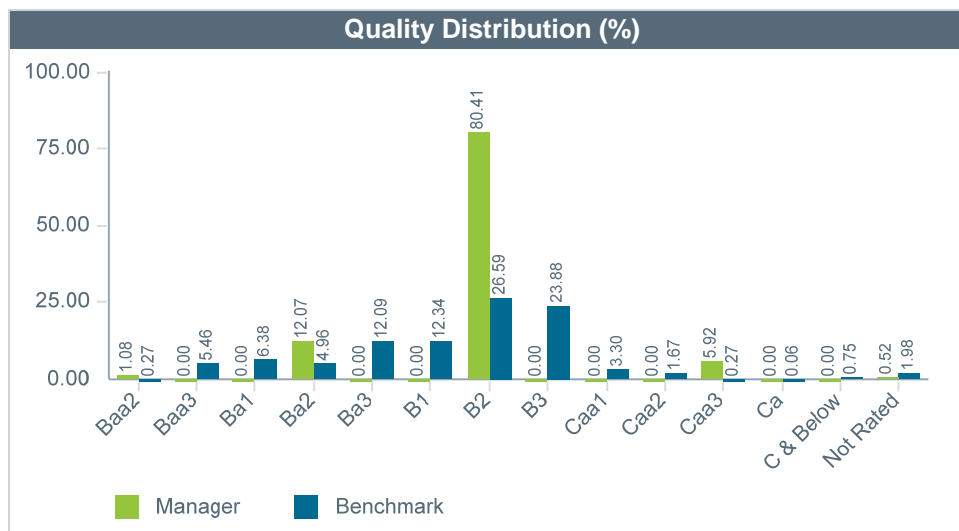
Benchmark: Bank Loans Custom Index

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	1.51	-1.86	3.46	3.67	4.48	4.54	5.86	5.18	7.87	1.10	5.13
Benchmark	1.32	-3.89	1.69	2.66	3.43	3.38	4.66	3.12	8.64	0.44	4.12
Difference	0.19	2.03	1.77	1.01	1.05	1.16	1.20	2.06	-0.77	0.66	1.01
Peer Group Median	1.35	-2.87	2.01	3.02	3.57	3.64	5.34	2.49	8.71	0.80	4.46
Rank	37	26	2	6	6	6	29	7	83	34	16
Population	52	51	51	50	48	45	54	57	60	67	68

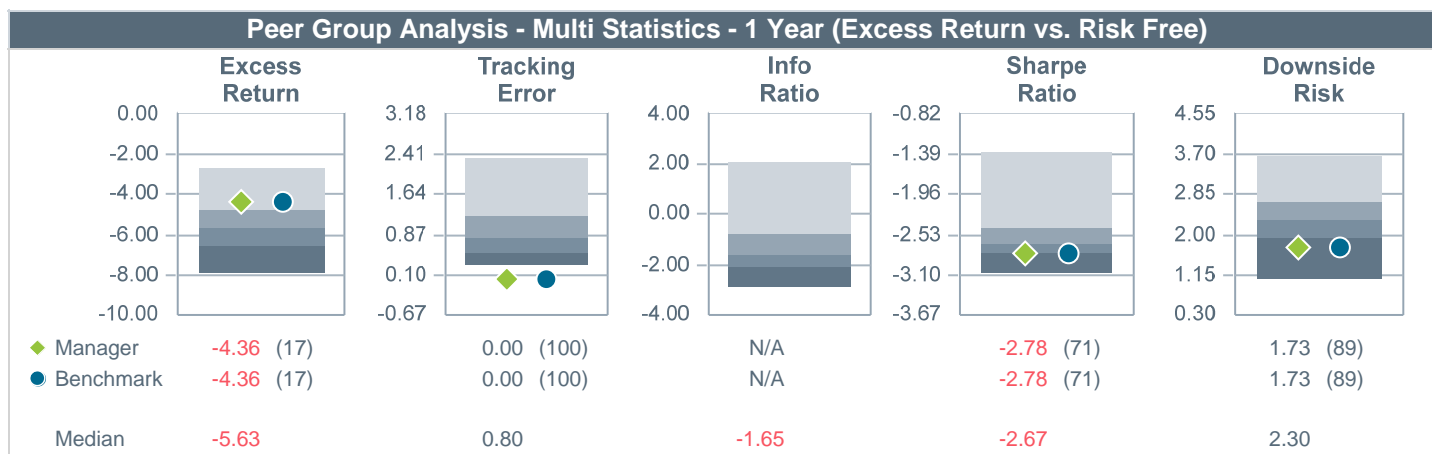
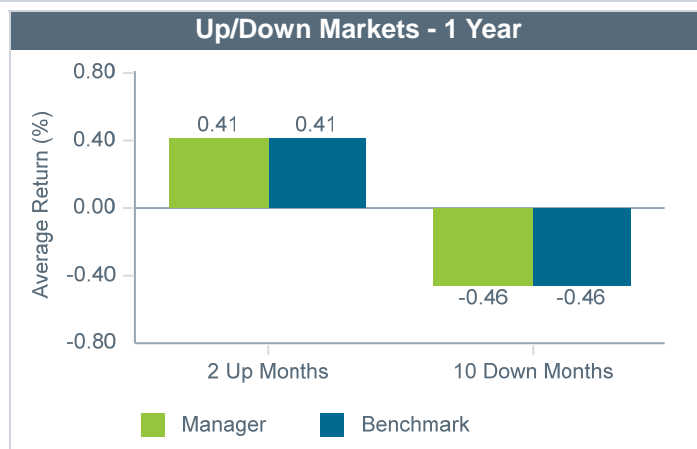
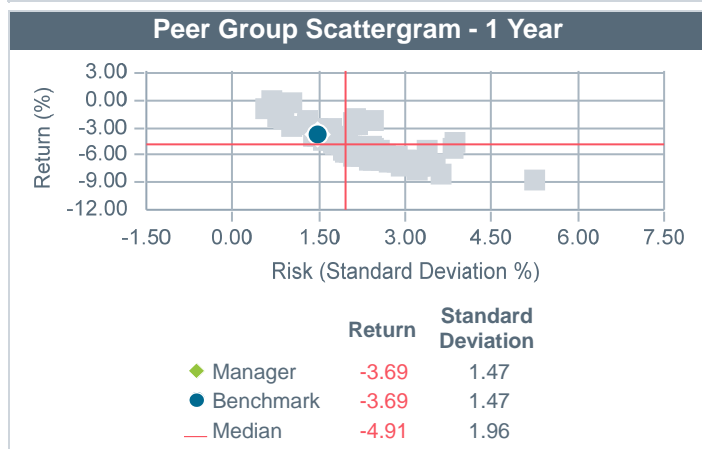


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.17	N/A
Spread Duration	3.66	N/A
Avg. Maturity	4.74	4.59
Avg. Quality	B2	B1
Yield To Maturity (%)	10.03	8.47
Coupon Rate (%)	7.20	3.55
Current Yield (%)	7.75	8.47
Holdings Count	279	1,521

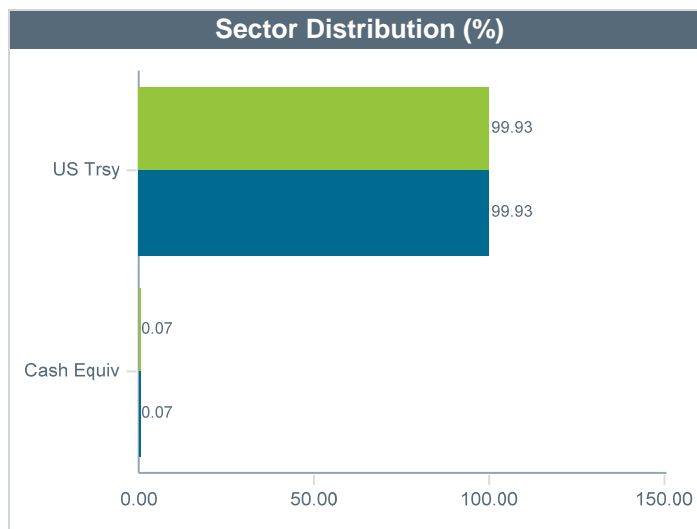


Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-1.04	-3.69	-0.06	N/A	N/A	N/A	-0.42	3.20	N/A	N/A	N/A
Benchmark	-1.04	-3.69	-0.06	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	-1.17	-4.91	0.00	1.07	1.20	1.17	-0.20	3.92	4.53	1.67	1.52
Rank	39	17	57	N/A	N/A	N/A	75	83	N/A	N/A	N/A
Population	107	106	103	100	92	84	117	122	125	134	134



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	1.62	1.62
Spread Duration	N/A	N/A
Avg. Maturity	1.69	1.69
Avg. Quality	Aaa	Aaa
Yield To Maturity (%)	4.38	4.38
Coupon Rate (%)	0.98	0.98
Current Yield (%)	1.04	1.04
Holdings Count	24	24

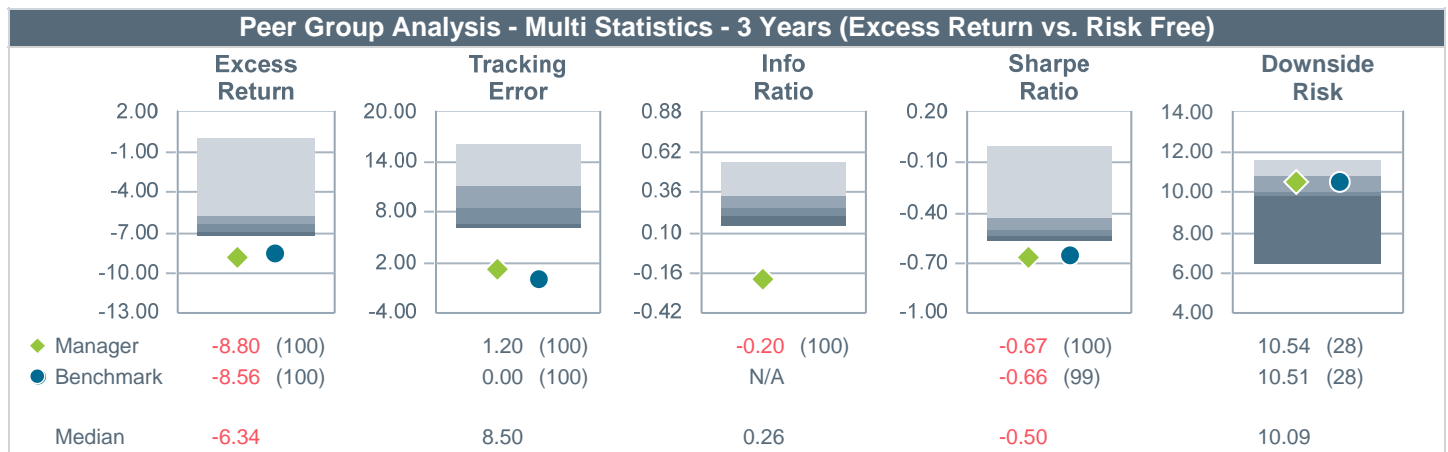
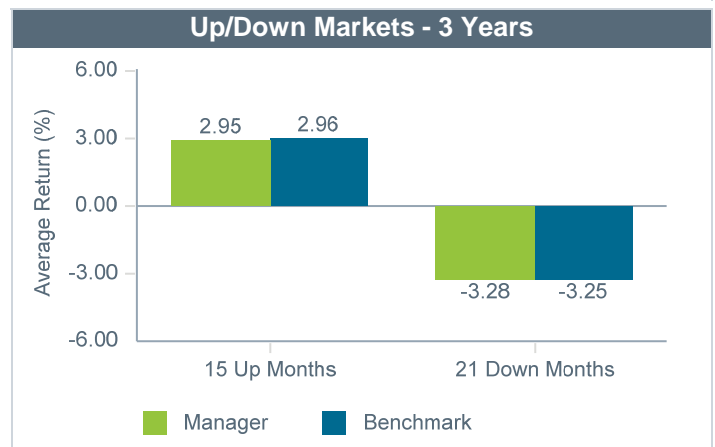
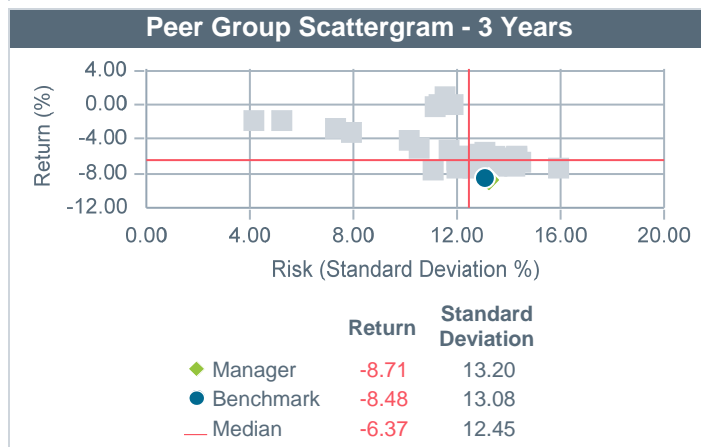


Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

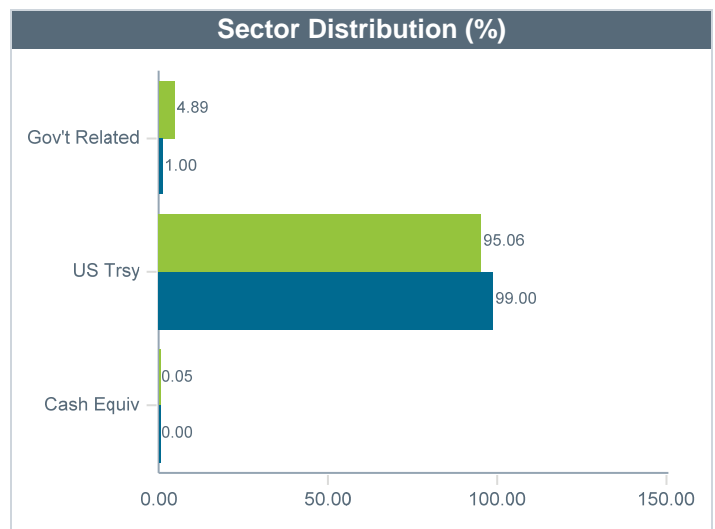
**Manager: Internal Long Duration Fixed Income Portfolio**
**As of September 30, 2022**
**Benchmark:** Bloomberg US Gov't Lng Trm Bond Index

**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	-9.60	-26.68	-8.71	N/A	N/A	N/A	-5.46	17.06	14.61	N/A	N/A
Benchmark	-9.60	-26.60	-8.48	-1.62	-0.32	0.60	-4.57	17.55	14.75	-1.79	8.53
Difference	0.00	-0.08	-0.23	N/A	N/A	N/A	-0.89	-0.49	-0.14	N/A	N/A
Peer Group Median	-8.80	-27.56	-6.37	-0.60	1.69	1.91	-1.65	17.07	20.19	-4.74	11.25
Rank	99	21	100	N/A	N/A	N/A	100	51	92	N/A	N/A
Population	58	57	56	55	50	47	61	62	65	75	77



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	15.80	16.30
Spread Duration	N/A	16.31
Avg. Maturity	22.78	23.32
Avg. Quality	Aaa	Aaa/Aa1
Yield To Maturity (%)	4.05	4.00
Coupon Rate (%)	2.29	2.54
Current Yield (%)	3.08	N/A
Holdings Count	25	99



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

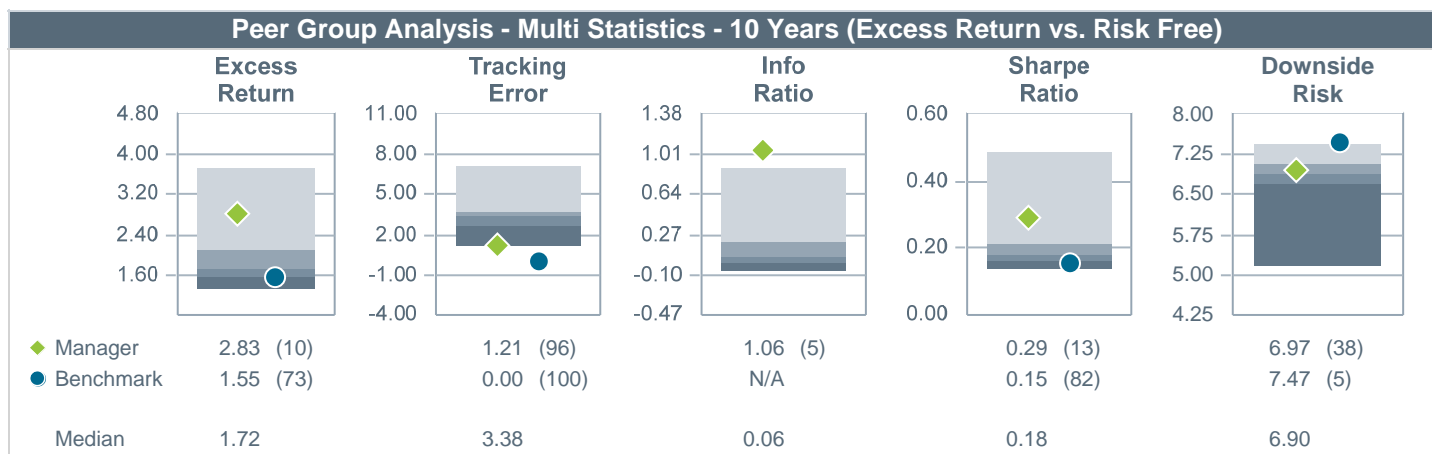
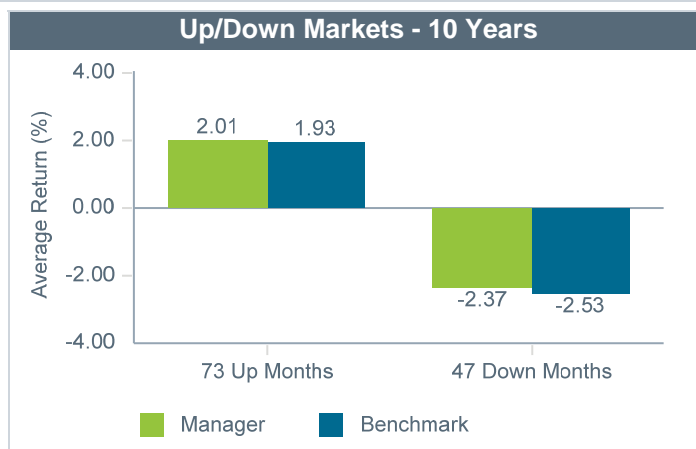
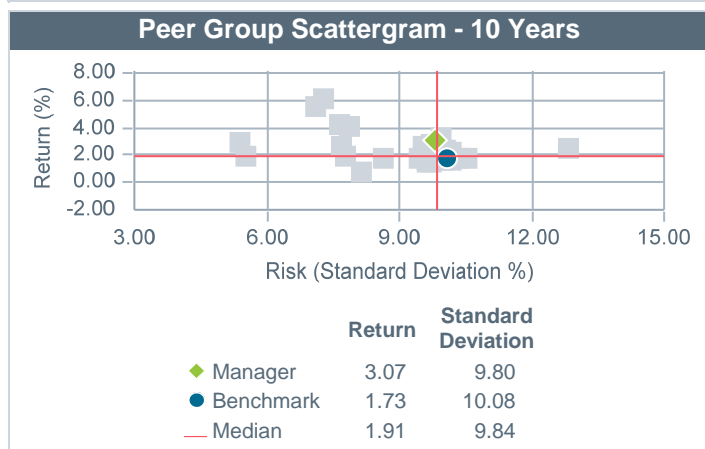
Manager: Metlife

As of September 30, 2022

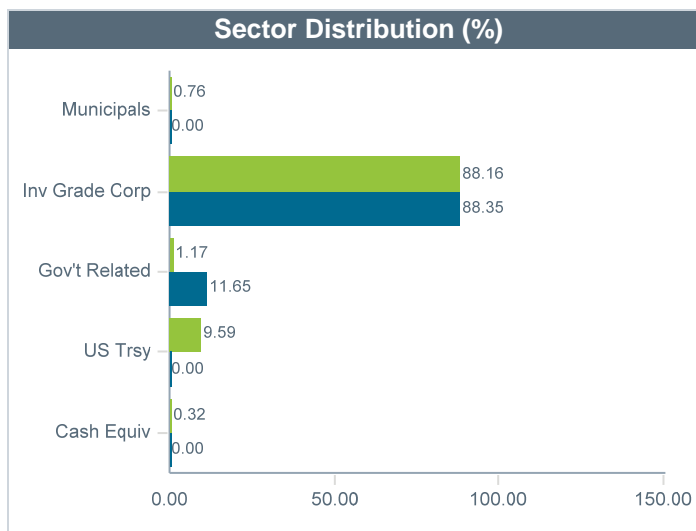
Benchmark: Bloomberg US Lng Crdt Index

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	-8.71	-27.85	-6.16	-0.34	2.82	3.07	-1.09	16.37	23.73	-5.68	13.59
Benchmark	-8.57	-27.98	-7.02	-1.17	1.67	1.73	-1.18	13.32	23.36	-6.76	12.21
Difference	-0.14	0.13	0.86	0.83	1.15	1.34	0.09	3.05	0.37	1.08	1.38
Peer Group Median	-8.80	-27.56	-6.37	-0.60	1.69	1.91	-1.65	17.07	20.19	-4.74	11.25
Rank	45	65	36	35	10	10	34	57	10	78	3
Population	58	57	56	55	50	47	61	62	65	75	77



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	13.11	12.63
Spread Duration	10.58	12.73
Avg. Maturity	21.47	23.14
Avg. Quality	A3	A3/Baa1
Yield To Maturity (%)	6.23	5.89
Coupon Rate (%)	4.72	4.40
Current Yield (%)	6.21	N/A
Holdings Count	299	3,175

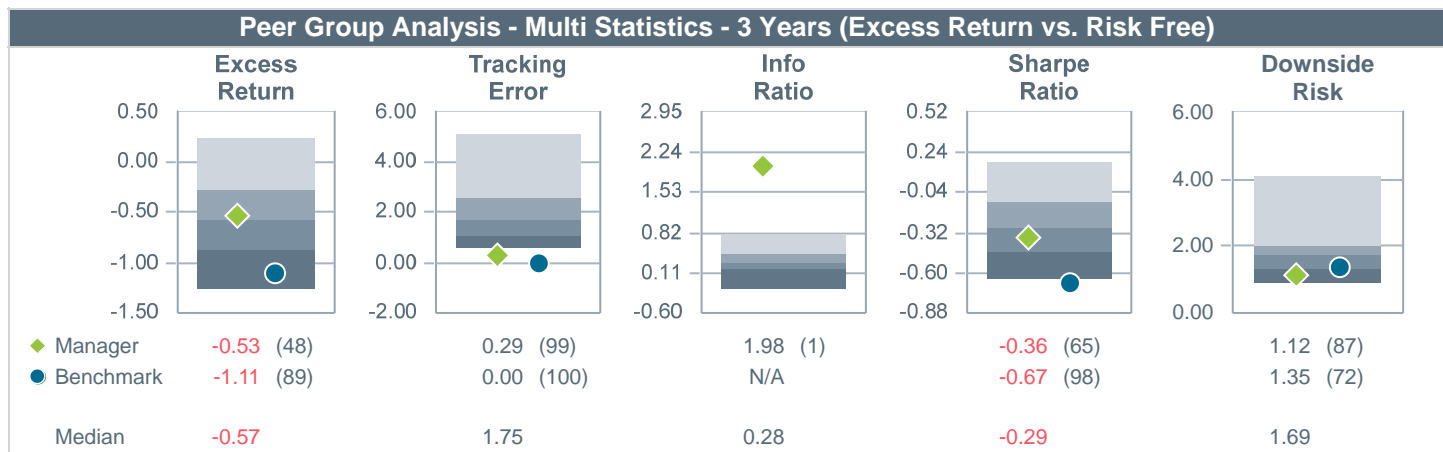
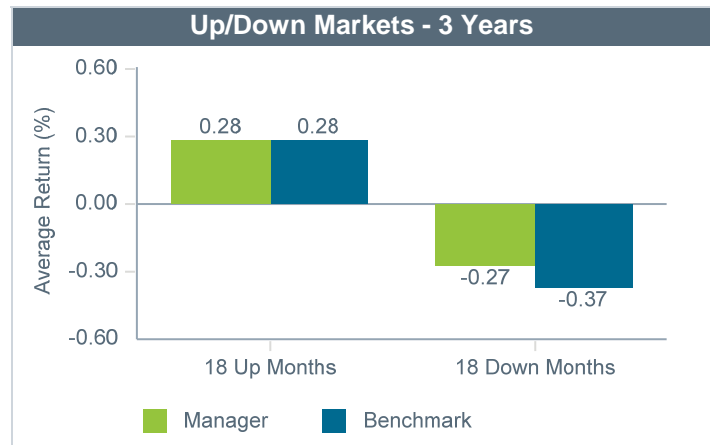
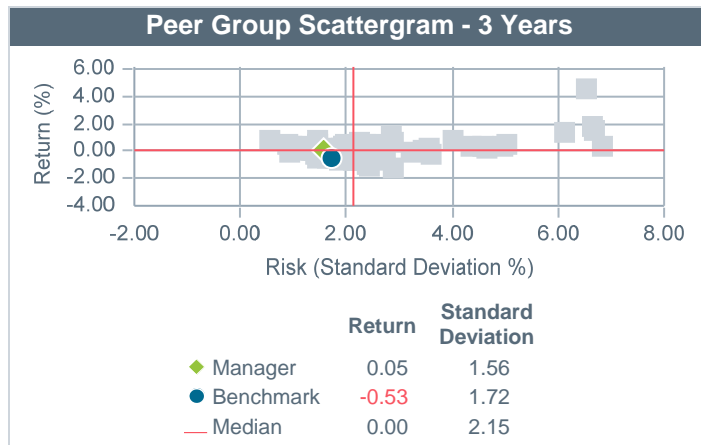


Performance shown is gross of fees and product specific prior to client inception. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

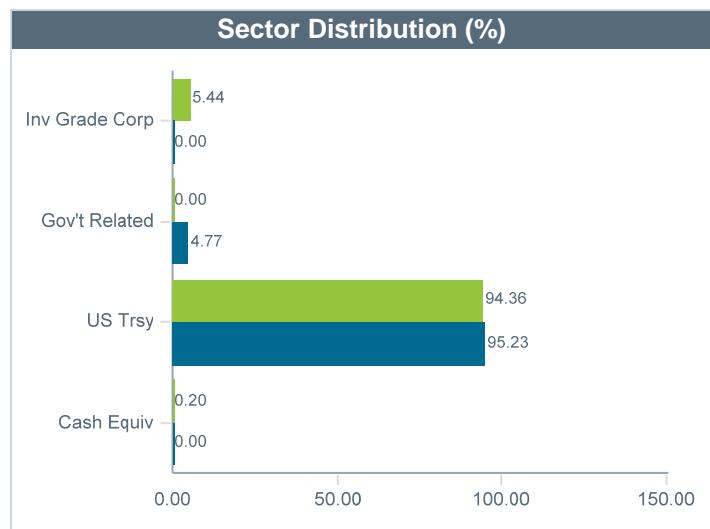


**Manager: Internal Low Duration Fixed Income Portfolio**
**As of September 30, 2022**
**Benchmark: Bloomberg US Gov't 1-3 Yr Bond Index**
**Peer Group: IM U.S. Short Duration Fixed Income (SA+CF)**

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Manager	-1.15	-3.88	0.05	N/A	N/A	N/A	-0.06	3.14	3.80	N/A	N/A
Benchmark	-1.54	-5.05	-0.53	0.54	0.55	0.60	-0.60	3.14	3.59	1.58	0.45
Difference	0.39	1.17	0.58	N/A	N/A	N/A	0.54	0.00	0.21	N/A	N/A
Peer Group Median	-1.17	-4.91	0.00	1.07	1.20	1.17	-0.20	3.92	4.53	1.67	1.52
Rank	47	20	47	N/A	N/A	N/A	40	84	85	N/A	N/A
Population	107	106	103	100	92	84	117	122	125	134	134



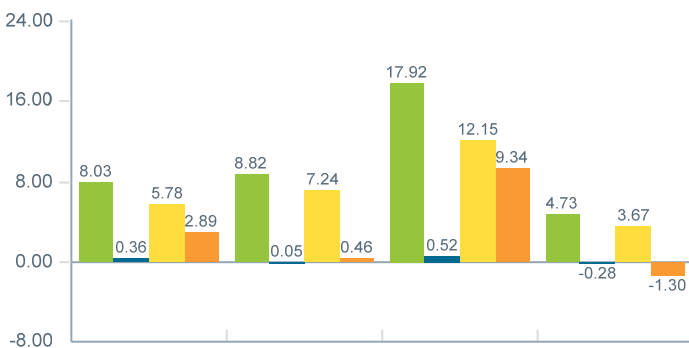
Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	1.49	1.87
Spread Duration	N/A	1.87
Avg. Maturity	1.58	1.95
Avg. Quality	Aaa	Aaa/Aa1
Yield To Maturity (%)	4.34	4.31
Coupon Rate (%)	0.98	1.64
Current Yield (%)	1.04	N/A
Holdings Count	23	355



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	1.76	12.18	2.34	3.76	5.00	N/A	0.97	-7.50	6.59	4.12	9.66
Benchmark	-0.41	-14.22	-1.58	1.20	3.64	4.56	4.91	3.59	14.41	-1.08	8.41
Difference	2.17	26.40	3.92	2.56	1.36	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	0.29
S&P 500 Index (Cap Wtd)	0.19
Russell 2000 Index	0.34
MSCI EAFE Index (USD) (Net)	0.30
MSCI Emg Mkts Index (USD) (Net)	0.32
Bloomberg US Agg Bond Index	-0.42
Bloomberg US Trsy US TIPS Index	-0.41
NCREIF ODCE Index (AWA) (Gross)	0.15
Wilshire US REIT Index	0.19
HFRI FOF Comp Index	0.36
Bloomberg Cmdty Index (TR)	0.37
ICE BofAML 3 Mo US T-Bill Index	-0.23
Cons Price Index (Unadjusted)	0.28
CS Western Euro Hi Yld Index	0.29

#### 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

September 30, 2022

Investment Policy Guidelines	Meeting Objective			Explanation
	Yes	No	N/A	Explanation
<b>1. Total Fund</b>				
Exceed the rate of inflation (C.P.I.) over a market cycle of 5-years.		✗		Wyoming returned 3.4% 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 3.4% vs. 3.0% 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
<b>2. Investment Funds</b>				
<b>a) Permanent Mineral Trust Fund</b>				
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 4.7% vs. 4.3% for the Total Fund Index
<b>b) Common School Permanent Land Fund</b>				
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 3.8% vs. 3.2% for the Total Fund Index
<b>c) Permanent Land Fund</b>				
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 4.8% vs. 4.3% for the Total Fund Index
<b>d) University Permanent Land Fund</b>				
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 5.1% vs. 4.5% for the Total Fund Index
<b>e) Hathaway Scholarship Endowment Fund</b>				
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 5.0% vs. 4.2% for the Total Fund Index
<b>f) Higher Education Endowment Fund</b>				
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 3.5% vs. 3.1% for the Total Fund Index
<b>g) Workers Compensation Fund</b>				
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 3.0% vs. 2.4% for the Total Fund Index
<b>h) Pool A</b>				
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 2.7% vs. 2.1% for the Total Fund Index
<b>i) LSRA</b>				
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.
<b>j) State Agency Pool</b>				
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 1.0% vs. 0.8% for the Actual Allocation Index

	Yes	No	N/A	Explanation
<b>3. US Equity Portfolios</b>				
<b>a) State Street Global Advisors – All Cap – Passive</b>				
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 = 7.1%
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 8.6% vs. 8.6% for the index
	Yes	No	N/A	Explanation
<b>c) Internal Domestic Equity Quantitative – Broad US Equity</b>				
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 = 8.8% vs 6.9% in the S&P 500
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-			N/A	Inception Date: 06/2021

	Yes	No	N/A	Explanation
<b>d) Van Berkom – Small Cap - Active</b>				
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-			N/A	Inception date: 03/2020
<b>e) BlackRock Small Cap – Small Cap - Active</b>				
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: Outfront Media Inc = 1.2%
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-			N/A	Inception date: 08/2020

	Yes	No	N/A	Explanation
<b>f) Internal Small Cap Quantamental – Small Cap</b>				
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 = 4.4%
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.	✓			
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-			N/A	Inception Date: 06/2021
<b>g) Internal Small Cap Quantitative – Small Cap</b>				
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: Option Care Health = 0.7%
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-			N/A	Inception Date: 11/2021

	Yes	No	N/A	Explanation
<b>4. International Equity Portfolios</b>				
<b>a) Northern Trust – Int'l – Passive</b>				
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: Nokia OYJ = 4.1%
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 -0.7% vs. -0.8% for the MSCI ACW Ex US Index (Net)
	Yes	No	N/A	Explanation
<b>b) Arrowstreet – Int'l Active</b>				
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 = 2.2%
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-			N/A	Inception date: 03/2018



	Yes	No	N/A	Explanation
<b>c) Harding Loevner – Int'l Active</b>				
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 = 3.7%
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-			N/A	Inception date: 01/2020

	Yes	No	N/A	Explanation
<b>5. Preferred Stock</b>				
<b>a) Cohen &amp; Steers</b>				
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
<b>6. MLPs</b>				
<b>a) Harvest</b>				
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>b) Harvest Passive</b>				
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
<b>7. Alternative Strategies</b>				
<b>Core Real Estate</b>				
<b>a) Clarion Lion</b>				
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 11.2% vs. 9.3% 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>b) UBS Trumbull</b>				
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 5.2% vs. 9.3% 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>c) MS Prime</b>				
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.	✓			
<b>Diversified Hedge Funds</b>				
<b>d) Grosvenor Diversified Hedge Funds</b>				
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.	✓			
<b>e) Internal Diversified Hedge Funds</b>				
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.	✓			

<b>Infrastructure</b>				
<b>f) Macquarie</b>				
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.	✓			
	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Explanation</b>
<b>8. Fixed Income Portfolios</b>				
<b>a) PIMCO – Core</b>				
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 -0.3% vs. -0.4% 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-		✗		5-year: PIMCO ranked in the 84th percentile for Core Fixed Income

	Yes	No	N/A	Explanation
<b>b) Internal Int. Govt Fixed Income Portfolio – Core</b>				
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 -0.4% vs. return of -0.6% 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 55th percentile for Government Fixed Income

	Yes	No	N/A	Explanation
<b>c) Payden &amp; Rygel – Core</b>				
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
<b>d) JPM MBS – Core</b>				
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
<b>e) Credit Suisse – Bank Loans</b>				
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-			N/A	Inception date: 09/2019
	Yes	No	N/A	Explanation
<b>f) Octagon – Bank Loans</b>				
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-			N/A	Inception date: 09/2019



	Yes	No	N/A	Explanation
<b>g) KKR – Bank Loans</b>				
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-			N/A	Inception date: 10/2021

	Yes	No	N/A	Explanation
<b>h) Grosvenor Silvery Lupine Fund – Opportunistic Fixed Income</b>				
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 3.8% vs 1.2% for the index
	Yes	No	N/A	Explanation
<b>i) Global Evolution – Emerging Market Debt (Local Currency)</b>				
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-			N/A	Inception date: 02/2020

	Yes	No	N/A	Explanation
<b>j) Global Evolution – Emerging Market Debt (Hard Currency)</b>				
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-			N/A	Inception date: 12/2020

	Yes	No	N/A	Explanation
<b>k) Eaton Vance – Emerging Market Debt</b>				
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-			N/A	Inception date: 01/2021

	Yes	No	N/A	Explanation
<b>I) Goldman Sachs – Emerging Market Debt (Corporate)</b>				
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-			N/A	Inception date: 03/2020

	Yes	No	N/A	Explanation
<b>m) Finisterre – Emerging Market Debt</b>				
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-			N/A	Inception date: 03/2021

	Yes	No	N/A	Explanation
<b>n) Wellington – Emerging Market Debt</b>				
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-			N/A	Inception date: 09/2021

	Yes	No	N/A	Explanation
<b>o) Metlife – Long Duration Credit</b>				
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-			N/A	Inception date: 11/2018
	Yes	No	N/A	Explanation
<b>p) Internal Long Duration – Long Duration Government</b>				
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-			N/A	Inception date: 01/2019



	Yes	No	N/A	Explanation
<b>q) Internal Low Duration – Low Duration Government</b>				
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-			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
<b>9. Cash and Cash Equivalents Portfolios</b>				
<b>JP Morgan Cash Composite*</b>				
<b>a) JP Morgan Treasury Cash</b>				
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.		✗		5-year: JP Morgan Treasury Cash net of fees return was 1.0% vs. 1.1% for the ICE BofAML 3 Mo US T-Bill Index

\*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
<b>JP Morgan Wyo-Star Cash Composite*</b>				
<b>b) JP Morgan Wyo-Star Cash</b>				
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.		✗		5-year: JP Morgan Wyo-Star Cash net of fees return was 1.0% vs. 1.1% for the ICE BofAML 3 Mo US T-Bill Index
<b>c) JP Morgan Wyo-Star Extended Cash</b>				
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 0.7% vs. 0.5% 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 Lvg'd Loan Index through 06/30/2021, and the S&P LSTA US Lvg'd 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".



## Wyoming State Treasurer's Office Addendum

As of September 30, 2022

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.

## 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&amp;P</u>	<u>Moody's</u>	<u>Explanation</u>	<u>S&amp;P</u>	<u>Moody's</u>	<u>Explanation</u>
<b>Higher Credit Quality – Investment Grade</b>			<b>Lower Credit Quality – Below Investment Grade</b>		
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., 1<sup>st</sup> quartile, 2<sup>nd</sup> quartile, 3<sup>rd</sup> quartile, and 4<sup>th</sup> quartile). The median observation is where the 2<sup>nd</sup> quartile and 3<sup>rd</sup> 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.

## Glossary

- 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

## Glossary

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 4<sup>th</sup> 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.

## Glossary

**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 Funds of Funds	5
US SMid Cap Equity	85		
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.



## Glossary

**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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