



Quarterly Investment Performance Analysis

Wyoming State Treasurer's Office

Period Ended: March 31, 2019



RVK Honored to Receive 2ND Greenwich *Quality Leader* Award

- In 2018, Greenwich Associates* conducted interviews with 1,128 senior professionals of large plan sponsors and ranked opinions of their investment consulting relationships on a series of key metrics, including, but not limited to:
 - Understanding of Client Goals and Objectives
 - Advice on Long-term Asset Allocation and Liability Issues
 - Proactive Advice and Innovative Ideas
 - Credibility with Boards and/or Investment Committees
 - Knowledge of Investment Managers
 - Advice on DC Plan Structure and Design
 - Client Satisfaction with Manager Recommendations
 - Responsiveness to Client Requests and Needs
 - Competitive Fees
- For a 2nd consecutive year, RVK is 1 of 3 firms among large US consultants to receive this award.



**As a valued client, we are humbled by your continued confidence and thankful for your support.
From all of us here at RVK, thank you for the opportunity to serve you!**

*Greenwich Associates is the leading provider of global market intelligence and advisory services to the financial services industry. They conduct an annual survey of institutional investors whereby approx. 1,100 respondents rank their respective investment consulting relationships on key metrics on a scale from 1 (poor) to 5 (excellent). The award is based upon Greenwich Associates' 2018 US Institutional Investors study.



Memorandum

To	Wyoming State Loan and Investment Board
From	RVK, Inc.
Subject	Investment Performance Analysis Commentary
Date	March 31, 2019

Outlined below please find a summary of significant observations regarding performance of the State's Funds for the period ended March 31, 2019. We hope this summary will facilitate your review of our Investment Performance Analysis Report.

The Total Fund returned 4.5% net of fees during the first quarter as risk assets produced positive returns. Long-term performance for the Total Fund remains strong, with the State earning returns of 4.4% and 6.3% per annum over the trailing seven- and ten-year periods.

Absolute results were positive for all of the State's investment pools, with all nine keeping pace with, or modestly trailing, their respective benchmarks during the quarter. The State's non-permanent funds with larger strategic allocations to fixed income investments generated lower returns on an absolute basis, but modestly higher returns on a relative basis, compared to the State's permanent funds.

The Bloomberg US Aggregate Bond Index increased by 2.9%, aided by US Treasury rates declining across all maturities in the first quarter. Diversification away from core US bonds modestly contributed to relative results as credit, EMD, TIPS, and long duration outperformed the broad market, while intermediate government and low duration underperformed. The State's core fixed income managers slightly underperformed the broad market index, collectively returning 2.6%. Credit fixed income modestly trailed its benchmark while emerging markets debt modestly outperformed its benchmark.

US equity markets delivered positive returns across all market capitalizations and styles during the first quarter. Major US equity indices finished the quarter in positive territory, with the Russell 3000 Index returning 14.0% for the quarter. The State's US equity composite returned 13.9% during the first quarter, keeping pace with the broad market index. State Street All Cap modestly underperformed the broad market index by 0.3%.

Developed international markets slightly outperformed emerging markets during the quarter, with the MSCI EAFE Index returning 10.0% and the MSCI Emerging Markets Index returning 9.9%. The State's international equity composite returned 11.0% during the quarter, outperforming the MSCI

PORTLAND OFFICE
1211 SW 5th Avenue
Suite 900
Portland, Oregon 97204
MAIN 503.221.4200

CHICAGO OFFICE
30 N LaSalle Street
Suite 3900
Chicago, Illinois 60602
MAIN 312.445.3100

NEW YORK OFFICE
1 Penn Plaza
Suite 2128
New York, New York 10119
MAIN 646.805.7075



ACW Ex US Index by 0.7%. Passively managed strategies within the State's international equity portfolio kept pace with their respective benchmarks, while Fisher and Arrowstreet outperformed their respective benchmarks by 3.1% and 0.6%, respectively.

Mixed assets, including preferred stock, MLPs, and convertible bonds, generated strong absolute returns during the quarter. Cohen & Steers returned 7.2% and underperformed its benchmark by 0.8%. Harvest returned 21.1% as MLPs rebounded sharply in the first quarter. Allianz, the State's convertible bonds manager, generated a return of 11.2%, outperforming its benchmark by 1.1%.

Core real estate continued a trend of delivering modest, positive returns. The capital appreciation component of returns decreased slightly from the prior quarter, but the income component remains in line with historical levels. The State's core real estate composite earned 1.2% in the first quarter, keeping pace with the NCREIF ODCE Index.

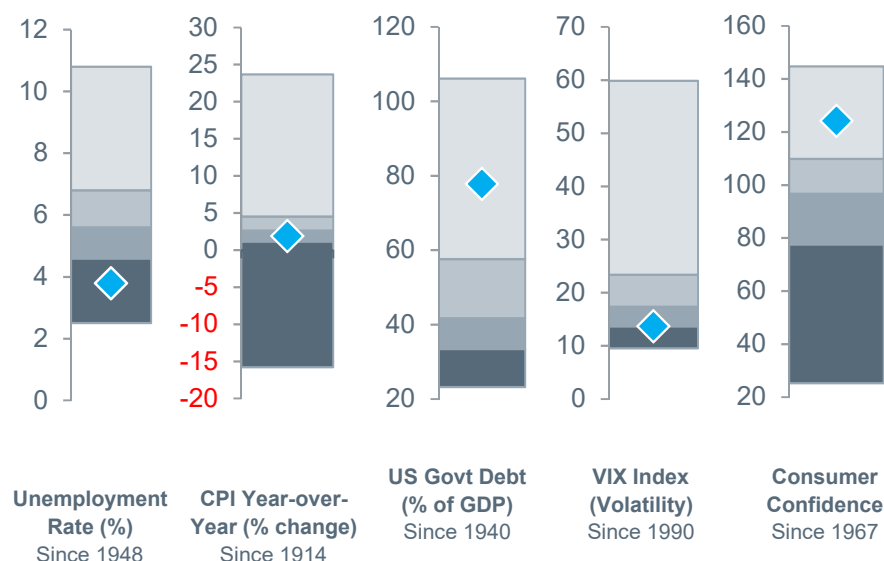
Diversified hedge funds returned 1.7% during the quarter, trailing the HFRI FOF Composite Index by 2.9%. Grosvenor Diversified Hedge Funds and Internal Diversified Hedge Funds returned 2.0% and 1.8%, respectively. The PAAMCO - Jackalope Fund returned -0.3% during the quarter, also trailing the index.

First Quarter Economic Environment

Key Economic Indicators

Risk assets and fixed income markets performed well over the first quarter, largely driven by a more accommodative stance by the Federal Open Market Committee ("FOMC"). The global equity market, as represented by the MSCI All Country World Index, rose over 12% during the quarter, while fixed income markets benefited from the shift in interest rate expectations. Volatility markets also declined back to record low levels on the message of greater accommodation by the FOMC. Positive returns were generated despite declining growth forecasts in Asia and Europe, weak global inflation, market uncertainty caused by geopolitical risks, such as Brexit, and global markets destabilized by ongoing trade wars. At its March meeting, the FOMC maintained policy rates in the range of 2.25% to 2.50%. Interest rates declined notably over the period amidst signs of weakness in economic growth and a continued lack of inflationary pressure. During the quarter, the 10-year nominal Treasury yield fell to 2.39%, a level not seen since 2017, while the yield curve continued to flatten and even invert across certain maturities. However, the labor market hasn't reflected recessionary fears as US employment remains at record levels.

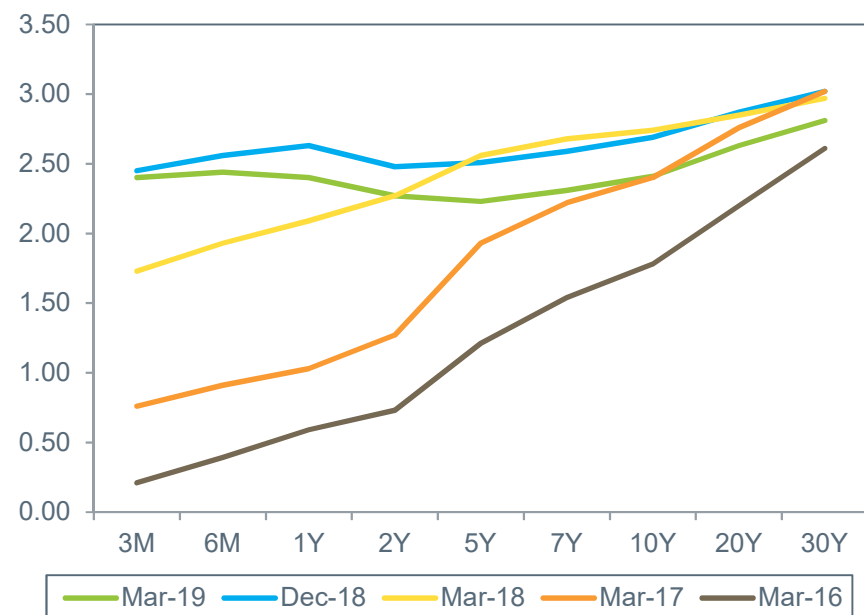
Key Economic Indicators



Economic Indicators	Mar-19	Dec-18	Mar-18	Mar-16	20 Yr
Federal Funds Rate (%)	2.43 ▲	2.40	1.68	0.25	1.91
Breakeven Infl. - 5 Yr (%)	1.79 ▲	1.49	2.04	1.51	1.86
Breakeven Infl. - 10 Yr (%)	1.87 ▲	1.71	2.06	1.63	2.03
CPI YoY (Headline) (%)	1.9 —	1.9	2.4	0.9	2.2
Unemployment Rate (%)	3.8 ▼	3.9	4.0	5.0	5.9
Real GDP YoY (%)	3.2 ▲	3.0	2.6	1.6	2.2
PMI - Manufacturing	55.3 ▲	54.3	59.3	51.2	52.8
USD Total Wtd Idx	92.07 ▲	91.79	86.37	89.72	86.26
WTI Crude Oil per Barrel (\$)	60.1 ▲	45.4	64.9	38.3	60.6
Gold Spot per Oz (\$)	1,292 ▲	1,282	1,326	1,233	892

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	13.65	13.65	9.50	10.91	15.92
Russell 2000	14.58	14.58	2.05	7.05	15.36
MSCI EAFE (Net)	9.98	9.98	-3.71	2.33	8.96
MSCI EAFE SC (Net)	10.65	10.65	-9.36	4.47	12.76
MSCI Emg Mkts (Net)	9.93	9.93	-7.41	3.68	8.95
Bloomberg US Agg Bond	2.94	2.94	4.48	2.74	3.77
ICE BofAML 3 Mo US T-Bill	0.60	0.60	2.12	0.74	0.43
NCREIF ODCE (Gross)	1.42	1.42	7.52	10.18	8.74
FTSE NAREIT Eq REIT (TR)	16.33	16.33	20.86	9.12	18.28
HFRI FOF Comp	4.63	4.63	0.15	2.20	3.55
Bloomberg Cmtty (TR)	6.32	6.32	-5.25	-8.92	-2.56

Treasury Yield Curve (%)



First Quarter Review

Broad Market

US equity markets rebounded strongly during the first quarter, with all major indices across size and style finishing in positive territory. The S&P 500 Index returned 13.6% during the quarter, marking its best quarterly return since the third quarter of 2009, and the best first quarter return since 1998.

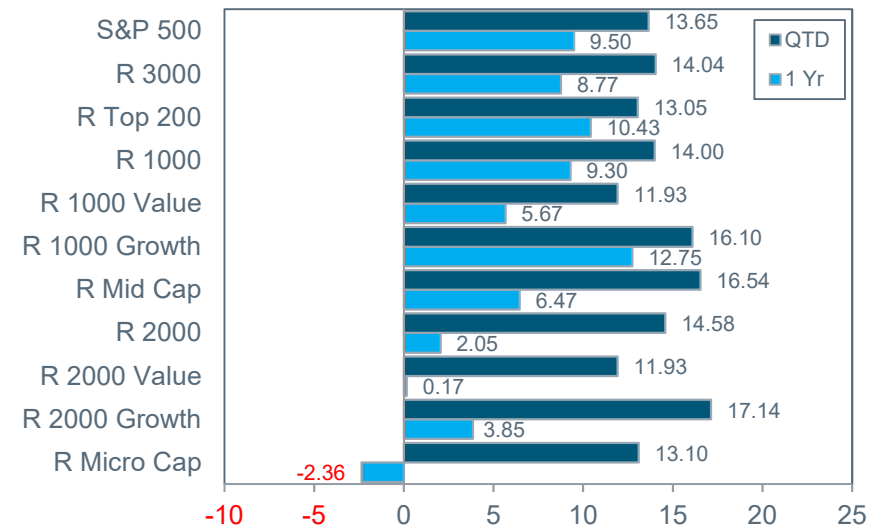
Market Cap

Smaller-capitalization stocks outpaced their large-cap counterparts, but the mid-cap segment provided the highest returns.

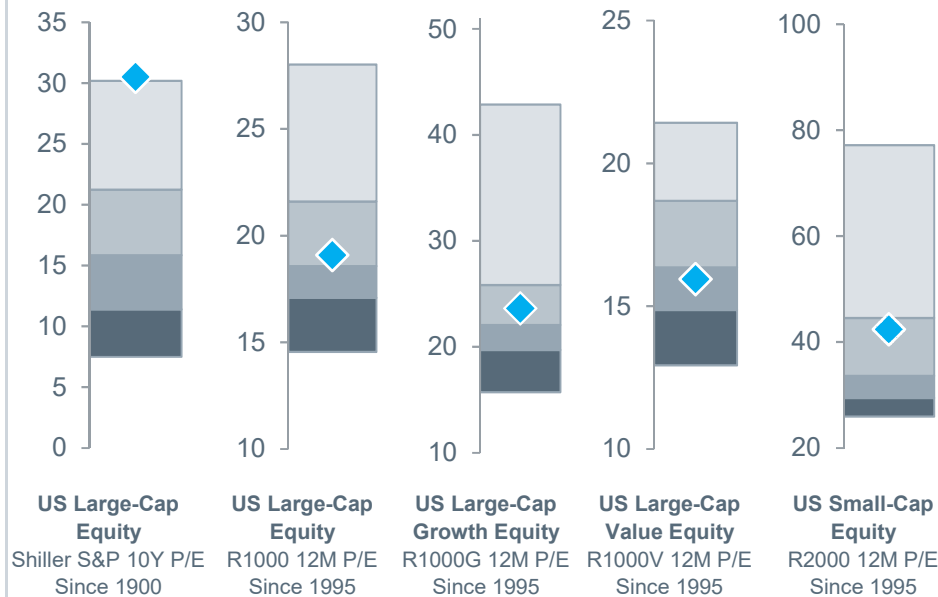
Style and Sector

Returns were positive across all sectors during the quarter, led by technology as the S&P 500 Information Technology Index returned 19.9%. Large- and small-cap growth managers fared moderately well, despite a rally in biotechnology, buoyed by strong performance across broad growth-focused sectors.

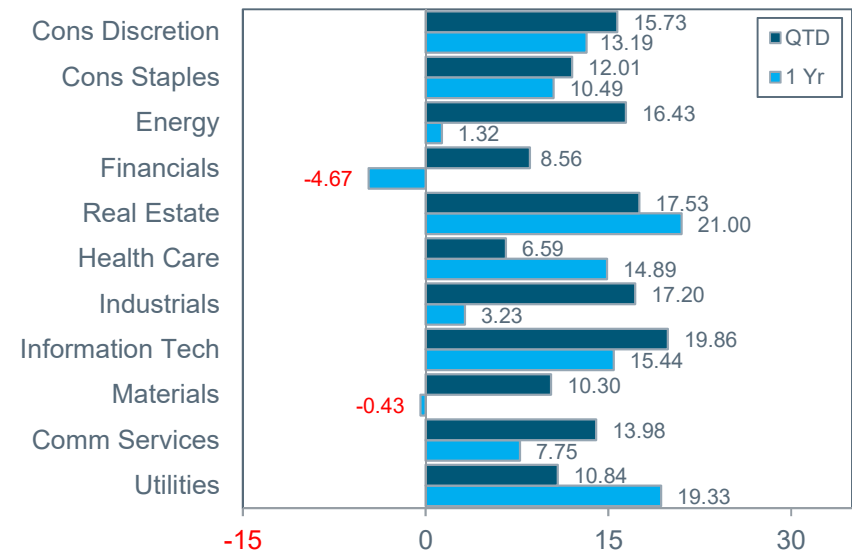
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



First Quarter Review

Developed Markets

Developed international markets generated positive returns during the quarter, but did not keep pace with the strong US equity returns. The positive returns from developed markets were generated despite the continued economic slowdown in Europe.

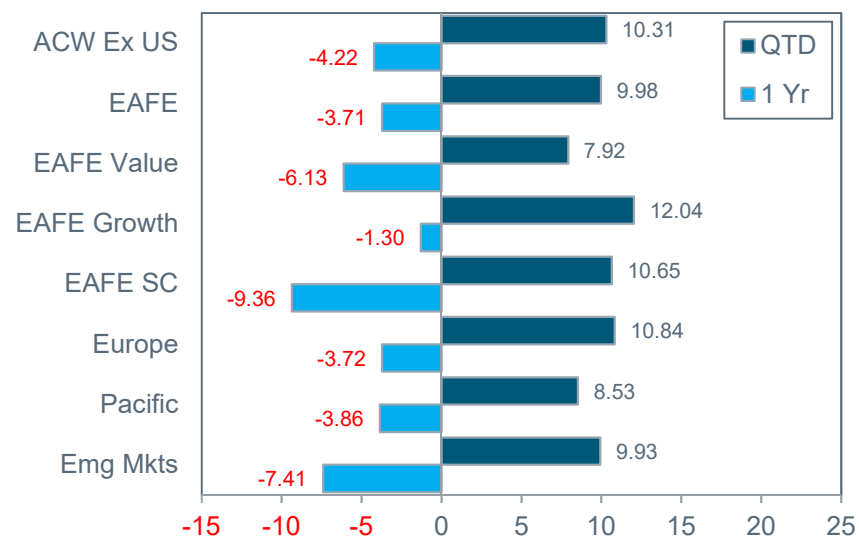
Emerging Markets

The emerging markets finished the quarter with similar returns as developed international markets. China was a key driver of emerging market equity returns as it generated the highest return among emerging market countries. This positive quarterly result occurred despite weakening economic growth in China and the ongoing trade dispute with the US.

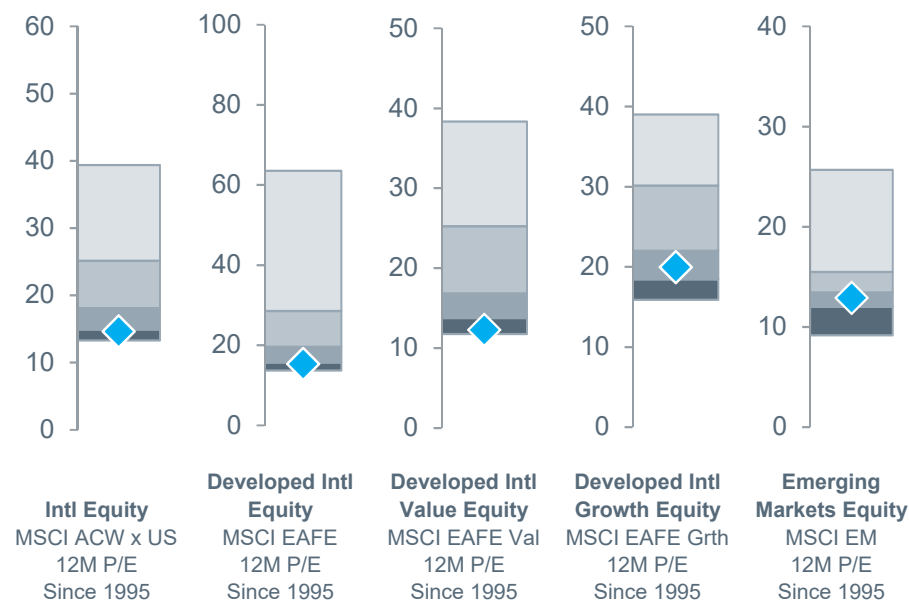
Market Cap & Style

Growth stocks significantly outperformed value stocks. Additionally, small cap outperformed large cap in developed international markets, but emerging markets large cap stocks broadly outperformed the stocks of smaller companies.

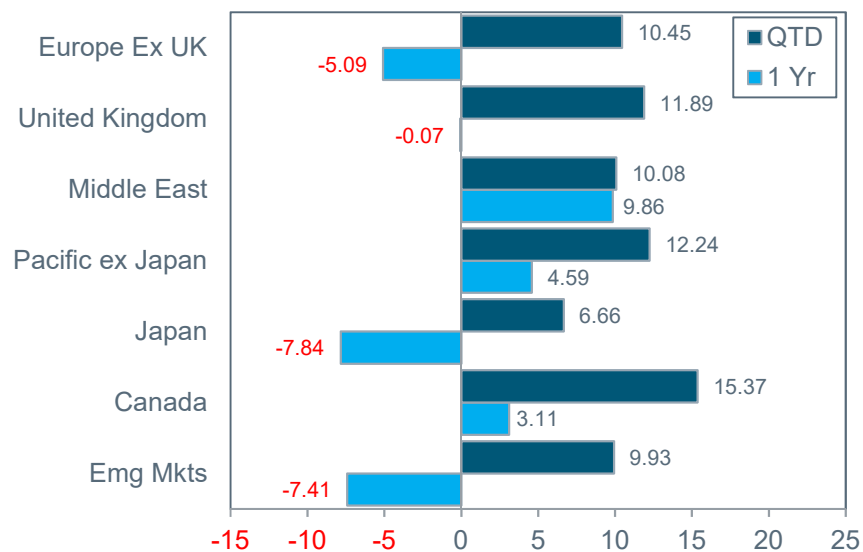
MSCI Style and Capitalization Market Performance (%)



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.

First Quarter Review

Broad Market

Aided by US Treasury rates declining across all maturities, the Bloomberg US Aggregate Index began the year strong, returning 2.9% for the quarter. While the rate decline was marginal at the shortest maturities, those dated one-year and longer fell between 0.21% and 0.28% in near-uniform fashion, exacerbating both the flattening and inverting trends of the yield curve. At quarter end, the one-month T-bill had a higher yield than Treasury securities between one- and ten-years.

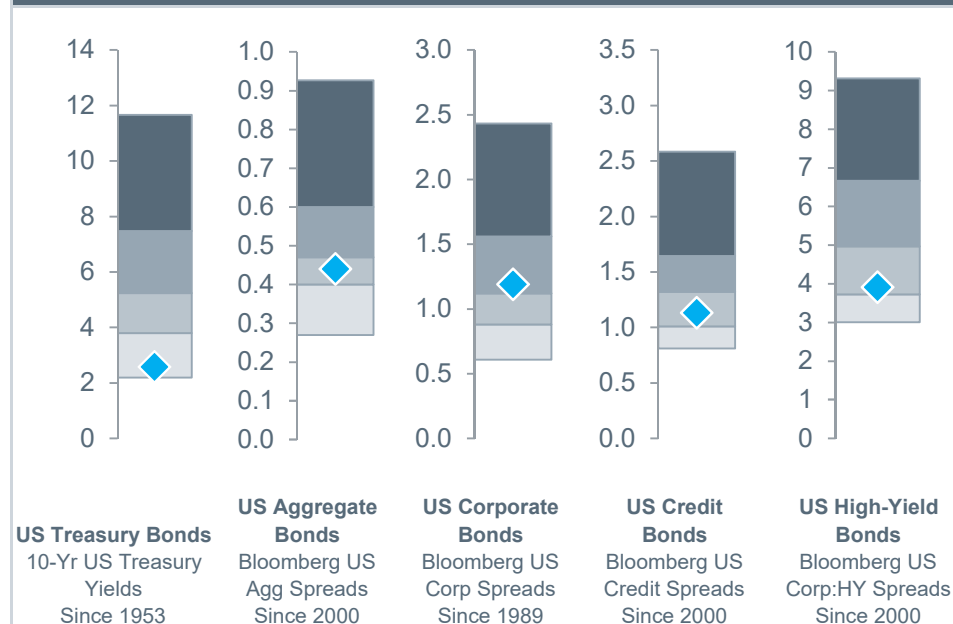
Credit Market

As investors returned to their risk-on sentiment, corporate spreads tightened after a brief widening in the fourth quarter to help boost returns in the sector. Lower-rated debt was particularly positive, with the ICE BofAML US High Yield Master II Index returning 7.4%.

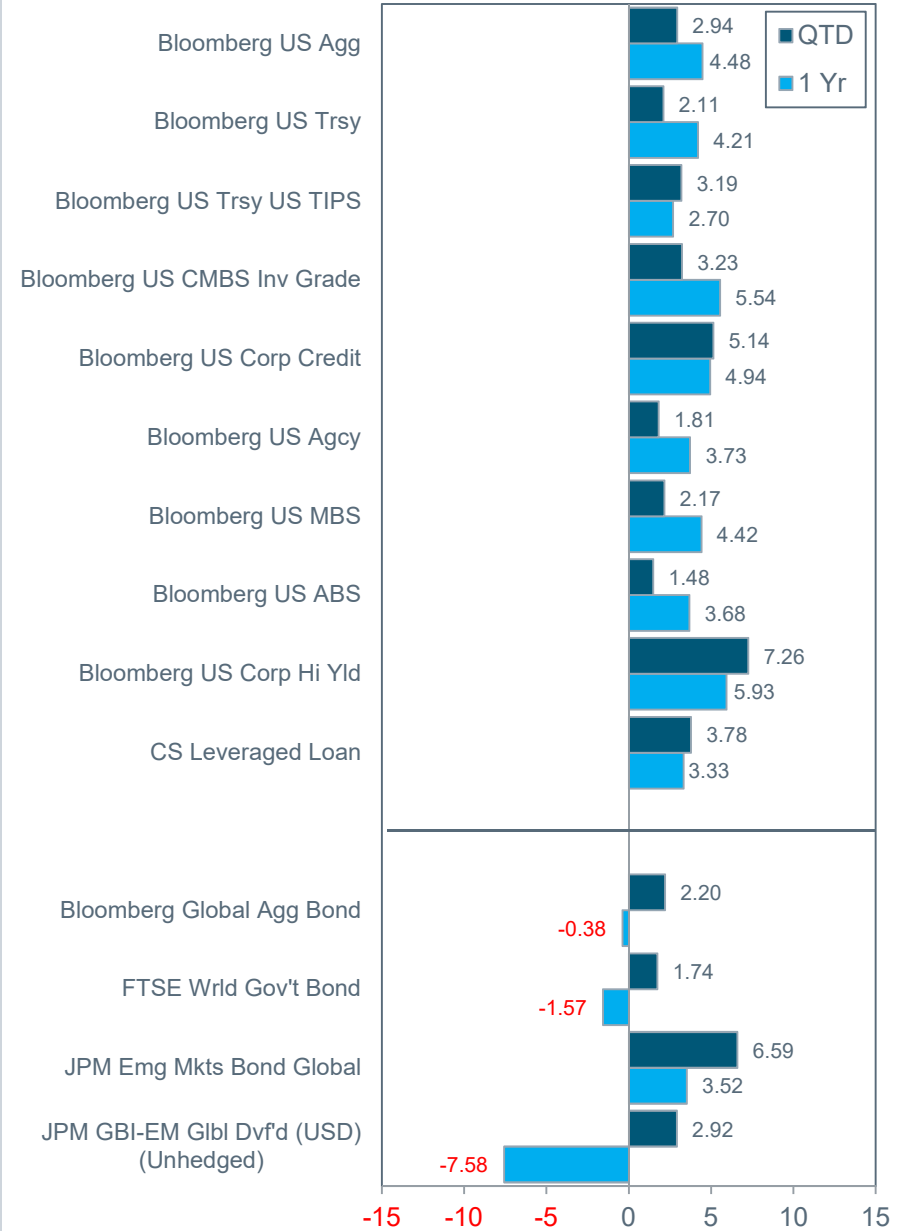
Emerging Market Debt

While a strengthening dollar dampened local currency returns, the JPM GBI-EM Global Diversified Index still managed a 2.9% return for the quarter.

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.

First Quarter Review - Absolute Return

General Market - Hedge Funds

The first quarter of 2019 began on a positive note for the hedge fund industry, with each of the major strategy groups posting positive returns. The HFRI Fund Weighted Composite Index produced a return of 5.7%, its best result since the third quarter of 2009, largely driven by gains within the Long/Short Equity universe ("ELS"). The HFRI Asset Weighted Composite Index, which is more balanced across hedge fund strategies, realized a more muted return of 3.1%.

General Market - Global Tactical Asset Allocation (GTAA)

Most GTAA managers reported positive returns during the first quarter, though still underperformed a blend of 60% US equity and 40% US fixed income given the strong equity market returns. The positive absolute performance across managers is a reversal from the negative returns generated in 2018 and, more specifically, the fourth quarter. Performance across GTAA managers varied during the quarter, as the strongest performers held higher allocations to US equity and credit sensitive fixed income.

First Quarter Review - Real Assets

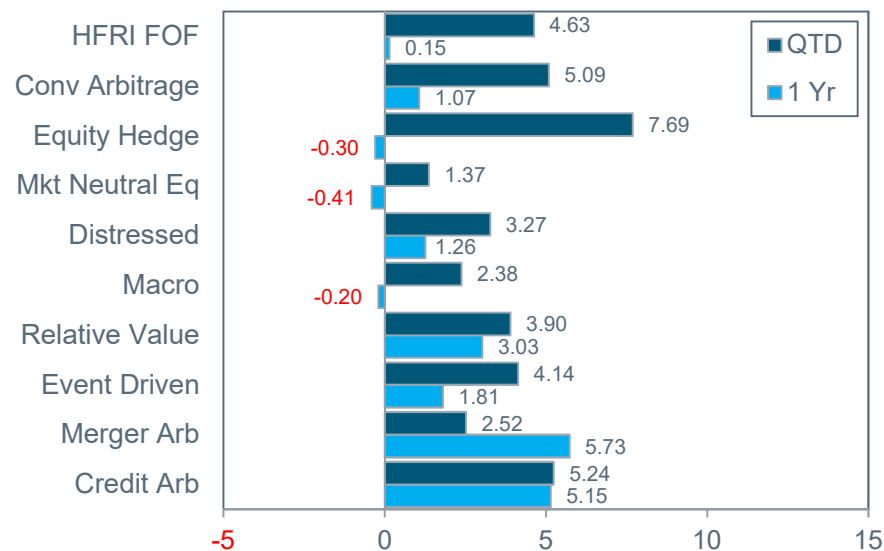
General Market - Diversified Inflation Strategies (DIS)

Most DIS managers provided strong returns during the first quarter. Performance across managers ranged widely and was bifurcated. The best performing DIS managers generally held significantly larger allocations to asset classes such as REITs, natural resource equities, global listed infrastructure, and commodities, which all rebounded during the first quarter. DIS managers that trailed peers, though still providing positive returns, held larger exposure to inflation linked securities such as TIPS.

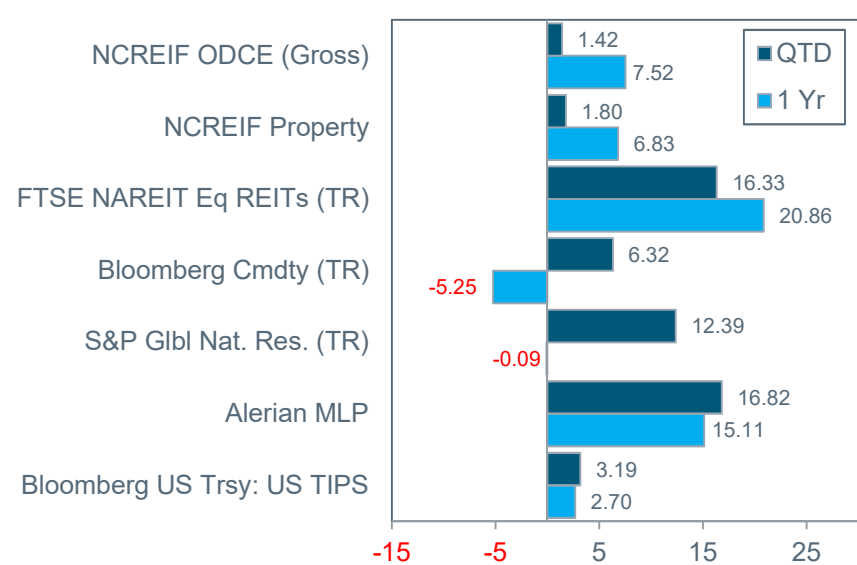
General Market - Real Estate

Core private real estate returned 1.4% during the first quarter, as tracked by the NCREIF-ODCE Index, with the total return comprised of 1.0% income and 0.4% price appreciation. Investors in publicly traded real estate significantly outperformed their private market counterparts during the first quarter. Publicly traded real estate experienced a snap-back from its negative performance in 2018. The first quarter total return was 16.7%, as measured by FTSE/NAREIT All REITs Index.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)



Annual Asset Class Performance

As of March 31, 2019

Calendar Year Performance												Annualized Statistics (01/2006 - 03/2019)			
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	CYTD (As of 03/19)		Return	Standard Deviation	Sharpe Ratio
<div>Best</div> <div>↑</div> <div>↓</div> <div>Worst</div>	78.79	35.17	15.99	18.64	38.82	14.07	15.02	21.95	27.19	12.32	18.75	US Equity Custom Index - US All Cap	8.55	14.24	0.56
	49.13	26.85	14.47	16.83	32.39	13.88	13.33	21.31	21.83	8.35	14.58	S&P 500 Index - US Large Cap	8.65	14.17	0.57
	45.12	21.74	14.26	16.76	32.39	13.69	5.65	13.11	21.13	6.72	14.04	Rusell 2000 Index - US Small Cap	7.90	18.96	0.43
	45.01	16.77	11.11	16.35	29.75	12.50	5.47	12.74	17.52	1.87	13.65	International Equity Custom Index - International	3.35	16.98	0.21
	32.46	16.36	7.84	16.00	24.96	11.82	1.38	11.96	15.21	0.18	10.31	Cambridge US PE Index - Private Equity	11.76	9.55	1.09
	27.17	15.68	3.49	16.00	21.08	11.22	0.55	10.69	14.65	0.01	10.17	NCREIF ODCE Index - Core Real Estate	6.90	8.08	0.72
	26.46	15.06	2.11	14.96	15.29	9.42	0.48	10.44	13.70	-0.59	8.02	NCREIF Property Index - Value-Added Real Estate	7.63	6.05	1.06
	26.46	15.06	2.11	13.36	13.94	7.66	0.18	9.94	9.11	-4.02	4.86	HFRI FOF Comp Index	2.36	5.09	0.24
	21.98	14.99	0.66	10.94	10.98	5.97	-0.27	8.77	7.77	-4.25	4.63	ICE BofAML All Cnvrts Index (All Qual) - Convertibles	7.60	11.75	0.58
	13.41	13.11	-1.16	10.77	8.96	4.89	-1.47	7.97	7.62	-4.38	2.94	S&P U.S. Preferred Stock Index	4.97	16.82	0.30
	11.47	10.82	-1.75	10.54	4.22	3.37	-3.24	4.50	6.96	-5.24	2.92	S&P MLP Index (TR)	7.90	18.95	0.43
	5.93	9.28	-4.18	4.95	0.12	2.95	-4.41	2.65	5.20	-6.21	1.80	Bloomberg US Agg Bond Index - Fixed Income	4.09	3.15	0.91
	1.17	6.54	-5.18	4.79	-0.17	0.18	-5.66	1.94	3.54	-11.01	1.42	Credit Custom Index - Fixed Income	5.32	6.51	0.64
	-16.85	5.70	-5.72	4.21	-2.02	-3.87	-14.92	0.51	0.84	-11.67	0.67	JPM GBI-EM Gbl Dvf'd Index (USD) - EMD	4.81	12.41	0.35
	-29.76	0.73	-13.71	0.26	-8.98	-5.72	-35.07	0.38	-5.58	-14.20	0.00	JP Morgan Cash Custom Index - Cash Equiv	1.53	0.56	1.26

The Cambridge US Private Equity Index is shown for informational purposes only. Due to availability of data, current quarter performance assumes a 0.00% return. Calculations are based on a quarterly periodicity.



ASSET CLASS SUMMARY

US Equity: The **US Equity** structure employs a core-satellite approach, which gains passive, low-cost beta exposure at its core and active management only where the highest conviction strategies can add value – All Cap. The core component of the portfolio utilizes passive management coupled with low beta, minimum volatility strategies that are intended to outperform a market-capitalization weighted index at a similar absolute risk level. Active management in the All Cap space provides investment managers the flexibility to adjust for valuations across market capitalizations. The single Small Cap investment manager is an exchange-traded fund designed to track the Small Cap market benchmark.

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, while Non-Core Real Estate investments allow the portfolio to take advantage of real estate market fundamentals. Recent commitments within Non-Core Real Estate have added global diversification through European-focused investments.

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.

Convertible Bonds: The **Convertible Bonds** portfolio consists of a single, specialized investment manager. The portfolio focuses on convertible issuers that demonstrate the ability to improve fundamental characteristic and attempts to participate in the majority of the upside, while limiting the downside of the underlying equity to nearly half.

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 a single, specialized investment manager. The portfolio 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. The Internally Managed Portfolio also provides liquidity and safety of capital. Treasury Inflation Protected Securities (“TIPS”) provide passive protection against expected changes in inflation. The satellite portfolios serve as dedicated specialists. Credit Fixed Income provides diversification from traditional fixed income investments and the potential for enhanced return. The custom credit portfolios are largely driven by allocations to bank loans, high yield fixed income securities, and investment grade credit. Investments in Emerging Market Debt (Local Currency) diversify US Dollar exposure and provide opportunities to capitalize on global growth trends. Opportunistic Fixed Income is employed to capitalize on severe 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.

US Equity Custom Index: The **US Equity Custom Index** consists of the S&P 500 Index (Cap Wtd) through September 2014 and the Russell 3000 Index thereafter.

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 USA Minimum Volatility Index.

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.

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.

FTSE All World Ex US: The **FTSE All World Ex US Index** is a free float-adjusted market capitalization weighted index that is comprised of large- and mid-cap stocks providing coverage of Developed and Emerging Markets excluding the US. The index is derived from the FTSE Global Equity Index Series (GEIS), which covers 98% of the world's investable market capitalization.

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.

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.

ICE BofAML All Convertibles: The **ICE BofA Merrill Lynch All Convertibles Index (All Qualities)** is a market capitalization-weighted index of domestic corporate convertible securities that are convertible to common stock.

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 36 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.

C.S. McKee Custom Index: The **C.S. McKee Custom Index** consists of the Bloomberg US Agg Bond Index through January 2018 and the Bloomberg US Agg Int Index thereafter.

PIMCO Custom Index: The **PIMCO Custom Index** consists of the Bloomberg US Agg Bond Index through February 2018 and the Bloomberg US Agg Int Index thereafter.

Credit Custom Index: The **Credit Custom Index** consists of 20% Bloomberg US Credit Index, 20% ICE BofA Merrill Lynch US High Yield Master II Constrained Index, and 60% S&P/LSTA Leveraged Loan 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.

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.

JPMorgan GBI-EM Gbl Dv'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.

Bloomberg US Trsy: US TIPS: The **Bloomberg US Treasury: US TIPS Index** is an unmanaged index that consists of inflation-protected securities issued by the US Treasury.

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.

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 Performance

	Allocation		Performance (%)							
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Total Fund	21,008,569,986	100.0	4.5	4.5	3.0	3.3	4.9	4.0	4.4	6.3
Wyoming State Actual Allocation Index			4.6	4.6	3.2	3.7	4.6	4.0	4.4	5.8
Difference			-0.1	-0.1	-0.2	-0.4	0.3	0.0	0.0	0.5
Permanent Funds	15,254,155,411	72.6	5.4	5.4	2.9	3.3	5.8	4.5	5.3	7.3
Non-Permanent Funds	5,754,414,575	27.4	2.4	2.4	3.0	3.1	2.4	2.4	2.2	3.8

Asset Class Performance

	Allocation		Performance (%)						
	Market Value (\$M)	%	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	
US Equity	1,586	7.5	13.9	3.6	6.9	11.8	9.5	15.6	
US Equity Custom Index			14.0	4.7	8.8	13.5	10.6	15.8	
Difference			-0.1	-1.1	-1.9	-1.7	-1.1	-0.2	
Int'l Equity	2,011	9.6	11.0	-1.3	-4.3	7.8	2.5	8.8	
Int'l Equity Custom Index			10.3	-1.6	-4.2	8.1	2.6	8.3	
Difference			0.7	0.3	-0.1	-0.3	-0.1	0.5	
Hybrid Assets	1,166	5.6	13.8	1.3	N/A	N/A	N/A	N/A	
Private Equity	549	2.6	N/A	N/A	N/A	N/A	N/A	N/A	
Core Real Estate	637	3.0	1.2	4.6	6.8	6.9	9.3	7.6	
NCREIF ODCE Index (AWA)			1.2	4.7	6.5	7.0	9.2	7.7	
Difference			0.0	-0.1	0.3	-0.1	0.1	-0.1	
Value-Added Real Estate	322	1.5	N/A	N/A	N/A	N/A	N/A	N/A	
Diversified Hedge Funds	458	2.2	1.7	-0.3	1.5	3.2	1.2	4.8	
HFRI FOF Comp Index			4.6	-0.3	0.2	3.9	2.2	3.5	
Difference			-2.9	0.0	1.3	-0.7	-1.0	1.3	
Core Fixed Income	4,900	23.3	2.6	4.4	4.6	2.1	2.8	N/A	
BB US Agg Bond Index			2.9	4.6	4.5	2.0	2.7	3.8	
Difference			-0.3	-0.2	0.1	0.1	0.1	N/A	
Credit Fixed Income	1,749	8.3	4.7	3.2	3.6	5.1	3.6	N/A	
Credit Custom Index			4.9	3.5	4.0	5.8	3.9	8.3	
Difference			-0.2	-0.3	-0.4	-0.7	-0.3	N/A	
Opportunistic Fixed Income	194	0.9	2.3	3.3	4.9	8.2	N/A	N/A	
CS Western Euro Hi Yld Index			6.2	5.1	5.1	7.5	5.6	12.6	
Difference			-3.9	-1.8	-0.2	0.7	N/A	N/A	
EMD (Local)	372	1.8	3.2	1.4	-10.6	2.2	-1.9	N/A	
JPM GBI-EM Gbl Dvf'd Index			2.9	3.2	-7.6	3.3	-0.8	4.4	
Difference			0.3	-1.8	-3.0	-1.1	-1.1	N/A	
TIPS	732	3.5	3.3	1.9	2.7	1.8	2.0	N/A	
BB US TIPS Index (Series B)			3.3	1.9	2.7	1.8	2.1	3.5	
Difference			0.0	0.0	0.0	0.0	-0.1	N/A	

Market Value by Investment Pool

	Market Value (\$)	Allocation (%)
Permanent Mineral Trust	8,065,142,651	38.4
Common School Permanent Land Fund	4,099,925,447	19.5
Permanent Land Fund	190,681,203	0.9
University Permanent Land Fund	26,936,048	0.1
Hathaway Scholarship	593,640,282	2.8
Higher Education	120,612,867	0.6
Workers Compensation Fund	2,157,216,912	10.3
Pool A	237,635,458	1.1
State Agency Pool	5,516,779,117	26.3

Schedule of Inv. Assets - Total Fund Ex Public Purpose Investments

Period Ending	Beginning MV (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending MV (\$)	% Return
FYTD	20,275,652,821	-333,004,697	602,229,042	20,544,877,167	3.0

Asset Class Performance (Cont.)

	Allocation		Performance (%)						
	Market Value (\$M)	%	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	
Long Duration Fixed Income	595	2.8	6.4	N/A	N/A	N/A	N/A	N/A	
BB US Gov't Crdt LT Index			6.5	6.8	5.2	3.8	5.3	7.2	
Difference			-0.1	N/A	N/A	N/A	N/A	N/A	
Int. Gov't Fixed Income	1,889	9.0	1.5	3.5	3.7	1.4	2.2	2.3	
BB US Gov't Int Trm Index			1.6	3.7	3.8	1.0	1.7	2.0	
Difference			-0.1	-0.2	-0.1	0.4	0.5	0.3	
Low Duration Fixed Income	1,518	7.2	1.2	N/A	N/A	N/A	N/A	N/A	
BB US Gov't Crdt 1-3 Yr Index			1.2	2.7	3.0	1.3	1.2	1.6	
Difference			0.0	N/A	N/A	N/A	N/A	N/A	
Cash Equivalents	1,868	8.9	0.7	1.8	2.2	1.2	0.8	0.6	
JPM Cash Custom Index			0.7	1.8	2.2	1.2	0.8	0.7	
Difference			0.0	0.0	0.0	0.0	0.0	-0.1	
Public Purpose Investments	464	2.2	N/A	N/A	N/A	N/A	N/A	N/A	

Performance shown is net of fees and excludes Public Purpose Investments. Pooled investment performance and market values shown reflect State Agency participation and are calculated on a capital-weighted basis using beginning-period allocations. Hybrid Assets includes preferred stock, convertibles, and MLPs. Performance for Private Equity and Value-Added Real Estate is calculated on an IRR basis.



Wyoming State Treasurer's Office
Asset Allocation & Performance

As of March 31, 2019

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Permanent Funds	15,254,155,411	72.6	5.4	5.4	2.9	3.3	5.8	4.5	5.3	7.3	6.0	07/01/2002
Permanent Mineral Trust	8,065,142,651	38.4	5.3	5.3	2.5	2.9	6.0	4.6	5.5	7.4	5.9	06/01/2001
Permanent Mineral Trust - Actual Allocation Index			5.5	5.5	2.8	3.4	5.9	4.7	5.5	7.0	5.3	
Difference			-0.2	-0.2	-0.3	-0.5	0.1	-0.1	0.0	0.4	0.6	
Common School Permanent Land Fund	4,099,925,447	19.5	5.5	5.5	2.7	3.1	6.0	4.7	5.6	7.6	6.2	06/01/2001
Common School - Actual Allocation Index			5.6	5.6	2.9	3.5	5.9	4.8	5.6	7.1	5.3	
Difference			-0.1	-0.1	-0.2	-0.4	0.1	-0.1	0.0	0.5	0.9	
Permanent Land Fund	190,681,203	0.9	5.2	5.2	2.6	3.0	5.9	4.6	5.4	7.2	5.2	02/01/2006
Permanent Land Fund - Actual Allocation Index			5.3	5.3	2.8	3.5	5.8	4.7	5.4	6.8	4.8	
Difference			-0.1	-0.1	-0.2	-0.5	0.1	-0.1	0.0	0.4	0.4	
University Permanent Land Fund	26,936,048	0.1	5.6	5.6	2.5	3.2	6.5	4.9	5.7	7.4	5.1	05/01/2006
University PLF - Actual Allocation Index			5.9	5.9	2.9	3.9	6.6	5.1	5.8	7.2	5.0	
Difference			-0.3	-0.3	-0.4	-0.7	-0.1	-0.2	-0.1	0.2	0.1	
Hathaway Scholarship	593,640,282	2.8	5.4	5.4	2.6	2.9	5.3	4.2	4.9	7.0	5.2	09/01/2007
Hathaway Scholarship - Actual Allocation Index			5.6	5.6	2.9	3.4	5.3	4.4	5.0	6.6	5.0	
Difference			-0.2	-0.2	-0.3	-0.5	0.0	-0.2	-0.1	0.4	0.2	
Higher Education	120,612,867	0.6	5.8	5.8	2.7	2.9	5.3	4.2	4.9	7.0	5.2	09/01/2007
Higher Education - Actual Allocation Index			5.8	5.8	3.0	3.4	5.3	4.4	5.0	6.6	5.0	
Difference			0.0	0.0	-0.3	-0.5	0.0	-0.2	-0.1	0.4	0.2	
Workers Compensation Fund	2,157,216,912	10.3	5.3	5.3	4.8	5.0	4.9	4.0	4.3	6.4	5.4	06/01/2001
Workers Compensation - Actual Allocation Index			5.4	5.4	5.1	5.4	4.7	4.1	4.4	5.9	5.1	
Difference			-0.1	-0.1	-0.3	-0.4	0.2	-0.1	-0.1	0.5	0.3	
Non-Permanent Funds	5,754,414,575	27.4	2.4	2.4	3.0	3.1	2.4	2.4	2.2	3.8	3.8	07/01/2002
Pool A	237,635,458	1.1	3.6	3.6	3.7	3.5	2.8	2.8	2.6	4.5	4.2	01/01/2000
Pool A - Actual Allocation Index			3.7	3.7	3.7	3.7	2.1	2.7	2.5	3.7	4.9	
Difference			-0.1	-0.1	0.0	-0.2	0.7	0.1	0.1	0.8	-0.7	
State Agency Pool	5,516,779,117	26.3	2.3	2.3	3.0	3.0	2.4	2.4	2.2	3.8	3.9	06/01/2001
State Agency Pool - Actual Allocation Index			2.4	2.4	2.8	2.9	1.8	2.3	2.1	3.2	3.8	
Difference			-0.1	-0.1	0.2	0.1	0.6	0.1	0.1	0.6	0.1	
Total Fund	21,008,569,986	100.0	4.5	4.5	3.0	3.3	4.9	4.0	4.4	6.3	5.4	10/01/1996
Wyoming State Actual Allocation Index			4.6	4.6	3.2	3.7	4.6	4.0	4.4	5.8	5.4	
Difference			-0.1	-0.1	-0.2	-0.4	0.3	0.0	0.0	0.5	0.0	

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

Investment Profile					Long-Term Target Allocation														
<p>Fund Type: Permanent Fund</p> <p>Main Objective: Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity.</p> <p>Primary Investment Goals: Capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals.</p> <p>Long-Term Return Expectation: CPI + 3%</p> <p>Maximum Equity Allocation: 70%</p> <p>Current Long-Term Target Equity Allocation: 56%</p> <p>Spending Policy</p> <ul style="list-style-type: none">• Permanent Mineral Trust Fund: 5% of the five-year trailing average market value, calculated on the first day of the fiscal year. In fiscal year 2021, the spending rate will be 4.75%. In fiscal year 2022 and thereafter, the spending rate will be 4.5%.• Hathaway Scholarship: The amount necessary to fully fund scholarships awarded under W.S. 21-16-1301 <i>et seq.</i>					Minimum Range (%)				Target (%)				Maximum Range (%)						
					Permanent Mineral Trust				-				100.00				-		
					Broad US Equity				5.00				10.00				15.00		
					Small Cap US Equity				1.50				3.00				4.50		
					International Equity				6.50				13.00				19.50		
					MLPs				2.25				4.50				6.75		
					Private Equity				4.00				8.00				12.00		
					Core Real Estate				3.00				6.00				9.00		
					Value Added Real Estate				2.00				4.00				6.00		
					Diversified Hedge Funds				3.75				7.50				11.25		
					Core Fixed Income				14.50				29.00				43.50		
					Credit Fixed Income				2.50				5.00				7.50		
					EMD				2.50				5.00				7.50		
					TIPS				2.50				5.00				7.50		
					Cash (inv. in SAP)				0.00				0.00				5.00		
Thematic Allocation					Risk Metrics														
					5 Years				10 Years										
					PMTF				PLF	UPLF	Hath	PMTF				PLF	UPLF	Hath	
					Sharpe Ratio				0.9	0.9	0.9	0.8	1.1				1.2	1.1	1.2
					Standard Deviation				4.5	4.3	4.9	4.3	6.1				5.8	6.0	5.6
					Beta				0.4	0.4	0.4	0.4	0.4				0.4	0.4	
Comparative Performance																			
Allocation					Performance (%)														
Market Value (\$)					QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years							
Permanent Mineral Trust					8,065,142,651	5.3	5.3	2.5	2.9	6.0	4.6	5.5	7.4						
PMTF Actual Allocation Index						5.5	5.5	2.8	3.4	5.9	4.7	5.5	7.0						
Difference						-0.2	-0.2	-0.3	-0.5	0.1	-0.1	0.0	0.4						
Permanent Land Fund					190,681,203	5.2	5.2	2.6	3.0	5.9	4.6	5.4	7.2						
PLF Actual Allocation Index						5.3	5.3	2.8	3.5	5.8	4.7	5.4	6.8						
Difference						-0.1	-0.1	-0.2	-0.5	0.1	-0.1	0.0	0.4						
University Permanent Land Fund					26,936,048	5.6	5.6	2.5	3.2	6.5	4.9	5.7	7.4						
UPLF Actual Allocation Index						5.9	5.9	2.9	3.9	6.6	5.1	5.8	7.2						
Difference						-0.3	-0.3	-0.4	-0.7	-0.1	-0.2	-0.1	0.2						
Hathaway Scholarship					593,640,282	5.4	5.4	2.6	2.9	5.3	4.2	4.9	7.0						
Hathaway Actual Allocation Index						5.6	5.6	2.9	3.4	5.3	4.4	5.0	6.6						
Difference						-0.2	-0.2	-0.3	-0.5	0.0	-0.2	-0.1	0.4						

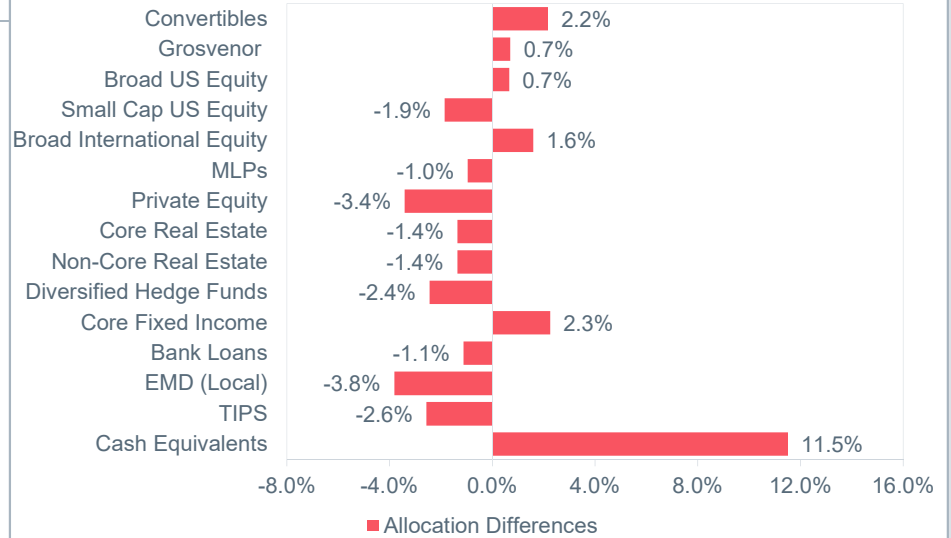
Performance shown is net of fees and annualized for periods greater than one year. Wyoming State Treasurer's Office fiscal year ends on June 30th. Beta is calculated relative to the MSCI ACW Index (Net). Calculations are based on quarterly periodicity. Allocations shown may not sum up to 100% exactly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

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

As of March 31, 2019

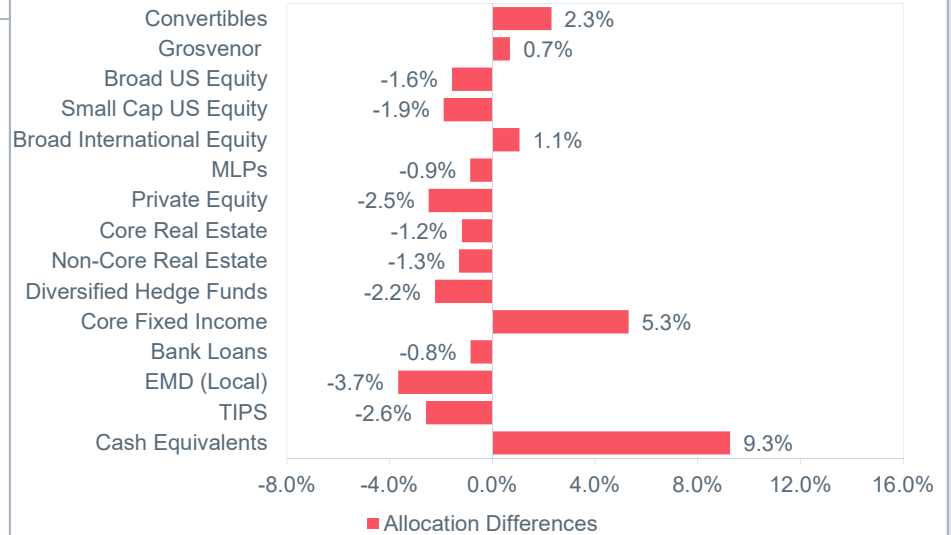
Permanent Mineral Trust

	Allocation (\$)	Allocation (%)	Minimum (%)	Target (%)	Maximum (%)
Convertibles	172,454,561	2.2	0.0	0.0	0.0
Grosvenor	55,768,363	0.7	0.0	0.0	0.0
Broad US Equity	845,171,669	10.7	5.0	10.0	15.0
Small Cap US Equity	91,068,078	1.1	1.5	3.0	4.5
Broad International Equity	1,157,242,398	14.6	6.5	13.0	19.5
MLPs	280,989,822	3.5	2.3	4.5	6.8
Private Equity	363,918,084	4.6	4.0	8.0	12.0
Core Real Estate	368,203,141	4.6	3.0	6.0	9.0
Non-Core Real Estate	209,029,204	2.6	2.0	4.0	6.0
Diversified Hedge Funds	401,195,188	5.1	3.8	7.5	11.3
Core Fixed Income	2,479,012,349	31.3	14.5	29.0	43.5
Bank Loans	307,992,067	3.9	2.5	5.0	7.5
EMD (Local)	94,000,692	1.2	2.5	5.0	7.5
TIPS	193,308,843	2.4	2.5	5.0	7.5
Cash Equivalents	913,020,544	11.5	0.0	0.0	5.0
Total	7,932,375,004	100.0	--	100.0	--



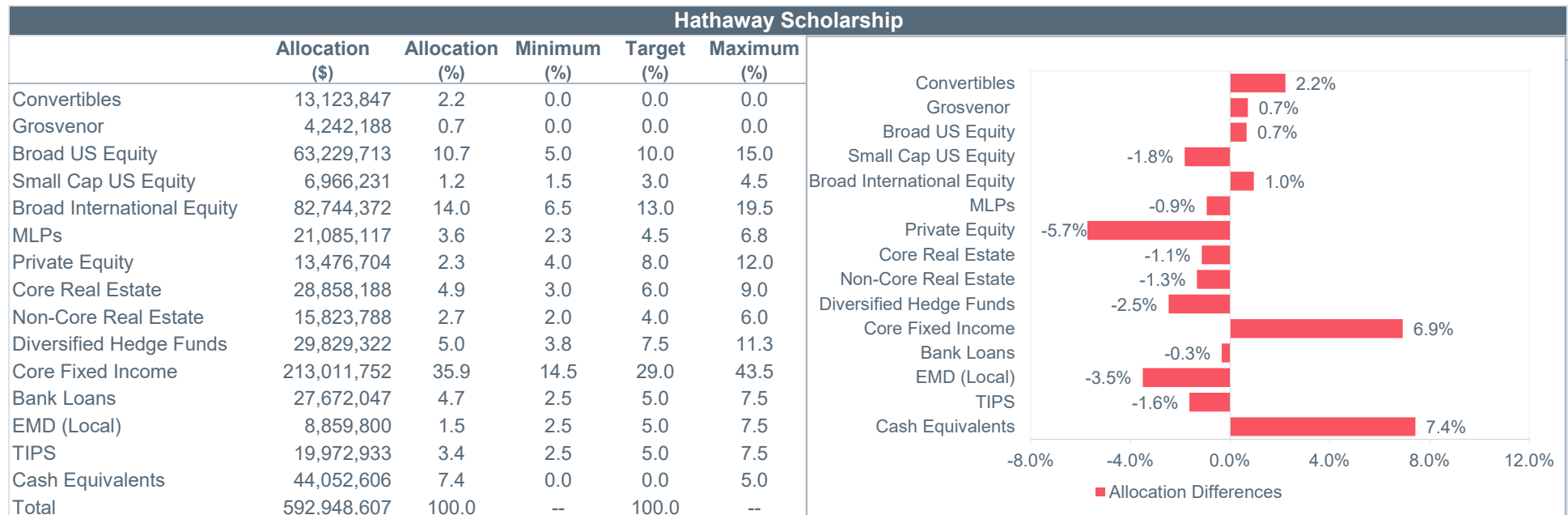
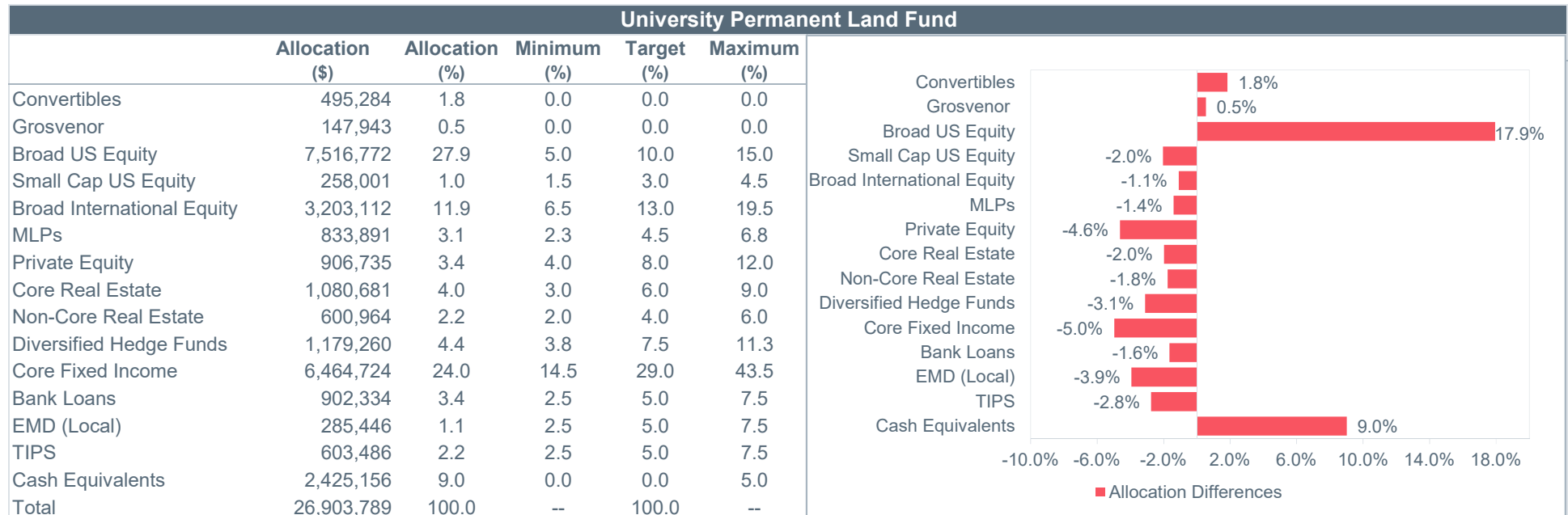
Permanent Land Fund

	Allocation (\$)	Allocation (%)	Minimum (%)	Target (%)	Maximum (%)
Convertibles	4,384,086	2.3	0.0	0.0	0.0
Grosvenor	1,311,772	0.7	0.0	0.0	0.0
Broad US Equity	16,069,510	8.4	5.0	10.0	15.0
Small Cap US Equity	2,117,628	1.1	1.5	3.0	4.5
Broad International Equity	26,811,990	14.1	6.5	13.0	19.5
MLPs	6,942,267	3.6	2.3	4.5	6.8
Private Equity	10,533,640	5.5	4.0	8.0	12.0
Core Real Estate	9,174,458	4.8	3.0	6.0	9.0
Non-Core Real Estate	5,159,213	2.7	2.0	4.0	6.0
Diversified Hedge Funds	10,041,297	5.3	3.8	7.5	11.3
Core Fixed Income	65,409,260	34.3	14.5	29.0	43.5
Bank Loans	7,921,721	4.2	2.5	5.0	7.5
EMD (Local)	2,542,040	1.3	2.5	5.0	7.5
TIPS	4,604,758	2.4	2.5	5.0	7.5
Cash Equivalents	17,661,286	9.3	0.0	0.0	5.0
Total	190,684,925	100.0	--	100.0	--

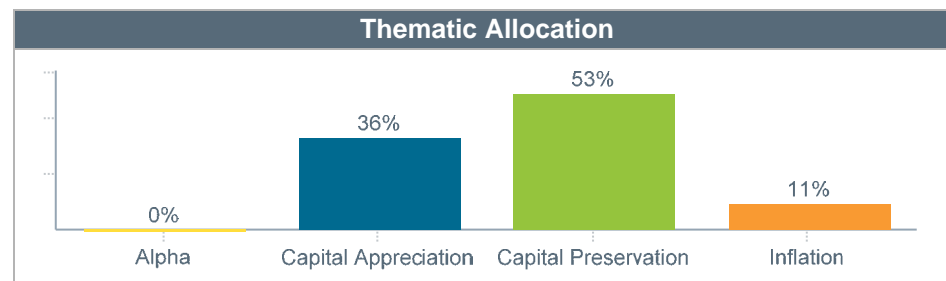


Wyoming State Treasurer's Office
Permanent Funds - Long-Term Total Return Focus
Asset Allocation vs. Long-Term Target

As of March 31, 2019



Investment Profile
Fund Type: Permanent Fund Main Objective: Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity. Primary Investment Goals: Income generation, capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals. Long-Term Return Expectation: CPI + 3% Maximum Equity Allocation: 70% Current Long-Term Target Equity Allocation: 44%
Spending Policy <ul style="list-style-type: none"> • Common School Permanent Land Fund: 5% of the five-year trailing average market value, calculated on the first day of the fiscal year. In fiscal year 2021, the spending rate will be 4.75%. In fiscal year 2022 and thereafter, the spending rate will be 4.5%. • Higher Education: 4.75% of the five-year trailing average market value, calculated on the first day of the fiscal year.

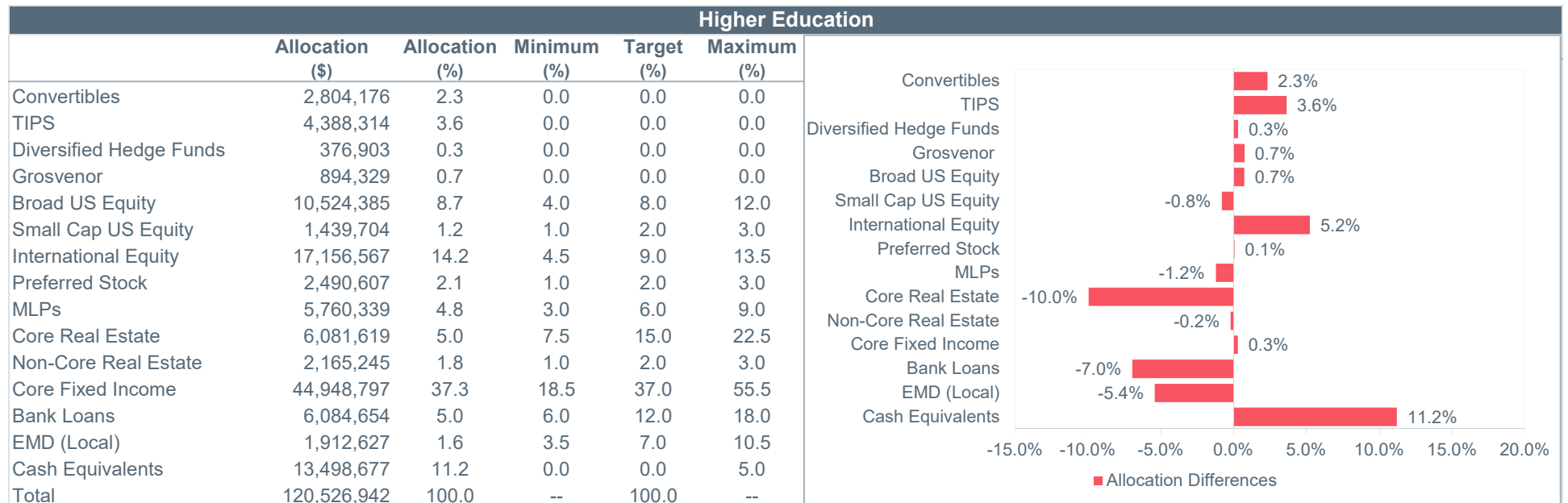
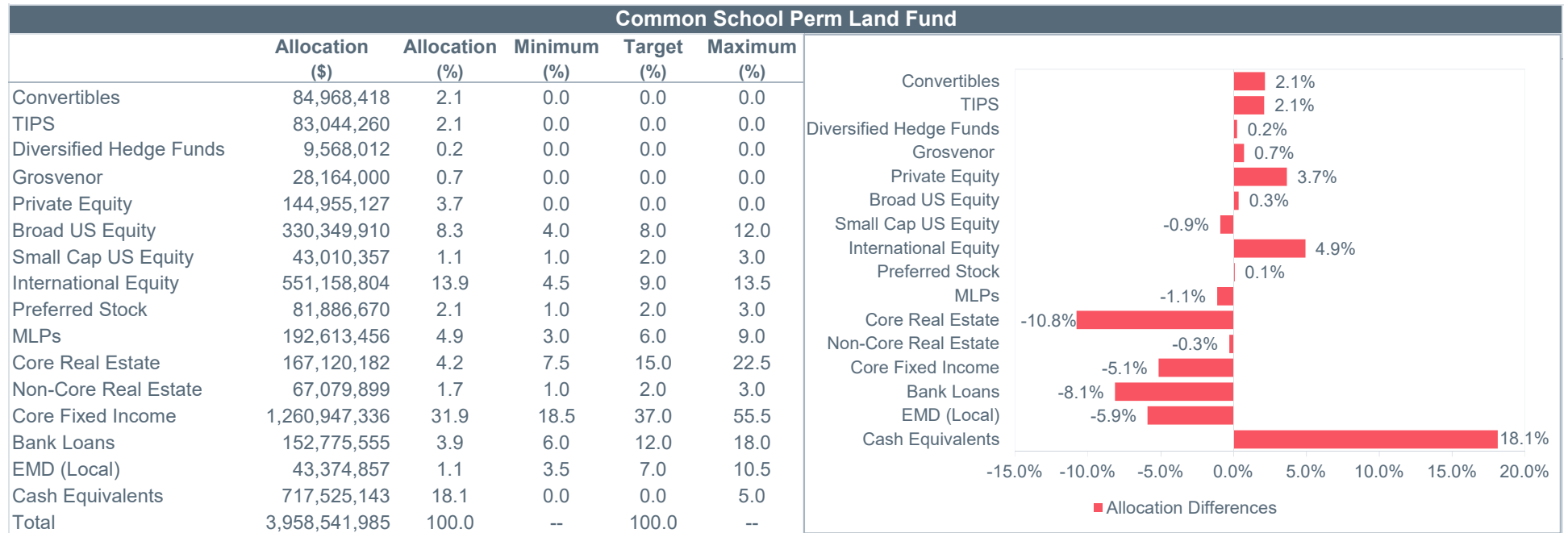


Long-Term Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Common School PLF	-	100.00	-
Broad US Equity	4.00	8.00	12.00
Small Cap US Equity	1.00	2.00	3.00
International Equity	4.50	9.00	13.50
Preferred Stock	1.00	2.00	3.00
MLPs	3.00	6.00	9.00
Core Real Estate	7.50	15.00	22.50
Value Added Real Estate	1.00	2.00	3.00
Core Fixed Income	18.50	37.00	55.50
Credit Fixed Income	6.00	12.00	18.00
EMD	3.50	7.00	10.50
Cash (inv. in SAP)	0.00	0.00	5.00

Risk Metrics				
	5 Years		10 Years	
	CSPLF	HiEd	CSPLF	HiEd
Sharpe Ratio	0.9	0.8	1.2	1.1
Standard Deviation	4.5	4.4	6.1	5.7
Beta	0.4	0.4	0.4	0.4

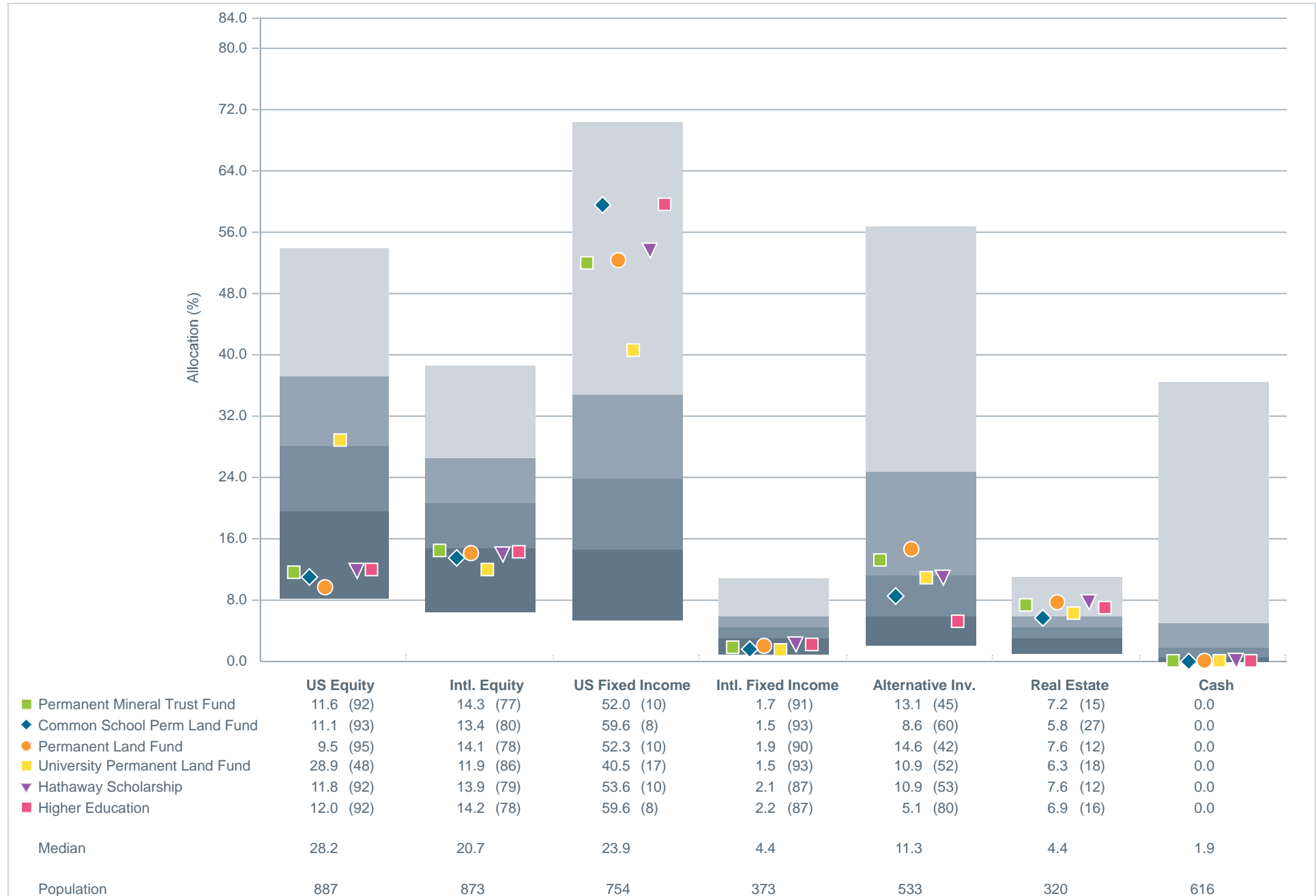
Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Common School Perm Land Fund	4,099,925,447	5.5	5.5	2.7	3.1	6.0	4.7	5.6	7.6
CSPLF - Actual Allocation Index		5.6	5.6	2.9	3.5	5.9	4.8	5.6	7.1
Difference		-0.1	-0.1	-0.2	-0.4	0.1	-0.1	0.0	0.5
Higher Education	120,612,867	5.8	5.8	2.7	2.9	5.3	4.2	4.9	7.0
Higher Education - Actual Allocation Index		5.8	5.8	3.0	3.4	5.3	4.4	5.0	6.6
Difference		0.0	0.0	-0.3	-0.5	0.0	-0.2	-0.1	0.4

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



Wyoming State Treasurer's Office
Permanent Funds vs. All Endowment&Foundation-Total Fund

As of March 31, 2019

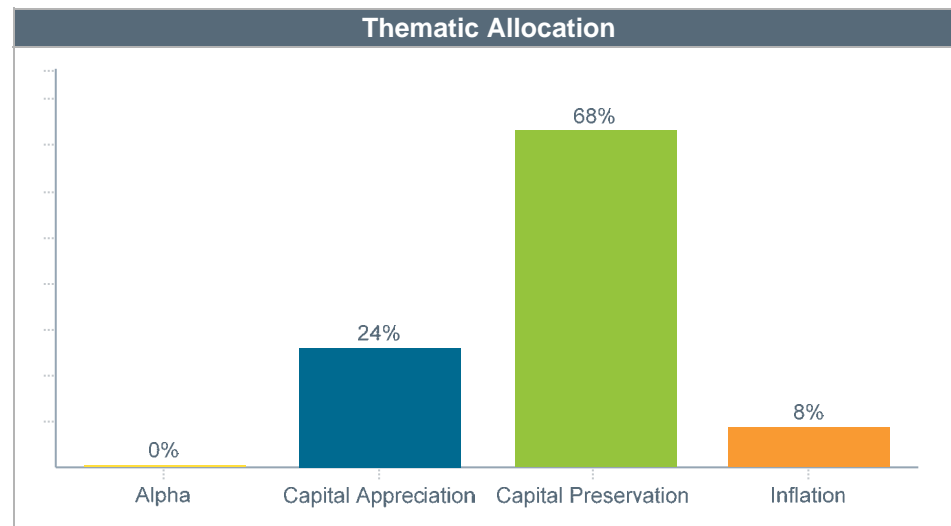


Parentheses contain percentile ranks. US Fixed Income allocation shown includes Convertibles and Cash (inv. in SAP).

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

As of March 31, 2019

Investment Profile
Fund Type: Permanent Fund
Main Objective: Provide a return that assures the Workers' Compensation Fund will be self-funding or nearly self-funding in order to substantially reduce or eliminate the need for employer contributions.
Primary Investment Goals: Long-term return, safety of capital, yield and capital appreciation.
Long-Term Return Expectation: CPI + 3%
Maximum Equity Allocation: 70%
Current Long-Term Target Equity Allocation: 27%
Actuarial Discount Rate: 2.5%*
Funded Status: >100%*
Duration of Liabilities: 11.4 years*
*As of the most recent report.



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Workers' Compensation Fund	2,157,216,912	5.3	5.3	4.8	5.0	4.9	4.0	4.3	6.4
WC - Actual Allocation Index		5.4	5.4	5.1	5.4	4.7	4.1	4.4	5.9
Difference		-0.1	-0.1	-0.3	-0.4	0.2	-0.1	-0.1	0.5

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.

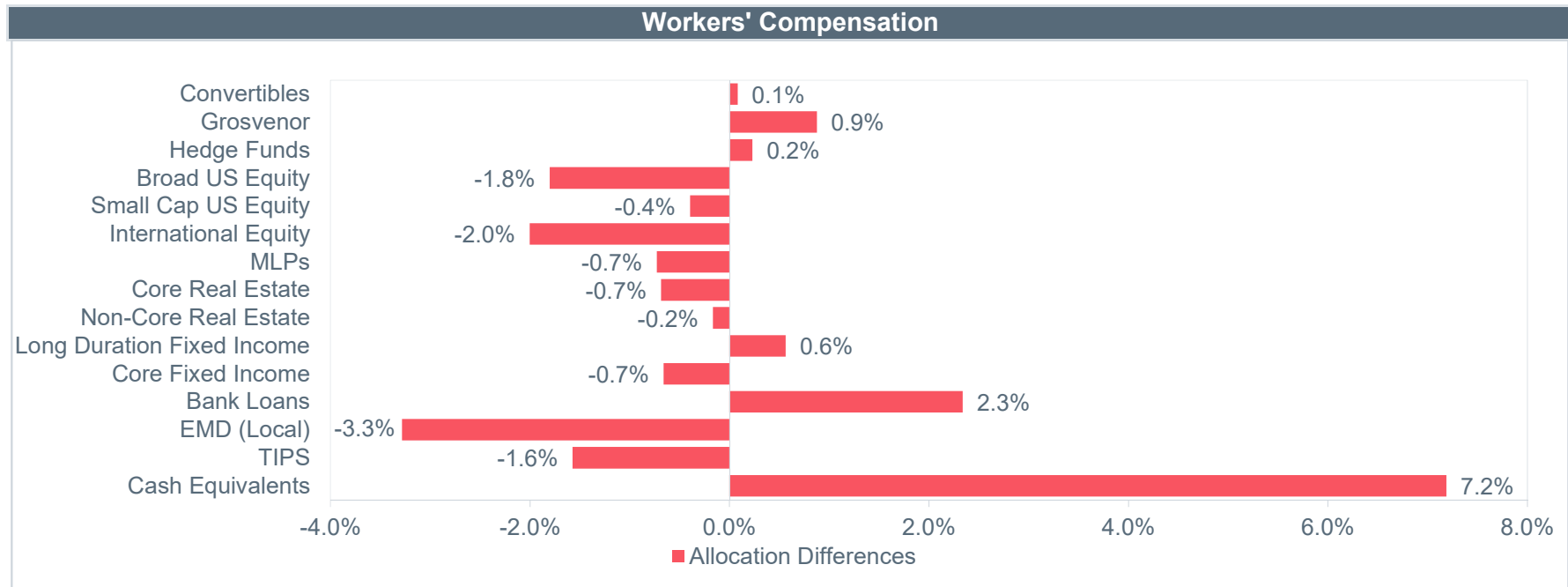
Long-Term Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Workers Compensation Fund	-	100.00	-
Broad US Equity	4.50	9.00	13.50
Small Cap US Equity	0.50	1.00	1.50
International Equity	5.00	10.00	15.00
MLPs	1.50	3.00	4.50
Core Real Estate	1.50	3.00	4.50
Value Added Real Estate	0.50	1.00	1.50
Long Duration Fixed Income	13.50	27.00	40.50
Core Fixed Income	16.50	33.00	49.50
Credit Fixed Income	1.50	3.00	4.50
EMD	2.50	5.00	7.50
TIPS	2.50	5.00	7.50
Cash (inv. in SAP)	0.00	0.00	5.00

Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	8.3	5.8
Avg. Quality	A1	Aa1/Aa2
Yield To Maturity (%)	3.5	2.9
Coupon Rate (%)	3.6	3.2

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	1.0	1.3
Standard Deviation	3.4	4.6
Beta	0.3	0.3

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

As of March 31, 2019



	Market Value	Allocation	Minimum	Target	Maximum
	(\$)	(%)	(%)	(%)	(%)
Convertibles	1,780,899	0.1	0.0	0.0	0.0
Grosvenor	18,921,619	0.9	0.0	0.0	0.0
Hedge Funds	4,986,990	0.2	0.0	0.0	0.0
Broad US Equity	155,299,960	7.2	4.5	9.0	13.5
Small Cap US Equity	13,093,783	0.6	0.5	1.0	1.5
International Equity	172,563,022	8.0	5.0	10.0	15.0
MLPs	49,023,013	2.3	1.5	3.0	4.5
Core Real Estate	49,941,839	2.3	1.5	3.0	4.5
Non-Core Real Estate	18,019,693	0.8	0.5	1.0	1.5
Long Duration Fixed Income	594,740,238	27.6	13.5	27.0	40.5
Core Fixed Income	697,787,453	32.3	16.5	33.0	49.5
Bank Loans	115,207,802	5.3	1.5	3.0	4.5
EMD (Local)	37,087,549	1.7	2.5	5.0	7.5
TIPS	73,970,815	3.4	2.5	5.0	7.5
Cash Equivalents	155,121,232	7.2	0.0	0.0	5.0
Total	2,157,545,906	100.0	--	100.0	--

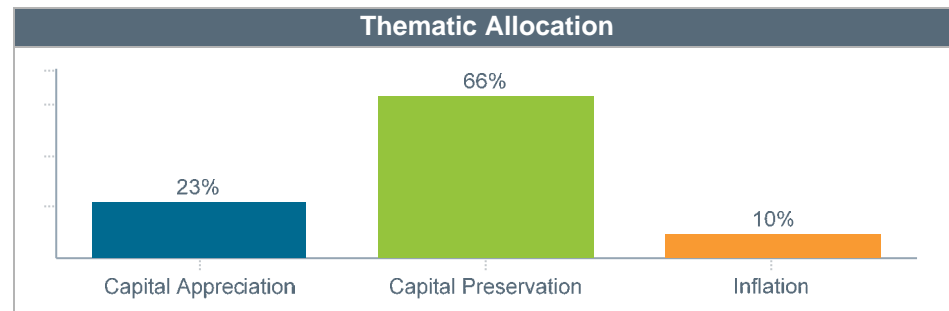
Market values were provided by the Treasurer's Office and may differ from the rest of the report.

Wyoming State Treasurer's Office
Pool A Investment Account

As of March 31, 2019

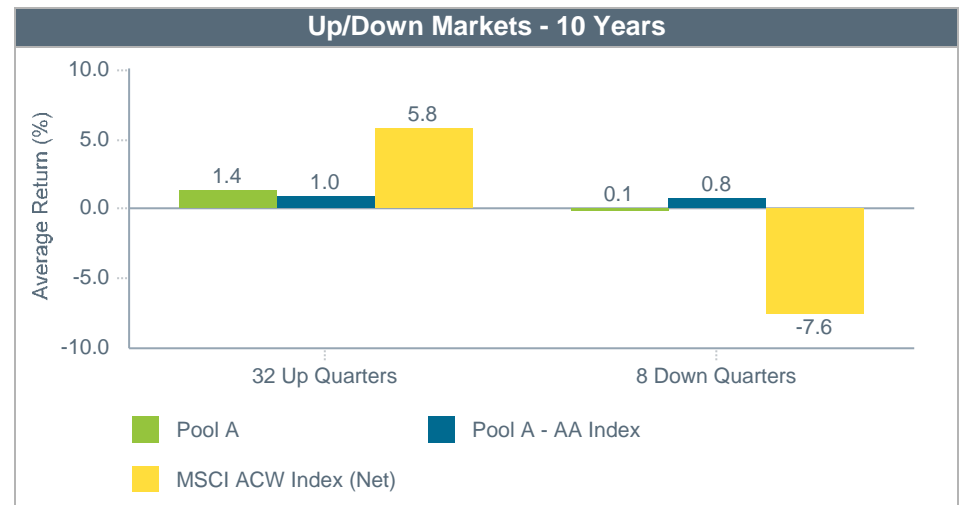
Investment Profile
Fund Type: Non-Permanent Fund
Main Objective: Provide a diverse array of securities including equities, while maintaining adequate liquidity, stability, and return on investment.
Primary Investment Goal: Pool A is intended to be moderately liquid and safely invested but also be invested for return and growth.
Long-Term Return Expectation: CPI + 2%
Maximum Equity Allocation: 60%
Current Target Equity Allocation: 23%
Participating Funds:
• Tobacco Settlement Trust Fund
• Wildlife and Natural Resource Trust Account
• Cultural Trust Fund
• Public Television Matching Fund Account
• Game and Fish Fund Trust Account

Risk Metrics	5 Years	10 Years
Sharpe Ratio	0.7	1.2
Standard Deviation	2.8	3.2
Beta	0.1	0.1



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Pool A	237,635,458	3.6	3.6	3.7	3.5	2.8	2.8	2.6	4.5
Pool A - Actual Allocation Index		3.7	3.7	3.7	3.7	2.1	2.7	2.5	3.7
Difference		-0.1	-0.1	0.0	-0.2	0.7	0.1	0.1	0.8

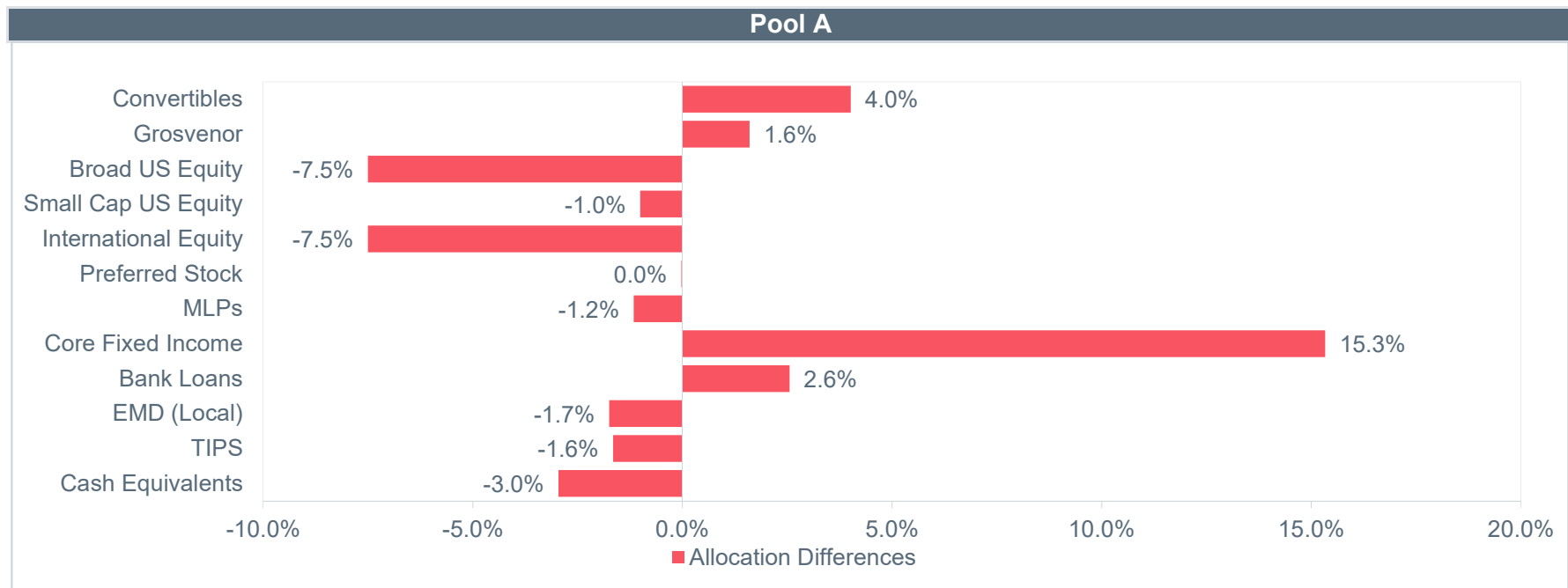
Long-Term Target Allocation	Minimum Range (%)	Target (%)	Maximum Range (%)
Pool A	-	100.00	-
Broad US Equity	3.75	7.50	11.25
Small Cap US Equity	0.50	1.00	1.50
International Equity	3.75	7.50	11.25
Preferred Stock	1.00	2.00	3.00
MLPs	2.50	5.00	7.50
Core Fixed Income	24.50	49.00	73.50
Credit Fixed Income	5.00	10.00	15.00
EMD	2.50	5.00	7.50
TIPS	4.00	8.00	12.00
Cash (inv. in SAP)	2.50	5.00	7.50



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.

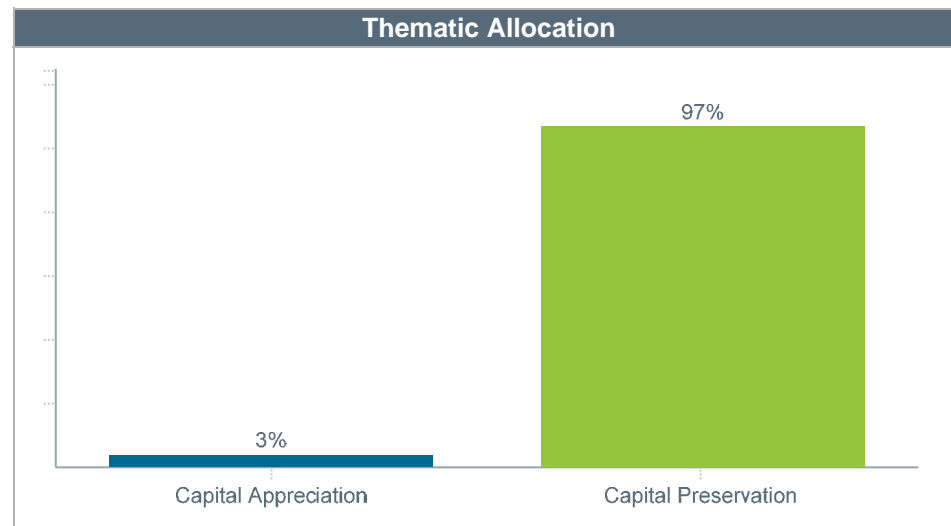
Pool A

Asset Allocation vs. Long-Term Target



	Market Value	Allocation	Minimum	Target	Maximum
	(\$)	(%)	(%)	(%)	(%)
Convertibles	9,571,844	4.0	0.0	0.0	0.0
Grosvenor	3,821,407	1.6	0.0	0.0	0.0
Broad US Equity	0	0.0	3.8	7.5	11.3
Small Cap US Equity	0	0.0	0.5	1.0	1.5
International Equity	0	0.0	3.8	7.5	11.3
Preferred Stock	4,718,974	2.0	1.0	2.0	3.0
MLPs	9,156,646	3.8	2.5	5.0	7.5
Core Fixed Income	153,244,205	64.3	24.5	49.0	73.5
Bank Loans	29,925,070	12.6	5.0	10.0	15.0
EMD (Local)	7,757,959	3.3	2.5	5.0	7.5
TIPS	15,135,546	6.4	4.0	8.0	12.0
Cash Equivalents	4,869,647	2.0	2.5	5.0	7.5
Total	238,201,299	100.0	--	100.0	--

Investment Profile
Fund Type: Non-Permanent Fund Main Objective: Produce an investment return so that State agencies have the advantage of better income from their invested funds, while maintaining stability. Primary Investment Goal: Capital preservation, yield, and liquidity Long-Term Return Expectation: CPI + 2% Liquidity Constraints: The Fund must meet the day-to-day cash flow needs of the State Maximum Equity Allocation: 0% Current Target Equity Allocation: 0%



Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
State Agency Pool	5,516,779,117	2.3	2.3	3.0	3.0	2.4	2.4	2.2	3.8
State Agency Pool - Actual Allocation Index		2.4	2.4	2.8	2.9	1.8	2.3	2.1	3.2
Difference		-0.1	-0.1	0.2	0.1	0.6	0.1	0.1	0.6

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.

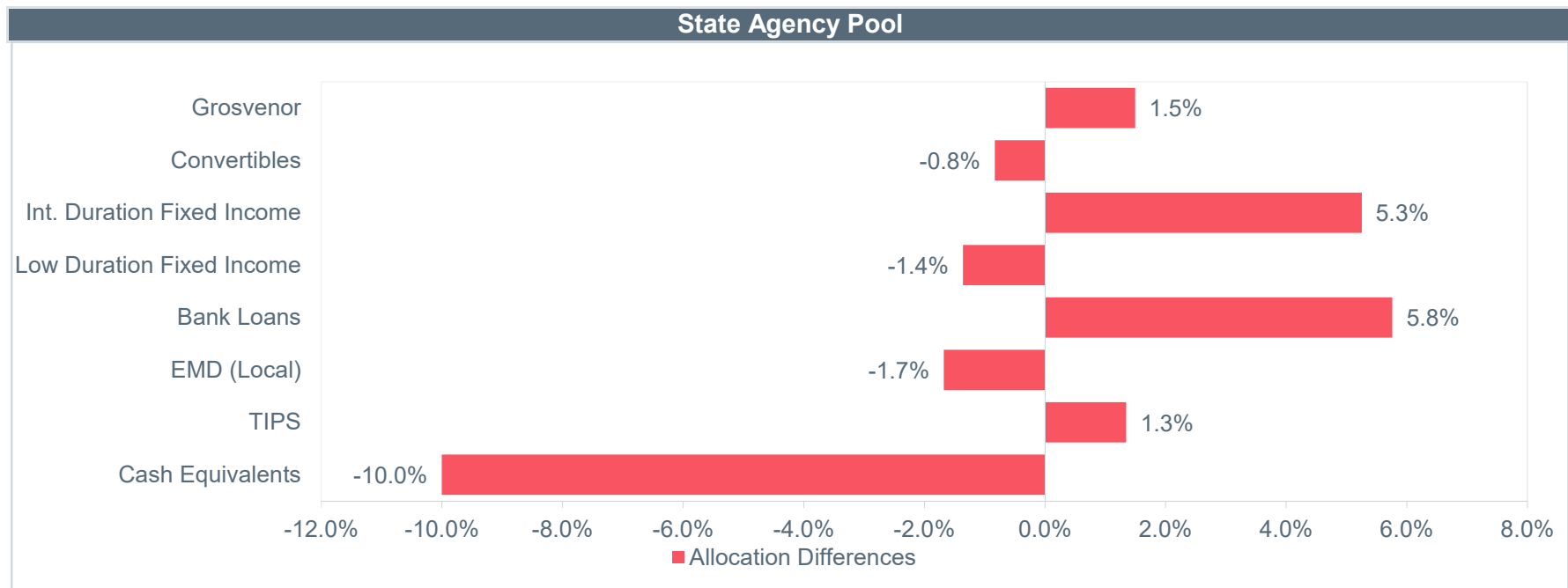
Long-Term Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
State Agency Pool	-	100.00	-
Core Fixed Income	5.00	10.00	15.00
Int. Govt. Fixed Income	10.00	20.00	30.00
Low Duration Fixed Income	15.00	30.00	45.00
Credit Fixed Income	7.50	15.00	22.50
Opportunistic Fixed Income	0.00	0.00	0.00
EMD	2.50	5.00	7.50
TIPS	2.50	5.00	7.50
Convertibles	2.50	5.00	7.50
Cash Equivalents	5.00	10.00	15.00

Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	2.8	5.8
Avg. Quality	A1	Aa1/Aa2
Yield To Maturity (%)	3.4	2.9
Coupon Rate (%)	2.8	3.2

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	0.7	1.2
Standard Deviation	2.2	2.7
Beta	0.1	0.1

Wyoming State Treasurer's Office
State Agency Pool
Asset Allocation vs. Long-Term Target

As of March 31, 2019



	Market Value (\$)	Allocation (%)	Minimum (%)	Target (%)	Maximum (%)
Grosvenor	79,322,593	1.5	0.0	0.0	0.0
Convertibles	221,026,279	4.2	2.5	5.0	7.5
Int. Duration Fixed Income	1,868,462,417	35.3	15.0	30.0	45.0
Low Duration Fixed Income	1,517,963,007	28.6	15.0	30.0	45.0
Bank Loans	1,100,361,002	20.8	7.5	15.0	22.5
EMD (Local)	176,249,356	3.3	2.5	5.0	7.5
TIPS	336,511,577	6.3	2.5	5.0	7.5
Cash Equivalents	0	0.0	5.0	10.0	15.0
Total	5,299,896,231	100.0	--	100.0	--

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of March 31, 2019

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	Since Incep.	Inception Date
US Equity	1,586,112,594	7.5	13.9	13.9	3.6	6.9	11.8	9.5	12.0	15.6	-7.6	7.0	06/01/1997
US Equity Custom Index			14.0	14.0	4.7	8.8	13.5	10.6	12.7	15.8	-5.2	7.6	
Difference			-0.1	-0.1	-1.1	-1.9	-1.7	-1.1	-0.7	-0.2	-2.4	-0.6	
Int'l Equity	2,010,880,265	9.6	11.0	11.0	-1.3	-4.3	7.8	2.5	4.7	8.8	-14.7	5.4	01/01/2004
International Equity Custom Index			10.3	10.3	-1.6	-4.2	8.1	2.6	4.7	8.3	-14.2	5.1	
Difference			0.7	0.7	0.3	-0.1	-0.3	-0.1	0.0	0.5	-0.5	0.3	
Preferred Stock	89,096,250	0.4	7.2	7.2	5.0	N/A	N/A	N/A	N/A	N/A	N/A	5.0	07/01/2018
S&P US Preferred Stock Index			8.0	8.0	2.1	4.0	4.4	5.3	5.8	12.8	-4.3	2.1	
Difference			-0.8	-0.8	2.9	N/A	N/A	N/A	N/A	N/A	N/A	2.9	
Convertibles	510,609,393	2.4	11.2	11.2	6.4	10.9	12.9	7.1	9.5	12.6	3.2	6.2	09/01/2000
ICE BofAML All Cnvrts Index (All Qual)			10.2	10.2	3.8	7.8	12.1	7.1	9.7	13.0	0.2	5.6	
Difference			1.0	1.0	2.6	3.1	0.8	0.0	-0.2	-0.4	3.0	0.6	
MLPs	566,404,552	2.7	21.1	21.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4.8	08/01/2018
S&P MLP Index (TR)			18.7	18.7	3.8	17.5	8.8	-3.9	1.7	11.0	-11.7	-2.2	
Difference			2.4	2.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.6	
Private Equity	548,960,000	2.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
S&P 500 Index+5%			15.0	15.0	9.8	15.0	19.2	16.5	18.5	21.7	0.4	14.1	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Core Real Estate	636,995,952	3.0	1.2	1.2	4.6	6.8	6.9	9.3	9.4	7.6	7.7	5.8	01/01/2006
NCREIF ODCE Index (AWA) (Net)			1.2	1.2	4.7	6.5	7.0	9.2	9.7	7.7	7.4	5.9	
Difference			0.0	0.0	-0.1	0.3	-0.1	0.1	-0.3	-0.1	0.3	-0.1	
Value-Added Real Estate	321,726,689	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NCREIF Property Index			1.8	1.8	4.9	6.8	7.1	9.1	9.6	8.5	6.7	6.5	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Diversified Hedge Funds	457,589,570	2.2	1.7	1.7	-0.3	1.5	3.2	1.2	3.4	4.8	-0.8	2.3	12/01/2007
HFRI FOF Comp Index			4.6	4.6	-0.3	0.2	3.9	2.2	3.1	3.5	-4.0	1.0	
Difference			-2.9	-2.9	0.0	1.3	-0.7	-1.0	0.3	1.3	3.2	1.3	
Core Fixed Income	4,900,158,730	23.3	2.6	2.6	4.4	4.6	2.1	2.8	N/A	N/A	0.5	2.1	01/01/2013
Bloomberg US Agg Bond Index			2.9	2.9	4.6	4.5	2.0	2.7	2.5	3.8	0.0	2.2	
Difference			-0.3	-0.3	-0.2	0.1	0.1	0.1	N/A	N/A	0.5	-0.1	

Performance shown is net of fees and excludes Public Purpose Investments (PPIs). Wyoming State Treasurer's Office fiscal year ends on June 30th.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of March 31, 2019

	Allocation		Performance (%)											Inception Date
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	Since Incep.		
Credit Fixed Income	1,748,842,252	8.3	4.7	4.7	3.2	3.6	5.1	3.6	N/A	N/A	-1.1	3.5	04/01/2013	
Credit Custom Index			4.9	4.9	3.5	4.0	5.8	3.9	4.6	8.3	-0.6	3.9		
Difference			-0.2	-0.2	-0.3	-0.4	-0.7	-0.3	N/A	N/A	-0.5	-0.4		
Opportunistic Fixed Income	193,882,964	0.9	2.3	2.3	3.3	4.9	8.2	N/A	N/A	N/A	4.1	6.2	07/01/2014	
CS Western Euro Hi Yld Index			6.2	6.2	5.1	5.1	7.5	5.6	7.5	12.6	-1.1	5.3		
Difference			-3.9	-3.9	-1.8	-0.2	0.7	N/A	N/A	N/A	5.2	0.9		
TIPS	731,540,532	3.5	3.3	3.3	1.9	2.7	1.8	2.0	N/A	N/A	-1.5	0.4	01/01/2013	
Bloomberg US Trsy US TIPS Index (Series B)			3.3	3.3	1.9	2.7	1.8	2.1	1.3	3.5	-1.5	0.4		
Difference			0.0	0.0	0.0	0.0	0.0	-0.1	N/A	N/A	0.0	0.0		
Emerging Market Debt	372,070,326	1.8	3.2	3.2	1.4	-10.6	2.2	-1.9	N/A	N/A	-9.1	-3.0	04/01/2013	
JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)			2.9	2.9	3.2	-7.6	3.3	-0.8	-0.5	4.4	-6.2	-1.9		
Difference			0.3	0.3	-1.8	-3.0	-1.1	-1.1	N/A	N/A	-2.9	-1.1		
Long Duration Fixed Income	594,740,238	2.8	6.4	6.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.4	01/01/2019	
Bloomberg US Gov't Crdt Lng Trm Bond Index			6.5	6.5	6.8	5.2	3.8	5.3	4.9	7.2	-4.7	6.5		
Difference			-0.1	-0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.1		
Low Duration Fixed Income	1,517,963,007	7.2	1.2	1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.9	12/01/2018	
Bloomberg US Gov't Crdt 1-3 Yr Bond Index			1.2	1.2	2.7	3.0	1.3	1.2	1.1	1.6	1.6	2.0		
Difference			0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.1		
Intermediate Govt Fixed Income	1,889,129,563	9.0	1.5	1.5	3.5	3.7	1.4	2.2	1.8	2.3	1.8	4.6	10/01/1996	
Bloomberg US Gov't: Int. Term Bond Index			1.6	1.6	3.7	3.8	1.0	1.7	1.4	2.6	1.4	4.6		
Difference			-0.1	-0.1	-0.2	-0.1	0.4	0.5	0.4	-0.3	0.4	0.0		
Public Purpose Investments	463,692,819	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Cash Equivalents	1,868,174,291	8.9	0.7	0.7	1.8	2.2	1.2	0.8	0.6	0.6	1.9	1.5	01/01/2006	
JP Morgan Cash Custom Index			0.7	0.7	1.8	2.2	1.2	0.8	0.6	0.7	1.9	1.5		
Difference			0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0		
Total Fund	21,008,569,986	100.0	4.5	4.5	3.0	3.3	4.9	4.0	4.4	6.3	-1.4	5.4	10/01/1996	
Wyoming State Actual Allocation Index			4.6	4.6	3.2	3.7	4.6	4.0	4.4	5.8	-1.6	5.4		
Difference			-0.1	-0.1	-0.2	-0.4	0.3	0.0	0.0	0.5	0.2	0.0		

Performance shown is net of fees and excludes Public Purpose Investments (PPIs). Wyoming State Treasurer's Office fiscal year ends on June 30th.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of March 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Public Equity											
US Equity Composite	1,586,112,594	13.91	13.91	3.55	6.87	11.81	9.47	11.98	15.59	7.03	06/01/1997
US Equity Custom Index		14.04	14.04	4.70	8.77	13.49	10.65	12.66	15.78	7.63	
Difference		-0.13	-0.13	-1.15	-1.90	-1.68	-1.18	-0.68	-0.19	-0.60	
All Cap US Equity Composite	1,426,688,851	13.84	13.84	4.65	8.11	12.11	N/A	N/A	N/A	10.61	11/01/2014
Russell 3000 Index		14.04	14.04	4.70	8.77	13.49	10.36	12.63	16.00	9.92	
Difference		-0.20	-0.20	-0.05	-0.66	-1.38	N/A	N/A	N/A	0.69	
State Street All Cap	1,377,714,856	13.75	13.75	5.15	8.98	13.02	N/A	N/A	N/A	9.43	01/01/2015
State Street All Cap Custom Index		13.51	13.51	4.72	8.46	12.94	10.11	12.56	16.33	9.39	
Difference		0.24	0.24	0.43	0.52	0.08	N/A	N/A	N/A	0.04	
Russell 3000 Index		14.04	14.04	4.70	8.77	13.49	10.36	12.63	16.00	9.71	
Difference		-0.29	-0.29	0.45	0.21	-0.47	N/A	N/A	N/A	-0.28	
Epoch	48,973,995	14.41	14.41	2.68	4.41	11.97	N/A	N/A	N/A	8.18	11/01/2014
Russell 3000 Index		14.04	14.04	4.70	8.77	13.49	10.36	12.63	16.00	9.92	
Difference		0.37	0.37	-2.02	-4.36	-1.52	N/A	N/A	N/A	-1.74	
UW Portfolio Mgmt Program	1,469,961	11.46	11.46	1.67	3.81	10.93	9.24	10.28	10.82	4.96	04/01/2006
S&P 500 Index (Cap Wtd)		13.65	13.65	5.86	9.50	13.51	10.91	12.85	15.92	8.47	
Difference		-2.19	-2.19	-4.19	-5.69	-2.58	-1.67	-2.57	-5.10	-3.51	
Small Cap US Equity Composite	157,953,782	14.60	14.60	-5.47	-3.39	9.36	N/A	N/A	N/A	4.90	11/01/2014
Russell 2000 Index		14.58	14.58	-5.29	2.05	12.92	7.05	10.74	15.36	7.83	
Difference		0.02	0.02	-0.18	-5.44	-3.56	N/A	N/A	N/A	-2.93	
Internal Equity Russell 2000	157,953,782	14.60	14.60	N/A	N/A	N/A	N/A	N/A	N/A	-10.74	09/01/2018
Russell 2000 Index		14.58	14.58	-5.29	2.05	12.92	7.05	10.74	15.36	-10.76	
Difference		0.02	0.02	N/A	N/A	N/A	N/A	N/A	N/A	0.02	
International Equity Composite	2,010,880,265	11.00	11.00	-1.32	-4.27	7.82	2.51	4.71	8.82	5.44	01/01/2004
International Equity Custom Index		10.31	10.31	-1.64	-4.22	8.09	2.57	4.72	8.34	5.08	
Difference		0.69	0.69	0.32	-0.05	-0.27	-0.06	-0.01	0.48	0.36	
Internal International Equity Portfolio	159,530,511	10.16	10.16	-1.49	-4.71	8.18	N/A	N/A	N/A	9.60	02/01/2016
FTSE All Wrld Ex US Index (Net)		10.19	10.19	-1.61	-4.23	8.17	2.93	5.04	9.24	10.02	
Difference		-0.03	-0.03	0.12	-0.48	0.01	N/A	N/A	N/A	-0.42	

Performance shown is net of fees. US Equity Index consists of the S&P 500 Index through September 2014 and the Russell 3000 Index thereafter. International Equity Custom Index and Fisher Index both consist of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) 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 March 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Northern Trust	1,060,878,062	10.20	10.20	-1.56	-4.00	8.19	2.69	4.85	N/A	5.07	08/01/2010
MSCI ACW Ex US Index (Net)		10.31	10.31	-1.64	-4.22	8.09	2.57	4.72	8.85	4.95	
Difference		-0.11	-0.11	0.08	0.22	0.10	0.12	0.13	N/A	0.12	
Fisher Investments	426,063,162	13.42	13.42	-0.49	-3.46	8.62	3.61	5.20	10.44	6.60	09/01/2004
MSCI ACW Ex US Index (Net)		10.31	10.31	-1.64	-4.22	8.09	2.57	4.72	8.34	5.18	
Difference		3.11	3.11	1.15	0.76	0.53	1.04	0.48	2.10	1.42	
Arrowstreet	364,408,530	10.94	10.94	-1.49	-5.75	N/A	N/A	N/A	N/A	-6.67	03/01/2018
MSCI ACW Ex US IM Index (Net)		10.31	10.31	-2.42	-4.96	7.94	2.66	4.90	9.20	-6.06	
Difference		0.63	0.63	0.93	-0.79	N/A	N/A	N/A	N/A	-0.61	
Hybrid Assets											
Cohen & Steers	89,096,250	7.20	7.20	5.04	N/A	N/A	N/A	N/A	N/A	5.04	07/01/2018
S&P US Preferred Stock Index		8.02	8.02	2.14	4.00	4.36	5.29	5.84	12.83	2.14	
Difference		-0.82	-0.82	2.90	N/A	N/A	N/A	N/A	N/A	2.90	
Allianz Global Investors	510,609,393	11.24	11.24	6.41	10.88	12.89	7.11	9.48	12.58	6.24	09/01/2000
ICE BofAML All Cnvrts Index (All Qual)		10.17	10.17	3.84	7.75	12.08	7.06	9.70	12.97	5.61	
Difference		1.07	1.07	2.57	3.13	0.81	0.05	-0.22	-0.39	0.63	
Harvest Fund Advisors	566,404,552	21.14	21.14	N/A	N/A	N/A	N/A	N/A	N/A	-4.79	08/01/2018
S&P MLP Index (TR)		18.75	18.75	3.84	17.50	8.84	-3.86	1.74	11.01	-2.15	
Difference		2.39	2.39	N/A	N/A	N/A	N/A	N/A	N/A	-2.64	
Real Estate											
Core Real Estate Composite	636,995,952	1.23	1.23	4.63	6.80	6.88	9.31	9.45	7.59	5.84	01/01/2006
NCREIF ODCE Index (AWA) (Net)		1.20	1.20	4.65	6.55	7.00	9.18	9.75	7.73	5.92	
Difference		0.03	0.03	-0.02	0.25	-0.12	0.13	-0.30	-0.14	-0.08	
Clarion Lion	353,125,471	1.82	1.82	5.70	8.33	8.07	10.54	10.55	7.85	5.52	01/01/2006
NCREIF ODCE Index (AWA) (Net)		1.20	1.20	4.65	6.55	7.00	9.18	9.75	7.73	5.92	
Difference		0.62	0.62	1.05	1.78	1.07	1.36	0.80	0.12	-0.40	
UBS Trumbull	283,870,481	0.51	0.51	3.32	4.95	5.47	7.63	7.99	7.02	5.52	07/01/2006
NCREIF ODCE Index (AWA) (Net)		1.20	1.20	4.65	6.55	7.00	9.18	9.75	7.73	5.57	
Difference		-0.69	-0.69	-1.33	-1.60	-1.53	-1.55	-1.76	-0.71	-0.05	

Performance shown is net of fees. US Equity Index consists of the S&P 500 Index through September 2014 and the Russell 3000 Index thereafter. International Equity Custom Index and Fisher Index both consist of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) 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 March 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Diversified Hedge Funds											
Diversified Hedge Funds Composite	457,589,570	1.72	1.72	-0.32	1.49	3.17	1.25	3.43	4.81	2.29	12/01/2007
HFRI FOF Comp Index		4.63	4.63	-0.31	0.15	3.94	2.20	3.10	3.55	1.03	
Difference		-2.91	-2.91	-0.01	1.34	-0.77	-0.95	0.33	1.26	1.26	
PAAMCO - Jackalope Fund	38,257,404	-0.32	-0.32	-2.40	-0.65	2.44	0.39	3.24	4.27	1.88	12/01/2007
HFRI FOF Comp Index		4.63	4.63	-0.31	0.15	3.94	2.20	3.10	3.55	1.03	
Difference		-4.95	-4.95	-2.09	-0.80	-1.50	-1.81	0.14	0.72	0.85	
Grosvenor Diversified Hedge Funds	245,295,958	2.04	2.04	-1.20	N/A	N/A	N/A	N/A	N/A	-1.20	07/01/2018
HFRI FOF Comp Index		4.63	4.63	-0.31	0.15	3.94	2.20	3.10	3.55	-0.31	
Difference		-2.59	-2.59	-0.89	N/A	N/A	N/A	N/A	N/A	-0.89	
Internal Diversified Hedge Funds	174,036,208	1.82	1.82	2.71	N/A	N/A	N/A	N/A	N/A	2.71	07/01/2018
HFRI FOF Comp Index		4.63	4.63	-0.31	0.15	3.94	2.20	3.10	3.55	-0.31	
Difference		-2.81	-2.81	3.02	N/A	N/A	N/A	N/A	N/A	3.02	

Performance shown is net of fees. US Equity Index consists of the S&P 500 Index through September 2014 and the Russell 3000 Index thereafter. International Equity Custom Index and Fisher Index both consist of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) 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 March 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income											
Core Fixed Income Composite	4,900,158,730	2.63	2.63	4.39	4.56	2.15	2.78	N/A	N/A	2.14	01/01/2013
Bloomberg US Agg Bond Index		2.94	2.94	4.65	4.48	2.03	2.74	2.48	3.77	2.15	
Difference		-0.31	-0.31	-0.26	0.08	0.12	0.04	N/A	N/A	-0.01	
C.S. McKee	1,265,228,429	2.40	2.40	4.16	4.33	2.04	2.77	N/A	N/A	2.16	01/01/2013
C.S. McKee Custom Index		2.28	2.28	4.24	4.33	2.06	2.76	2.49	3.77	2.17	
Difference		0.12	0.12	-0.08	0.00	-0.02	0.01	N/A	N/A	-0.01	
JP Morgan Core	1,434,631,397	2.84	2.84	4.59	4.50	1.95	2.88	N/A	N/A	2.26	01/01/2013
Bloomberg US Agg Bond Index		2.94	2.94	4.65	4.48	2.03	2.74	2.48	3.77	2.15	
Difference		-0.10	-0.10	-0.06	0.02	-0.08	0.14	N/A	N/A	0.11	
PIMCO	2,200,298,904	2.62	2.62	4.40	4.73	2.44	2.95	N/A	N/A	2.17	01/01/2013
PIMCO Custom Index		2.28	2.28	4.24	4.33	1.91	2.67	2.43	3.73	2.10	
Difference		0.34	0.34	0.16	0.40	0.53	0.28	N/A	N/A	0.07	
Credit Fixed Income Composite	1,748,842,252	4.71	4.71	3.21	3.61	5.07	3.59	N/A	N/A	3.46	04/01/2013
Credit Custom Index		4.86	4.86	3.51	3.97	5.84	3.86	4.61	8.30	3.93	
Difference		-0.15	-0.15	-0.30	-0.36	-0.77	-0.27	N/A	N/A	-0.47	
Neuberger Berman Credit	797,242,411	4.84	4.84	2.95	3.45	4.46	3.34	N/A	N/A	3.49	04/01/2013
Credit Custom Index		4.86	4.86	3.51	3.97	5.84	3.86	4.61	8.30	3.93	
Difference		-0.02	-0.02	-0.56	-0.52	-1.38	-0.52	N/A	N/A	-0.44	
Seix	951,599,841	4.60	4.60	3.44	3.74	5.71	3.78	N/A	N/A	3.65	05/01/2013
Credit Custom Index		4.86	4.86	3.51	3.97	5.84	3.86	4.61	8.30	3.80	
Difference		-0.26	-0.26	-0.07	-0.23	-0.13	-0.08	N/A	N/A	-0.15	
Opportunistic Fixed Income											
Grosvenor Silvery Lupine Fund	193,882,964	2.38	2.38	3.36	4.90	8.22	N/A	N/A	N/A	6.24	07/01/2014
CS Western Euro Hi Yld Index		6.15	6.15	5.06	5.13	7.47	5.56	7.48	12.61	5.33	
Difference		-3.77	-3.77	-1.70	-0.23	0.75	N/A	N/A	N/A	0.91	

Performance shown is net of fees. The Credit Custom Index consists of 20% Bloomberg US Credit Index, 20% ICE BofAML US HY Master II Const. Index, and 60% S&P/LSTA Leveraged Loan Index. The Internal Intermediate Gov't Fixed Income Portfolio Index consists of the Bloomberg US Gov't: Int. Term Bond Index; prior to December 2009 the index consisted of the Bloomberg US Gov't/Credit Bond Index. The C.S. McKee Custom Index consists of the Bloomberg US Agg Bond Index through January 2018 and the Bloomberg US Agg Int Index thereafter. The PIMCO Custom Index consists of the Bloomberg US Agg Bond Index through February 2018 and the Bloomberg US Agg Int Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of March 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Emerging Market Debt Fixed Income Composite	372,070,326	3.18	3.18	1.40	-10.64	2.24	-1.89	N/A	N/A	-3.03	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (Unhedged)		2.92	2.92	3.17	-7.58	3.27	-0.76	-0.54	4.38	-1.85	
Difference		0.26	0.26	-1.77	-3.06	-1.03	-1.13	N/A	N/A	-1.18	
Investec	191,985,355	3.26	3.26	1.99	-9.75	2.89	-1.45	N/A	N/A	-2.44	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (Unhedged)		2.92	2.92	3.17	-7.58	3.27	-0.76	-0.54	4.38	-1.85	
Difference		0.34	0.34	-1.18	-2.17	-0.38	-0.69	N/A	N/A	-0.59	
Stone Harbor	180,084,972	3.10	3.10	0.77	-11.57	1.56	-2.36	N/A	N/A	-3.68	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (Unhedged)		2.92	2.92	3.17	-7.58	3.27	-0.76	-0.54	4.38	-1.85	
Difference		0.18	0.18	-2.40	-3.99	-1.71	-1.60	N/A	N/A	-1.83	
TIPS											
State Street TIPS	731,540,532	3.35	3.35	1.89	2.70	1.72	2.03	N/A	N/A	0.40	01/01/2013
Bloomberg US Trsy US TIPS Index (Series B)		3.34	3.34	1.88	2.69	1.75	2.06	1.27	3.49	0.43	
Difference		0.01	0.01	0.01	0.01	-0.03	-0.03	N/A	N/A	-0.03	
Long Duration Fixed Income Composite	594,740,238	6.42	6.42	N/A	N/A	N/A	N/A	N/A	N/A	6.42	01/01/2019
Bloomberg US Gov't Crdt Lng Trm Bond Index		6.45	6.45	6.78	5.24	3.75	5.35	4.93	7.23	6.45	
Difference		-0.03	-0.03	N/A	N/A	N/A	N/A	N/A	N/A	-0.03	
Internal Long Duration Govt Fixed Income Portfolio	253,419,538	4.46	4.46	N/A	N/A	N/A	N/A	N/A	N/A	4.46	01/01/2019
Bloomberg US Gov't Lng Trm Bond Index		4.64	4.64	5.92	6.20	1.54	5.43	4.28	5.19	4.64	
Difference		-0.18	-0.18	N/A	N/A	N/A	N/A	N/A	N/A	-0.18	
Logan Circle	341,320,699	7.94	7.94	N/A	N/A	N/A	N/A	N/A	N/A	10.08	11/01/2018
Bloomberg US Lng Crdt Index		7.86	7.86	7.43	4.58	5.21	5.38	5.38	9.00	10.06	
Difference		0.08	0.08	N/A	N/A	N/A	N/A	N/A	N/A	0.02	
Intermediate Govt Fixed Income											
Internal Intermediate Govt Fixed Income Portfolio	1,889,129,563	1.48	1.48	3.51	3.70	1.37	2.22	1.76	2.29	4.59	10/01/1996
Bloomberg US Gov't: Int. Term Bond Index		1.58	1.58	3.72	3.79	0.97	1.65	1.39	2.60	4.57	
Difference		-0.10	-0.10	-0.21	-0.09	0.40	0.57	0.37	-0.31	0.02	

Performance shown is net of fees. The Credit Custom Index consists of 20% Bloomberg US Credit Index, 20% ICE BofAML US HY Master II Const. Index, and 60% S&P/LSTA Leveraged Loan Index. The Internal Intermediate Gov't Fixed Income Portfolio Index consists of the Bloomberg US Gov't: Int. Term Bond Index; prior to December 2009 the index consisted of the Bloomberg US Gov't/Credit Bond Index. The C.S. McKee Custom Index consists of the Bloomberg US Agg Bond Index through January 2018 and the Bloomberg US Agg Int Index thereafter. The PIMCO Custom Index consists of the Bloomberg US Agg Bond Index through February 2018 and the Bloomberg US Agg Int Index thereafter.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of March 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Low Duration Fixed Income Composite	1,517,963,007	1.17	1.17	N/A	N/A	N/A	N/A	N/A	N/A	1.88	12/01/2018
Bloomberg US Gov't Crdt 1-3 Yr Bond Index		1.21	1.21	2.74	3.03	1.32	1.22	1.13	1.59	1.99	
Difference		-0.04	-0.04	N/A	N/A	N/A	N/A	N/A	N/A	-0.11	
Internal Low Duration Govt Fixed Income Portfolio	1,108,591,025	1.00	1.00	2.51	2.75	N/A	N/A	N/A	N/A	2.69	03/01/2018
Bloomberg US Gov't 1-3 Yr Bond Index		0.99	0.99	2.52	2.74	1.00	0.99	0.86	1.10	2.71	
Difference		0.01	0.01	-0.01	0.01	N/A	N/A	N/A	N/A	-0.02	
State Street Low Duration	409,371,982	1.64	1.64	N/A	N/A	N/A	N/A	N/A	N/A	2.34	12/01/2018
Bloomberg US Crdt 1-3 Yr Bond Index		1.68	1.68	3.23	3.66	1.98	1.72	1.80	3.00	2.41	
Difference		-0.04	-0.04	N/A	N/A	N/A	N/A	N/A	N/A	-0.07	
Cash Equivalents											
JP Morgan Cash Composite	1,868,174,291	0.67	0.67	1.79	2.22	1.21	0.82	0.62	0.62	1.51	01/01/2006
JP Morgan Cash Custom Index		0.67	0.67	1.81	2.24	1.19	0.82	0.63	0.66	1.53	
Difference		0.00	0.00	-0.02	-0.02	0.02	0.00	-0.01	-0.04	-0.02	
Wyo-Star Cash Composite	693,257,486	0.74	0.74	1.91	2.30	1.13	0.82	0.64	0.66	3.25	10/01/1996
Wyo-Star Cash Custom Index		0.78	0.78	1.95	2.32	1.15	0.84	0.67	0.73	2.65	
Difference		-0.04	-0.04	-0.04	-0.02	-0.02	-0.02	-0.03	-0.07	0.60	
WYO STAR II Total Fund	11,593,754	1.65	1.65	N/A	N/A	N/A	N/A	N/A	N/A	1.65	01/01/2019
Bloomberg US Corp Int Bond Index		3.82	3.82	5.27	5.16	2.91	3.03	3.27	5.72	3.82	
Difference		-2.17	-2.17	N/A	N/A	N/A	N/A	N/A	N/A	-2.17	

Performance shown is net of fees. The Credit Custom Index consists of 20% Bloomberg US Credit Index, 20% ICE BofAML US HY Master II Const. Index, and 60% S&P/LSTA Leveraged Loan Index. The Internal Intermediate Gov't Fixed Income Portfolio Index consists of the Bloomberg US Gov't: Int. Term Bond Index; prior to December 2009 the index consisted of the Bloomberg US Gov't/Credit Bond Index. The C.S. McKee Custom Index consists of the Bloomberg US Agg Bond Index through January 2018 and the Bloomberg US Agg Int Index thereafter. The PIMCO Custom Index consists of the Bloomberg US Agg Bond Index through February 2018 and the Bloomberg US Agg Int Index thereafter.

Wyoming State Treasurer's Office
Investment Values by Fund
March 31, 2019

	Total Investment Value	Fiscal Year Ending 06/30/18 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$20,046,282,599	\$20,599,864,561	\$21,008,569,986	100.0%
Permanent Mineral Trust	\$7,512,632,469	\$7,807,061,216	\$8,065,142,651	100.0%
US Equity	\$727,564,591	\$902,200,321	\$936,239,747	11.6%
International Equity	\$1,036,735,474	\$1,195,656,643	\$1,157,242,617	14.3%
MLPs	\$293,177,157	\$0	\$280,989,822	3.5%
Convertible Bonds	\$137,484,327	\$154,560,618	\$161,972,454	2.0%
Private Equity	\$254,679,683	\$427,185,212	\$373,753,293	4.6%
Real Estate	\$481,668,276	\$547,895,605	\$583,543,511	7.2%
Diversified Hedge Funds	\$402,193,592	\$350,380,482	\$401,657,171	5.0%
Fixed Income	\$2,970,099,354	\$2,942,548,132	\$2,961,555,336	36.7%
Public Purpose Investments	\$118,383,081	\$123,953,002	\$118,383,081	1.5%
Cash (invested in State Agency Pool)	\$1,090,646,933	\$1,162,681,202	\$1,089,805,619	13.5%
Common School Perm Land Fund	\$3,841,506,918	\$3,989,288,968	\$4,099,925,447	100.0%
US Equity	\$274,558,120	\$431,979,724	\$373,360,268	9.1%
International Equity	\$493,640,657	\$570,972,998	\$551,158,909	13.4%
Preferred Stock	\$78,121,884	\$78,121,884	\$81,886,670	2.0%
MLPs	\$200,491,905	\$0	\$192,613,456	4.7%
Convertible Bonds	\$65,130,000	\$72,514,640	\$76,730,733	1.9%
Private Equity	\$97,911,809	\$190,648,126	\$149,730,593	3.7%
Real Estate	\$192,210,984	\$229,728,008	\$236,754,138	5.8%
Diversified Hedge Funds	\$9,475,840	\$127,081,061	\$9,506,854	0.2%
Fixed Income	\$1,436,885,537	\$1,234,096,745	\$1,435,759,111	35.0%
Public Purpose Investments	\$143,359,738	\$18,359,738	\$143,359,738	3.5%
Cash (invested in State Agency Pool)	\$849,720,445	\$1,035,786,044	\$849,064,979	20.7%
Permanent Land Fund	\$181,833,909	\$198,047,815	\$190,681,203	100.0%
US Equity	\$17,749,980	\$20,864,116	\$18,187,138	9.5%
International Equity	\$24,012,255	\$27,838,662	\$26,812,025	14.1%
MLPs	\$7,262,049	\$0	\$6,942,267	3.6%
Convertible Bonds	\$3,549,159	\$3,962,941	\$4,181,322	2.2%
Private Equity	\$7,657,803	\$12,731,523	\$10,790,788	5.7%
Real Estate	\$11,959,245	\$13,616,536	\$14,489,713	7.6%
Diversified Hedge Funds	\$10,067,276	\$8,710,560	\$10,052,786	5.3%
Fixed Income	\$78,866,161	\$78,264,960	\$78,531,158	41.2%
Cash (invested in State Agency Pool)	\$20,709,982	\$32,058,517	\$20,694,006	10.9%
University Permanent Land Fund	\$20,632,738	\$23,206,526	\$26,936,048	100.0%
US Equity	\$2,383,016	\$3,734,945	\$7,771,665	28.9%
International Equity	\$2,869,879	\$3,370,941	\$3,203,113	11.9%
MLPs	\$868,787	\$0	\$833,891	3.1%
Convertible Bonds	\$396,770	\$448,651	\$467,441	1.7%
Private Equity	\$635,549	\$2,055,536	\$928,106	3.4%
Real Estate	\$1,399,298	\$1,524,457	\$1,700,284	6.3%
Diversified Hedge Funds	\$1,182,277	\$1,050,152	\$1,180,593	4.4%
Fixed Income	\$8,000,265	\$7,942,943	\$7,956,293	29.5%
Cash (invested in State Agency Pool)	\$2,896,897	\$3,078,901	\$2,894,662	10.7%

Wyoming State Treasurer's Office
Investment Values by Fund
March 31, 2019

	Total Investment Value	Fiscal Year Ending 06/30/18 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$20,046,282,599	\$20,599,864,561	\$21,008,569,986	100.0%
Hathaway Scholarship	\$558,497,454	\$582,413,022	\$593,640,282	100.0%
US Equity	\$54,717,754	\$67,496,921	\$70,195,944	11.8%
International Equity	\$74,058,736	\$86,862,174	\$82,744,228	13.9%
MLPs	\$21,953,297	\$0	\$21,085,117	3.6%
Convertible Bonds	\$10,710,409	\$12,172,394	\$12,618,092	2.1%
Private Equity	\$10,395,911	\$8,504,136	\$13,757,220	2.3%
Real Estate	\$37,157,668	\$46,159,970	\$45,176,835	7.6%
Diversified Hedge Funds	\$29,901,394	\$27,941,928	\$29,862,559	5.0%
Fixed Income	\$266,999,212	\$262,978,800	\$265,637,791	44.7%
Cash (invested in State Agency Pool)	\$52,603,074	\$70,296,700	\$52,562,496	8.9%
Higher Education	\$114,053,830	\$120,117,913	\$120,612,867	100.0%
US Equity	\$8,807,016	\$13,902,792	\$11,964,089	9.9%
International Equity	\$15,361,086	\$18,032,477	\$17,156,536	14.2%
Preferred Stock	\$2,376,100	\$2,376,100	\$2,490,607	2.1%
MLPs	\$6,003,980	\$0	\$5,760,339	4.8%
Convertible Bonds	\$2,248,679	\$2,562,780	\$2,649,202	2.2%
Real Estate	\$6,695,477	\$8,593,415	\$8,340,050	6.9%
Diversified Hedge Funds	\$373,272	\$5,006,285	\$374,494	0.3%
Fixed Income	\$56,035,786	\$55,192,176	\$55,737,577	46.2%
Cash (invested in State Agency Pool)	\$16,152,433	\$14,451,888	\$16,139,973	13.4%
Workers Compensation Fund	\$2,058,388,194	\$2,035,610,128	\$2,157,216,912	100.0%
US Equity	\$135,796,771	\$139,378,668	\$168,393,743	7.8%
International Equity	\$154,432,911	\$180,662,255	\$172,562,837	8.0%
MLPs	\$51,066,335	\$0	\$49,023,013	2.3%
Convertible Bonds	\$0	\$59,806,289	\$0	0.0%
Real Estate	\$55,341,901	\$76,472,069	\$68,718,111	3.2%
Diversified Hedge Funds	\$4,938,949	\$66,237,645	\$4,955,113	0.2%
Fixed Income	\$1,472,250,995	\$1,096,150,945	\$1,509,146,131	70.0%
Cash (invested in State Agency Pool)	\$184,560,332	\$416,902,257	\$184,417,964	8.5%
Pool A	\$237,699,096	\$238,849,216	\$237,635,458	100.0%
Preferred Stock	\$4,502,016	\$4,502,016	\$4,718,974	2.0%
MLPs	\$9,182,808	\$0	\$9,156,646	3.9%
Convertible Bonds	\$8,077,226	\$8,673,658	\$9,515,938	4.0%
Fixed Income	\$210,698,025	\$219,578,995	\$209,008,921	88.0%
Cash (invested in State Agency Pool)	\$5,239,021	\$6,094,547	\$5,234,980	2.2%
State Agency Pool	\$5,521,037,991	\$5,605,269,757	\$5,516,779,117	100.0%
Convertible Bonds	\$146,742,957	\$155,438,565	\$172,880,188	3.1%
Fixed Income	\$3,901,870,783	\$3,615,102,242	\$3,867,933,823	70.1%
Public Purpose Investments	\$143,987,081	\$122,156,392	\$143,987,081	2.6%
Cash Equivalents	\$1,328,437,170	\$1,712,572,558	\$1,331,978,026	24.1%

Wyoming State Treasurer's Office
Investment Values by Manager
March 31, 2019

	Total Investment Value	Fiscal Year Ending 06/30/18 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$20,046,282,599	\$20,599,864,561	\$21,008,569,986	100.0%
US Equity	\$1,221,577,249	\$1,579,557,486	\$1,586,112,594	7.5%
State Street All Cap	\$1,055,650,267	\$1,137,708,518	\$1,377,714,856	
Epoch	\$0	\$269,713,108	\$48,973,995	
UW Portfolio Management Program	\$1,000,000	\$1,466,053	\$1,469,961	
Internal Equity Russell 2000	\$164,926,982	\$0	\$157,953,782	
RBC	\$0	\$170,669,808	\$0	
International Equity	\$1,801,110,997	\$2,083,396,150	\$2,010,880,265	9.6%
Internal International Equity Portfolio	\$135,000,000	\$166,293,614	\$159,530,511	
Northern Trust	\$968,265,815	\$1,101,957,364	\$1,060,878,062	
Fisher Investments	\$343,646,720	\$437,594,475	\$426,063,162	
Arrowstreet	\$354,198,461	\$377,550,696	\$364,408,530	
Mixed Assets	\$1,108,418,160	\$631,160,344	\$1,166,110,195	5.6%
Cohen & Steers	\$85,000,000	\$85,000,000	\$89,096,250	
Harvest	\$590,006,318	\$0	\$566,404,552	
Allianz Global Investors	\$433,411,842	\$546,160,344	\$510,609,393	
Private Equity	\$371,280,754	\$641,124,533	\$548,960,000	2.6%
Access Venture Partners II	\$3,801,445	\$14,384,623	\$3,799,738	
Cheyenne Capital	\$121,172,816	\$287,701,522	\$212,415,173	
Hamilton Lane Nowood	\$127,100,622	\$147,715,242	\$146,345,839	
Neuberger Berman Sauger	\$119,205,871	\$191,323,146	\$186,399,250	
Real Estate	\$786,432,849	\$923,990,059	\$958,722,641	4.6%
Clarion Lion	\$266,303,630	\$342,217,898	\$353,125,471	
UBS Trumbull	\$241,303,630	\$281,783,741	\$283,870,481	
Cornerstone	\$4,633,799	\$4,827,296	\$4,889,539	
Heitman	\$1,759,375	\$67,199	\$20,045	
M&G	\$65,700,972	\$54,156,241	\$50,396,856	
Northwood	\$110,742,305	\$145,919,605	\$148,690,820	
SC Capital	\$67,569,302	\$46,068,794	\$70,260,866	
TA Realty	\$1,578,185	\$2,622,422	\$39,114	
WestRiver	\$26,841,651	\$46,326,863	\$47,429,449	
Diversified Hedge Funds	\$458,132,601	\$586,408,113	\$457,589,570	2.2%
PAAMCO - Jackalope	\$38,132,601	\$511,408,113	\$38,257,404	
Grosvenor Diversified Hedge Funds	\$250,000,000	\$31,000,000	\$245,295,958	
Internal Diversified Hedge Funds	\$170,000,000	\$44,000,000	\$174,036,208	
Fixed Income	\$11,972,429,130	\$11,279,881,593	\$11,948,327,612	56.9%
C.S. McKee	\$1,248,784,247	\$1,239,782,750	\$1,265,228,429	
JP Morgan Core	\$1,418,314,072	\$1,398,403,539	\$1,434,631,397	
PIMCO	\$2,176,293,005	\$2,160,523,241	\$2,200,298,904	
Neuberger Berman Credit	\$800,385,341	\$922,183,704	\$797,242,411	
Seix	\$943,160,037	\$948,736,474	\$951,599,841	
Grosvenor Silvery Lupine Fund	\$145,881,767	\$281,156,865	\$193,882,964	
Investec	\$297,714,010	\$197,847,664	\$191,985,355	
Stone Harbor	\$297,712,381	\$186,907,000	\$180,084,972	
State Street TIPS	\$722,964,252	\$723,229,173	\$731,540,532	
Internal Long Duration Govt Portfolio	\$232,038,213	\$0	\$253,419,538	
Logan Circle	\$318,000,000	\$0	\$341,320,699	
Internal Int. Duration Govt Portfolio	\$1,869,586,463	\$1,852,289,491	\$1,889,129,563	
Internal Low Duration Govt Portfolio	\$1,101,595,342	\$1,368,821,692	\$1,108,591,025	
State Street Low Duration	\$400,000,000	\$0	\$409,371,982	
Neuberger Berman Core	\$0	\$1	\$0	
Public Purpose Investments	\$463,692,819	\$324,211,740	\$463,692,819	2.2%
Cash & Cash Equivalents	\$1,863,208,040	\$2,550,134,544	\$1,868,174,291	8.9%
JP Morgan Cash Composite	\$1,863,208,040	\$2,550,134,544	\$1,868,174,291	

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

March 31, 2019

Investment Policy Guidelines	Meeting Objective			Explanation
	Yes	No	N/A	
1. Total Fund				
Exceed the rate of inflation (C.P.I.) over a market cycle of 5-years.	✓			Wyoming returned 4.0% vs. 1.5% 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 4.0% vs. 4.0% for the Actual Allocation Index for the current 5-year period
Not more than 1% of the outstanding common shares of any corporation shall be owned by the State. An exception may be made for Alternative Investments.	✓			
Not more than 1.5% of the total book value of permanent funds shall be invested in the common stock of any corporation. An exception may be made for Alternative Investments.	✓			

	Yes	No	N/A	Explanation
2. Investment Funds				
a) Permanent Mineral Trust Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Permanent Mineral Trust Fund return was 4.6% vs. 4.7% for the Actual Allocation Index
b) Common School Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Common School Permanent Land Fund return was 4.7% vs. 4.8% for the Actual Allocation Index
c) Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Permanent Land Fund return was 4.6% vs. 4.7% for the Actual Allocation Index
d) University Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: University Permanent Land Fund return was 4.9% vs. 5.1% for the Actual Allocation Index
e) Hathaway Scholarship Endowment Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Hathaway Scholarship Endowment Fund return was 4.2% vs. 4.4% for the Actual Allocation Index
f) Higher Education Endowment Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Higher Education Endowment Fund return was 4.2% vs. 4.4% for the Actual Allocation Index
g) Workers Compensation Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Workers Compensation Fund return was 4.0% vs. 4.1% for the Actual Allocation Index
h) Pool A				
At least 5% to 10% of the fund balance should be invested in securities with maturities of less than one year.	✓			
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 2.8% vs. 2.7% for the Actual Allocation Index
i) State Agency Pool				
At least 10% to 15% of the fund balance should be invested in securities with maturities of less than one year.	✓			
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 2.4% vs. 2.3% for the Actual Allocation Index

	Yes	No	N/A	Explanation
3. US Equity Portfolios				
a) State Street Global Advisors – All Cap – Passive				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Apple Inc = 3.03%
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (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.			N/A	Inception date: 01/2015
b) Epoch – All Cap				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Remaining assets held in cash
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (20) securities shall be held.	✓			
Outperform the Russell 3000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2014
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: 11/2014

	Yes	No	N/A	Explanation
c) Internal Equity Russell 2000 – Small Cap - Passive				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Etsy = 0.40%
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (20) securities shall be held.	✓			
Meet 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: 09/2018

	Yes	No	N/A	Explanation
4. International Equity Portfolios				
a) Internal International Equity Portfolio – Int’l – Passive				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Nestle SA = 1.39%
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (20) securities shall be held.	✓			
Meet performance of the FTSE All World Ex US Index (Net), net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception Date: 02/2016
b) Northern Trust – Int’l – Passive				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Nestle SA = 1.54%
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (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 2.7% vs. 2.6% for the MSCI ACW Ex US Index (Net)

	Yes	No	N/A	Explanation
c) Fisher – Int'l Active				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Tencent Holdings Ltd = 4.14%
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (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.	✓			5-year: Fisher net of fees return was 3.6% vs. 2.6% for the MSCI ACW Ex US Index (Net)
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: Fisher ranked in the 41st percentile for International Equity

*Fisher Index consists of MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter.

d) Arrowstreet – Int'l Active				
A maximum of the greater of five percent (5%), or the benchmark weighting plus two percent (2%), of the total stock portfolio of a manager may be invested in any one security.	✓			Largest Holding: Roche Holding AG = 2.60%
A maximum of one percent (1%) of the outstanding float of shares of one company may be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. A maximum of five percent (5%) of the outstanding float of shares of one company may be held in companies with market capitalizations of less than \$5 Billion at the time of purchase.	✓			
The maximum allowable in any sector, as defined as Global Industry Classification System Level 1, is two and one-half (2.5) times the respective benchmark weighting, unless the contract with the investment manager specifically provides otherwise.	✓			
A minimum number of twenty (20) securities shall be held.	✓			
Outperform the MSCI ACW Ex US IM Index (Net), net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
5. Preferred Stock				
a) Cohen & Steers				
Minimum issue credit rating for preferred stock at the time of purchase will be BB or equivalent.	✓			The portfolio currently holds securities which are rated below BB. Retention of these securities in the portfolio is permitted pursuant to Section 7.2 of the Investment Policy.
A maximum of 35% of the total portfolio of the investment manager may be invested in securities rated below investment grade.	✓			
A maximum of 10% of the total portfolio of the investment manager may be invested in any one issuer.	✓			
Outperform the S&P U.S. Preferred Stock Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 07/2018
	Yes	No	N/A	Explanation
6. Convertible Bond Portfolios				
a) Allianz Global Investors				
Outperform the BofA ML All Quality Convertible Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Allianz Global Investors net of fees return was 7.1% vs. 7.1% for the ICE BofAML All Quality Convertible Bond Index
	Yes	No	N/A	Explanation
7. MLPs				
a) Harvest				
A maximum of 15% or the benchmark weighting + 2%, whichever is greater, of the total portfolio may be invested in any one company.	✓			
Outperform the S&P MLP Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 08/2018

	Yes	No	N/A	Explanation
8. Alternative Strategies				
Core Real Estate				
a) Clarion Lion				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Clarion Lion net of fees return was 10.5% vs. 9.2% for the NCREIF ODCE Index (Net) (AWA)
b) UBS Trumbull				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: UBS Trumbull net of fees return was 7.6% vs. 9.2% for the NCREIF ODCE Index (Net) (AWA)
Absolute Return				
c) PAAMCO				
Outperform the 90-Day T-Bills by 300 basis points, net of all fees (including underlying fund manager fees), over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: PAAMCO net of fees return was 0.4% vs. 0.7% for the ICE BofAML 3 Mo US T-Bill Index
Outperform the HFRI FOF Comp Index, net of all fees (including underlying fund manager fees), over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: PAAMCO net of fees return was 0.4% vs. 2.2% for the HFRI FOF Comp Index
d) Grosvenor Diversified Hedge Funds				
Outperform the HFRI FOF Comp Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2018
e) Internal Diversified Hedge Funds				
Outperform the HFRI FOF Comp Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2018

	Yes	No	N/A	Explanation
9. Fixed Income Portfolios				
a) C.S. McKee – Core				
Obligations not issued or guaranteed by the US government, US agencies, or US government-sponsored corporations and agencies are subject to a five percent (5%) per issuer limit excluding investments in commingled vehicles.	✓			
Non-US dollar denominated securities are permitted, but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to ten percent (10%) of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500 million.	✓			
Duration must fall in the range of plus or minus twenty percent (20%) of the Bloomberg Barclays US Aggregate Bond Index.	✓			
Minimum Issue Credit Rating at the time of purchase will be: A1 or equivalent for commercial paper BBB- for Corporate Bonds BBB- for Mortgage-Backed Securities BBB- for Commercial Mortgage-Backed Securities BBB- for Asset-Backed Securities BBB- for Non-US Dollar Denominated Securities BBB- for Dollar Denominated Emerging Market Securities	✓			
Average portfolio credit quality must be A- or better.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
A minimum number of 25 securities shall be held.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than five percent (5%) of the portfolio market value.	✓			
Private placements, including 144A securities are not permitted.	✓			
Outperform its Custom Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: C.S. McKee net of fees return was 2.8% vs. 2.8% for the C.S. McKee Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: C.S. McKee ranked in the 71st percentile for Core Fixed Income

	Yes	No	N/A	Explanation
b) JP Morgan – Core				
Obligations not issued or guaranteed by the US government, US agencies, or US government-sponsored corporations and agencies are subject to a five percent (5%) per issuer limit excluding investments in commingled vehicles.	✓			
Non-US dollar denominated securities are permitted, but shall comprise no more than ten percent (10%) of the portfolio market value.			N/A	
Private mortgage-backed and asset-backed securities are limited to ten percent (10%) of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500 million.			N/A	
Duration must fall in the range of plus or minus twenty percent (20%) of the Bloomberg US Aggregate Bond Index.	✓			
Minimum Issue Credit Rating at the time of purchase will be: A1 or equivalent for commercial paper BBB- for Corporate Bonds BBB- for Mortgage-Backed Securities BBB- for Commercial Mortgage-Backed Securities BBB- for Asset-Backed Securities BBB- for Non-US Dollar Denominated Securities BBB- for Dollar Denominated Emerging Market Securities	✓			
Average portfolio credit quality must be A- or better.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than ten percent (10%) of the portfolio market value.			N/A	
A minimum number of 25 securities shall be held.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than five percent (5%) of the portfolio market value.	✓			
Private placements, including 144A securities are not permitted.	✓			
Outperform the Bloomberg US Aggregate Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: JP Morgan net of fees return was 2.9% vs. 2.7% for the Bloomberg US Aggregate Bond 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: JP Morgan ranked in the 63rd percentile for Core Fixed Income

	Yes	No	N/A	Explanation
c) PIMCO – Core				
Obligations not issued or guaranteed by the US government, US agencies, or US government-sponsored corporations and agencies are subject to a five percent (5%) per issuer limit excluding investments in commingled vehicles.	✓			
Non-US dollar denominated securities are permitted, but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to ten percent (10%) of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500 million.	✓			
Duration must fall in the range of plus or minus twenty percent (20%) of the Bloomberg US Aggregate Bond Index.	✓			
Minimum Issue Credit Rating at the time of purchase will be: A1 or equivalent for commercial paper BBB- for Corporate Bonds BBB- for Mortgage-Backed Securities BBB- for Commercial Mortgage-Backed Securities BBB- for Asset-Backed Securities BBB- for Non-US Dollar Denominated Securities BBB- for Dollar Denominated Emerging Market Securities	✓			
Average portfolio credit quality must be A- or better.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than ten percent (10%) of the portfolio market value.	✓			
A minimum number of 25 securities shall be held.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than five percent (5%) of the portfolio market value.	✓			
Private placements, including 144A securities are not permitted.	✓			
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 2.9% vs. 2.7% for the PIMCO Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: PIMCO ranked in the 51st percentile for Core Fixed Income

	Yes	No	N/A	Explanation
d) Neuberger Berman – Credit				
Duration must not exceed plus two (2) years of the custom index.	✓			
Minimum Issue Credit Rating for commercial paper will be A1.	✓			
Average portfolio credit quality must be B or better.	✓			
Obligations of specific issuers are subject to five percent (5%) per issuer limit, excluding investments in commingled vehicles.	✓			
Standalone purchases of private placements, including 144A securities, are not allowed.	✓			
Outperform the State's custom benchmark as measured by twenty percent (20%) Bloomberg US Credit Index, twenty percent (20%) BofA Merrill Lynch US High Yield Master II Constrained Index and sixty percent (60%) S&P/LSTA Leveraged Loan Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Neuberger Berman net of fees return was 3.3% vs. 3.9% for the Credit Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.	✓			5-year: Neuberger Berman ranked in the 37th percentile for US Fixed Income
Investment Grade Credit Sleeve:				
Minimum Issue Credit Rating at the time of purchase will be: BBB- for individual securities.	✓			
Minimum of ten percent (10%) of the total portfolio must be invested in investment grade rated securities and a maximum of sixty percent (60%) of the total portfolio can be invested in investment grade rated securities.	✓			
High Yield Sleeve:				
Minimum Issue Credit Rating at the time of purchase will be: CCC- for individual securities. Securities that are not rated shall be, in the judgement of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Maximum of forty percent (40%) of the total portfolio can be invested in high yield bonds.	✓			
Bank Loan Sleeve:				
Minimum Issue Credit Rating at the time of purchase will be: CCC for individual securities. Securities that are not rated shall be, in the judgement of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Minimum of forty percent (40%) of the total portfolio must be invested in bank loans and a maximum of eighty percent (80%) of the total portfolio can be invested in bank loans.	✓			

	Yes	No	N/A	Explanation
e) Seix – Credit				
Duration must not exceed plus two (2) years of the custom index.	✓			
Minimum Issue Credit Rating for commercial paper will be A1.	✓			
Average portfolio credit quality must be B or better.	✓			
Obligations of specific issuers are subject to five percent (5%) per issuer limit, excluding investments in commingled vehicles.	✓			
Standalone purchases of private placements, including 144A securities, are not allowed.	✓			
Outperform the State's custom benchmark as measured by twenty percent (20%) Bloomberg US Credit Index, twenty percent (20%) BofA Merrill Lynch US High Yield Master II Constrained Index and sixty percent (60%) S&P/LSTA Leveraged Loan Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Seix net of fees return was 3.8% vs. 3.9% for the Credit Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.	✓			5-year: Seix ranked in the 29th percentile for US Fixed Income
Investment Grade Credit Sleeve:				
Minimum Issue Credit Rating at the time of purchase will be: BBB- for individual securities.	✓			
Minimum of ten percent (10%) of the total portfolio must be invested in investment grade rated securities and a maximum of sixty percent (60%) of the total portfolio can be invested in investment grade rated securities.	✓			
High Yield Sleeve:				
Minimum Issue Credit Rating at the time of purchase will be: CCC- for individual securities. Securities that are not rated shall be, in the judgement of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Maximum of forty percent (40%) of the total portfolio can be invested in high yield bonds.	✓			
Bank Loan Sleeve:				
Minimum Issue Credit Rating at the time of purchase will be: CCC for individual securities. Securities that are not rated shall be, in the judgement of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Minimum of forty percent (40%) of the total portfolio must be invested in bank loans and a maximum of eighty percent (80%) of the total portfolio can be invested in bank loans.	✓			

	Yes	No	N/A	Explanation
f) Grosvenor Silvery Lupine Fund – Opportunistic Fixed Income				
Outperform the CS Western European Hi Yld Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2014
g) Investec – Emerging Market Debt (Local Currency)				
Duration must fall in the range of plus or minus twenty percent (20%) of the index.	✓			
Minimum Issue Credit Rating at the time of purchase will be: A1 for commercial paper B- for individual securities Where a security is not rated at the issue level, the issuer rating will be relied upon.	✓			
Average portfolio credit quality must be BB+ or better.	✓			
Obligations of individual sovereign/quasi-sovereign issuer are subject to a twenty-five percent (25%) per issuer limit.	✓			
Private placements, including 144A securities are not allowed.	✓			There are four 144A securities held by this portfolio. Retention of these securities in the portfolio is permitted pursuant to Section 7.2 of the Investment Policy.
The investment manager, as part of managing the account, can take net investment positions of up to twenty percent (20%) of the portfolio in currency and currency forwards.	✓			
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.		✗		5-year: Investec net of fees return was -1.4% vs. the return of -0.8% for the JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)
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: Investec ranked in the 94th percentile for Emerging Market Debt (Local Currency)

	Yes	No	N/A	Explanation
h) Stone Harbor – Emerging Market Debt (Local Currency)				
Duration must fall in the range of plus or minus twenty percent (20%) of the index.	✓			
Minimum Issue Credit Rating at the time of purchase will be: A1 for commercial paper B- for individual securities Where a security is not rated at the issue level, the issuer rating will be relied upon.	✓			The portfolio currently holds securities which are rated below B-. Retention of these securities in the portfolio is permitted pursuant to Section 7.2 of the Investment Policy.
Average portfolio credit quality must be BB+ or better.	✓			
Obligations of individual sovereign/quasi-sovereign issuer are subject to a twenty-five percent (25%) per issuer limit.	✓			
Private placements, including 144A securities are not allowed.	✓			The portfolio holds private placement and 144A securities. Retention of these securities in the portfolio is permitted pursuant to Section 7.2 of the Investment Policy.
The investment manager, as part of managing the account, can take net investment positions of up to twenty percent (20%) of the portfolio in currency and currency forwards.	✓			
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.		✗		5-year: Stone Harbor net of fees return was -2.4% vs. return of -0.8% for the JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)
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: Stone Harbor ranked in the 100th percentile for Emerging Market Debt (Local Currency)
i) State Street – US TIPS – Passive				
Meet the performance of the Bloomberg US TIPS Index with minimal tracking error, gross of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: State Street gross of fees return was 2.1% vs. 2.1% for the Bloomberg US TIPS Index and a tracking error of 0.3%

	Yes	No	N/A	Explanation
j) Internal Int. Govt Fixed Income Portfolio – Intermediate Govt Fixed Income				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
Non-U.S. Government securities are allowed, up to a maximum of 20% of the portfolio.	✓			
Duration should not exceed +2 years of the index.	✓			
Outperform the Bloomberg US Gov't: Int. Term Bond 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 2.2% vs. return of 1.7% for the Bloomberg US Gov't Int. Term Bond 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 50th percentile for Government Fixed Income

	Yes	No	N/A	Explanation
k) Logan Circle – Long Duration Credit				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
A maximum of 30% of the portfolio may be invested in U.S. dollar denominated non-U.S. fixed income securities.	✓			
A maximum of 10% of the portfolio may be invested in U.S. dollar denominated emerging market securities.	✓			
A maximum of the appropriate benchmark plus 5% of the portfolio may be invested in convertible and municipal securities.	✓			
Portfolio duration for long duration bond portfolios must be within plus or minus 2 years of the Bloomberg Barclays U.S. Government/Credit: Long Term Bond Index. Custom portfolios designed to match the duration of plan liabilities must be within plus or minus 1 year of the duration of plan liabilities.	✓			
Average portfolio quality will be BBB+ or better. Securities shall be rated investment grade at time of purchase.	✓			
Outperform the Bloomberg US Long Credit Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2018
	Yes	No	N/A	Explanation
l) Internal Long Duration – Long Duration Government				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
A maximum of 30% of the portfolio may be invested in U.S. dollar denominated non-U.S. fixed income securities.	✓			
A maximum of 10% of the portfolio may be invested in U.S. dollar denominated emerging market securities.	✓			
A maximum of the appropriate benchmark plus 5% of the portfolio may be invested in convertible and municipal securities.	✓			
Portfolio duration for long duration bond portfolios must be within plus or minus 2 years of the Bloomberg Barclays U.S. Government/Credit: Long Term Bond Index. Custom portfolios designed to match the duration of plan liabilities must be within plus or minus 1 year of the duration of plan liabilities.	✓			
Average portfolio quality will be BBB+ or better. Securities shall be rated investment grade at time of purchase.	✓			
Outperform the Bloomberg US Gov Long Term Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 01/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2019

	Yes	No	N/A	Explanation
m) State Street – Low Duration Credit				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
Corporate securities will be subject to a maximum limit of 60%.			N/A	This portfolio is managed specifically as a credit portfolio. The low duration asset class mandate has been split into an internal government component and an external credit component.
Agency Mortgage Backed Securities ("MBS") will be subject to a maximum limit of 5%. Non-agency MBS are not permissible.	✓			
Asset Backed Securities ("ABS"), excluding CMBS, will be subject to a maximum limit of 10%. Minimum rating at time of purchase is AAA, with the exception of up to 5% maximum ABS rated below AAA but no lower than A.	✓			
Commercial Mortgage Backed Securities ("CMBS") are subject to a maximum limit of 5%.	✓			
Portfolio duration must be within plus or minus 30% of the Bloomberg Barclays US Gov't/Credit: 1-3 Year Bond Index.	✓			
Meet the performance of the Bloomberg US Credit 1-3 Bond Year Index with minimal tracking error, gross of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 12/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 12/2018
	Yes	No	N/A	Explanation
n) Internal Low Duration – Low Duration Government				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
Corporate securities will be subject to a maximum limit of 60%.	✓			
Agency Mortgage Backed Securities ("MBS") will be subject to a maximum limit of 5%. Non-agency MBS are not permissible.	✓			
Asset Backed Securities ("ABS"), excluding CMBS, will be subject to a maximum limit of 10%. Minimum rating at time of purchase is AAA, with the exception of up to 5% maximum ABS rated below AAA but no lower than A.	✓			
Commercial Mortgage Backed Securities ("CMBS") are subject to a maximum limit of 5%.	✓			
Portfolio duration must be within plus or minus 30% of the Bloomberg Barclays US Gov't/Credit: 1-3 Year Bond Index.	✓			
Outperform the Bloomberg US Gov 1-3 Year Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 03/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
10. Cash and Cash Equivalents Portfolios				
JP Morgan Cash Composite*				
a) JP Morgan Treasury Cash				
Portfolio's weighted average maturity is not to exceed 90 days.	✓			
Portfolio's maximum average cash flow weighted duration of the portfolio must not exceed 90 days.	✓			
The market value of the portfolio must remain within plus or minus one-half percent (0.5%) of one percent (1%) of amortized cost.	✓			
A maximum of 5% of total assets shall be placed in the securities of one issuer except for government securities.	✓			
Investment in any single issuer must not exceed 5% of the outstanding issues of that 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 Treasury Cash net of fees return was 0.7% vs. 0.7% for the ICE BofAML 3 Mo US T-Bill Index
b) JP Morgan Treasury Extended Cash				
Portfolio's average cash flow weighted duration is not to exceed 3 years.	✓			
Average cash flow weighted duration is not to exceed 3 years.	✓			
Individual securities must not exceed cash flow weighted duration of greater than 5-years.	✓			
A maximum of 5% of total assets shall be placed in the 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 Treasury Extended Cash net of fees return was 1.3% vs. 1.1% for the Blended Index
The extended portfolio must not exceed 35% of the total JP Morgan managed portfolio.	✓			

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

	Yes	No	N/A	Explanation
JP Morgan Wyo-Star Cash Composite*				
c) JP Morgan Wyo-Star Cash				
Portfolio's weighted average maturity is not to exceed 90 days.	✓			
Portfolio's maximum average cash flow weighted duration of the portfolio must not exceed 90 days.	✓			
The market value of the portfolio must remain within plus or minus one-half percent (0.5%) of one percent (1%) of amortized cost.	✓			
A maximum of 5% of total assets shall be placed in the 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 Wyo-Star Cash net of fees return was 0.7% vs. 0.7% for the ICE BofAML 3 Mo US T-Bill Index
d) JP Morgan Wyo-Star Extended Cash				
Portfolio's average cash flow weighted duration is not to exceed 3 years.	✓			
Average cash flow weighted duration is not to exceed 3 years.	✓			
Individual securities must not exceed cash flow weighted duration of greater than 5-years.	✓			
A maximum of 5% of total assets shall be placed in the securities of one issuer except for government securities.	✓			
Investment Performance must exceed an Equal Weighted Blend of the BofA Merrill Lynch 1-3 Year Agency, 1-3 Year Treasury, and a 0-3 Year Mortgage Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: JP Morgan Wyo-Star Extended Cash net of fees return was 1.1% vs. 1.1% for the Blended Index
The extended portfolio must not exceed 35% of the total JP Morgan managed portfolio.	✓			

*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.

Custom Benchmark Comments

The Wyoming State Actual Allocation Index is calculated using beginning month asset class weights applied to the appropriate asset class benchmark return, using the US Equity Custom Index for US equities, MSCI ACW Ex US Index (Net) for international equities, manager specific benchmarks for fixed income, ICE BofA Merrill Lynch All Convertibles Index (All Qualities) for convertible bonds, NCREIF Open-End Diversified Core Equity Index (Gross) (AWA) for core real estate, NCREIF Property Index for value-added real estate, the State's actual private equity investment returns 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.

Pooled Fund actual allocation indices are calculated using beginning month asset class weights applied to the appropriate asset class benchmark return, using the US Equity Custom Index for US equities, MSCI ACW Ex US Index (Net) for international equities, manager specific benchmarks for fixed income, ICE BofA Merrill Lynch All Convertibles Index (All Qualities) for convertible bonds, NCREIF Open-End Diversified Core Equity Index for core real estate, NCREIF Property Index for value-added real estate, the State's actual private equity investment returns for private equity, HFRI FOF Comp Index for Diversified Hedge Funds, and the State Agency Pool Custom Index for the State Agency Pool allocation.

The US Equity Custom Index consists of the S&P 500 Index (Cap Wtd) through September 2014 and the Russell 3000 Index thereafter.

The State Street All Cap Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index and 7% MSCI USA Minimum Volatility Index (Net).

The International Equity Custom Index and the Fisher Custom Benchmark both consist of MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter.

The Credit Custom Index consists of 20% Bloomberg US Credit Index, 20% ICE BofA Merrill Lynch US High Yield Master II Constrained Index, and 60% S&P/LSTA Leveraged Loan Index.

The Internal Intermediate Govt Fixed Income Portfolio Custom Index consists of the Bloomberg US Gov't: Int. Term Bond Index; prior to December 2009 the index consists of the Bloomberg US Gov't/Credit Bond Index.

The C.S. McKee Custom Index consists of the Bloomberg US Agg Bond Index through January 2018 and the Bloomberg US Agg Int Index thereafter.

The PIMCO Custom Index consists of the Bloomberg US Agg Bond Index through February 2018 and the Bloomberg US Agg Int Index thereafter.

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

The JP Morgan 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 JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index.

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 value-added 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 value-added 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".

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.

Addendum

Miscellaneous Comments (Continued)

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.

Glossary

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

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

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

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

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

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

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

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

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

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

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS) which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector, as defined by S&P Capital IQ data.

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.

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, 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.

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.

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.



Glossary

- 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.
- 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.
- Unemployment Rate** - The percentage of the total labor force that is unemployed but actively seeking employment.
- 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, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative monthly returns. 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 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.

Glossary

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. Plan Sponsor Peer Groups are gross of fees.

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. For more information on Peer Groups, visit <https://www.invmetrics.com/style-peer-groups>.

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

1 - Highest Statistical Value

100 - Lowest Statistical Value

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

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

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

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

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

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

Price to Earnings Ratio - The ratio of a company's share price to its per-share earnings

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.

Return - Compounded rate of return for the period.

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

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.

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	Bank Loans	50
TIPS	95	Stable Value (Plan Sponsor Directed)	50
US Large Cap Equity	95	Absolute Return Strategies	35
Diversified Real Return	93		
Stable Value (Participant Directed)	91		
Non-US Large Cap Equity	90	<u>Not Liquid Investments</u>	
Global Tactical Asset Allocation	88	Core Real Estate	25
US Small Cap Equity	85	Core Plus Real Estate	15
REITS	85	Non-Core Real Estate	5
Non-US Small Cap Equity	85	Private Equity Funds of Funds	5
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.

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

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		

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.

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

Glossary

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 portfolios 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.

PORTLAND

CHICAGO

NEW YORK

Disclaimer of Warranties and Limitation of Liability - This document was prepared by RVK, Inc. (RVK) and may include information and data from some or all of the following sources: client staff; custodian banks; investment managers; specialty investment consultants; actuaries; plan administrators/record-keepers; index providers; as well as other third-party sources as directed by the client or as we believe necessary or appropriate. RVK has taken reasonable care to ensure the accuracy of the information or data, but makes no warranties and disclaims responsibility for the accuracy or completeness of information or data provided or methodologies employed by any external source. This document is provided for the client's internal use only and does not constitute a recommendation by RVK or an offer of, or a solicitation for, any particular security and it is not intended to convey any guarantees as to the future performance of the investment products, asset classes, or capital markets.

