

RVK

Quarterly Executive Summary

Pennsylvania State Employees' Retirement System
Defined Benefit Plan

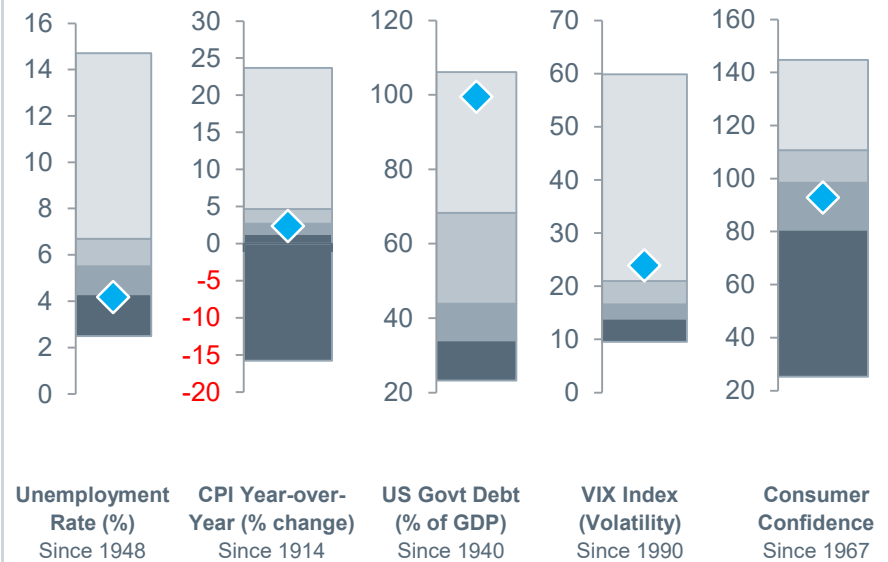
March 31, 2025

Capital Markets Review

First Quarter Economic Environment

An upward trend in the US equity market during the beginning weeks of Q1 reversed sharply as the quarter progressed. The emergence of DeepSeek, an artificial intelligence (AI) tool developed in China, negatively impacted investor sentiment for companies at the top of the US equity market as well as other companies tied to the AI theme. The combination of the volatility among companies with valuations tied to AI and the looming risks regarding US tariff policy led to a negative quarter for US stocks. Equity markets in Europe and Japan were more resilient, while China stocks experienced a positive quarter. Aggregate bond markets delivered positive results in Q1, supported by declining Treasury yields, upward price movement among securitized debt and a generally positive outlook on corporate debt. However, Q1 trends were overshadowed by significant volatility after quarter-end. On April 2nd, the US announced a much broader and higher rate tariff policy than markets expected across a wide range of trading partners, causing further downward pressure on risk asset prices and heightened volatility. After the tariffs became effective on April 9th, a 90 day pause was announced, which led to a rebound in risk asset prices and relatively lower equity market volatility. While recession probabilities declined following the tariff pause, the market generally appears to expect current trade policies and the uncertainty of future related actions to be a drag on global economic growth.

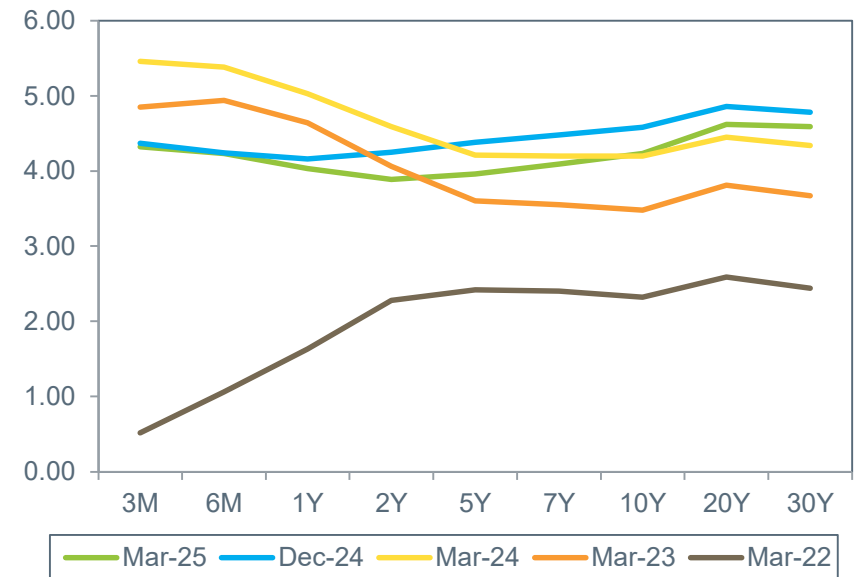
Key Economic Indicators

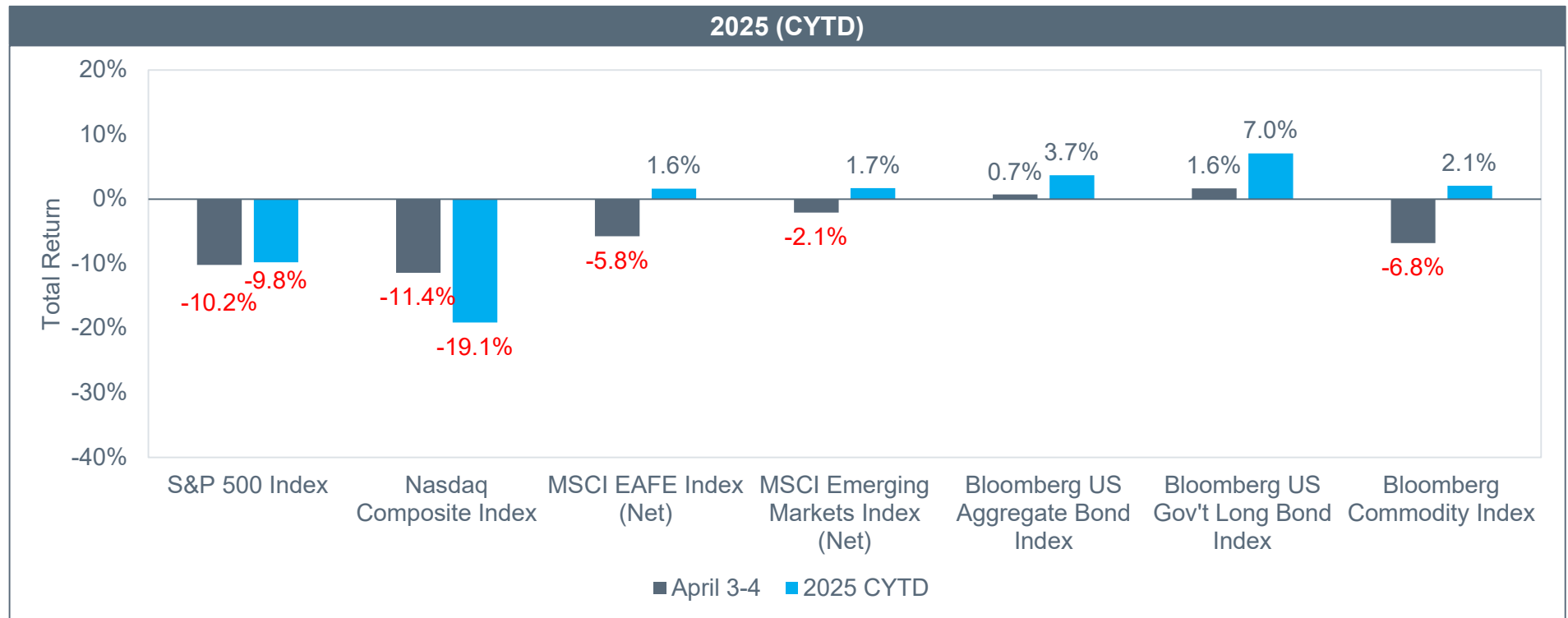


Economic Indicators	Mar-25	Dec-24	Mar-24	Mar-22	20 Yr
Federal Funds Rate (%)	4.33	4.33	5.33	0.33	1.70
Breakeven Infl. - 5 Yr (%)	2.63	2.37	2.44	3.43	1.93
Breakeven Infl. - 10 Yr (%)	2.37	2.33	2.32	2.83	2.08
CPI YoY (Headline) (%)	2.4	2.9	3.5	8.5	2.6
Unemployment Rate (%)	4.2	4.1	3.8	3.6	5.8
Real GDP YoY (%)	2.0	2.5	2.9	3.6	2.0
PMI - Manufacturing	49.0	49.2	50.3	57.1	52.8
USD Total Wtd Idx	126.94	129.49	121.41	115.35	104.63
WTI Crude Oil per Barrel (\$)	71.5	71.6	83.2	100.3	72.2
Gold Spot per Oz (\$)	3,118	2,612	2,230	1,937	1,364

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	-4.27	-4.27	8.25	18.59	12.50
Russell 2000	-9.48	-9.48	-4.01	13.27	6.30
MSCI EAFE (Net)	6.86	6.86	4.88	11.77	5.40
MSCI EAFE SC (Net)	3.69	3.69	3.10	9.89	5.34
MSCI Emg Mkts (Net)	2.93	2.93	8.09	7.94	3.71
Bloomberg US Agg Bond	2.78	2.78	4.88	-0.40	1.46
ICE BofAML 3 Mo US T-Bill	1.02	1.02	4.97	2.56	1.87
NCREIF ODCE (Gross)	1.05	1.05	2.02	2.89	5.64
FTSE NAREIT Eq REIT (TR)	0.91	0.91	9.94	11.35	5.34
HFRI FOF Comp	-0.63	-0.63	4.11	7.05	3.47
Bloomberg Cmtty (TR)	8.88	8.88	12.28	14.51	2.77

Treasury Yield Curve (%)





- In uncertain times such as these, two foundational investment principles become paramount: diversification and strategic consistency.
- After two years (2023 and 2024) during which diversification was not rewarded, it was easy to lose sight of its demonstrated benefits through risk mitigation and long-term returns. 2025 has, thus far, been a year in which diversification could prove more valuable than the recent past.
- RVK continues to recommend disciplined adherence to asset allocation and potential rebalancing policies that have been carefully crafted in advance to help ensure strategic consistency through times of volatility reflective of a client's (1) purpose, (2) circumstances, and (3) appropriate time horizon.

First Quarter Review

Broad Market

In Q1, there was a pullback in US equity markets with the Russell 3000 Index declining -4.7% amid trade policy uncertainty and concerns around foreign competition for US companies tied to the AI theme. In a reverse of previous trends, the “Magnificent Seven” stocks were the negative contributors to Russell 1000 Index performance, with the two biggest detractors being NVIDIA (-19.3%) and Apple (-11.2%).

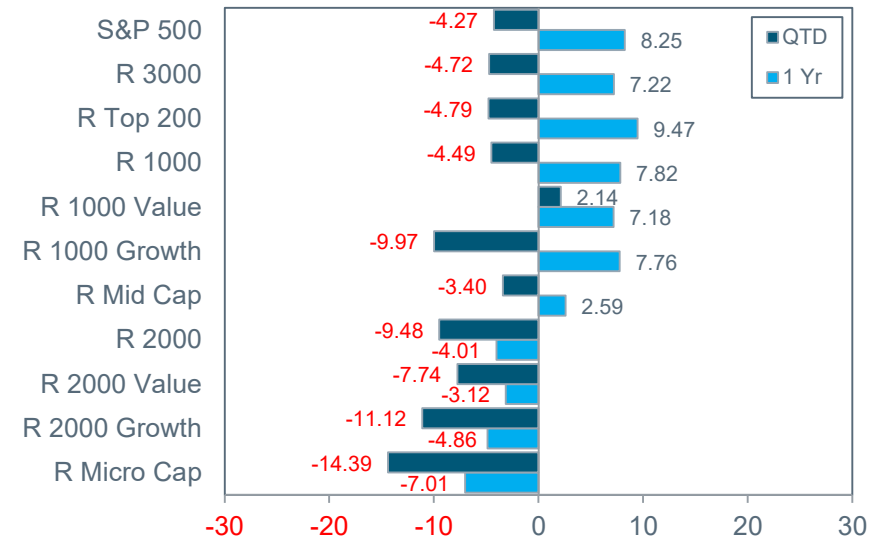
Market Cap

Growth stocks were hit particularly hard, with the Russell 1000 Growth Index and the Russell 2000 Growth Index returning -10.0% and -11.1%, respectively. The negative performance of the large-cap segment, represented by the Russell 1000 Index, was mostly attributable to a drop in the Information Technology and Consumer Discretionary sectors, down -12.7% and -13.8%, respectively.

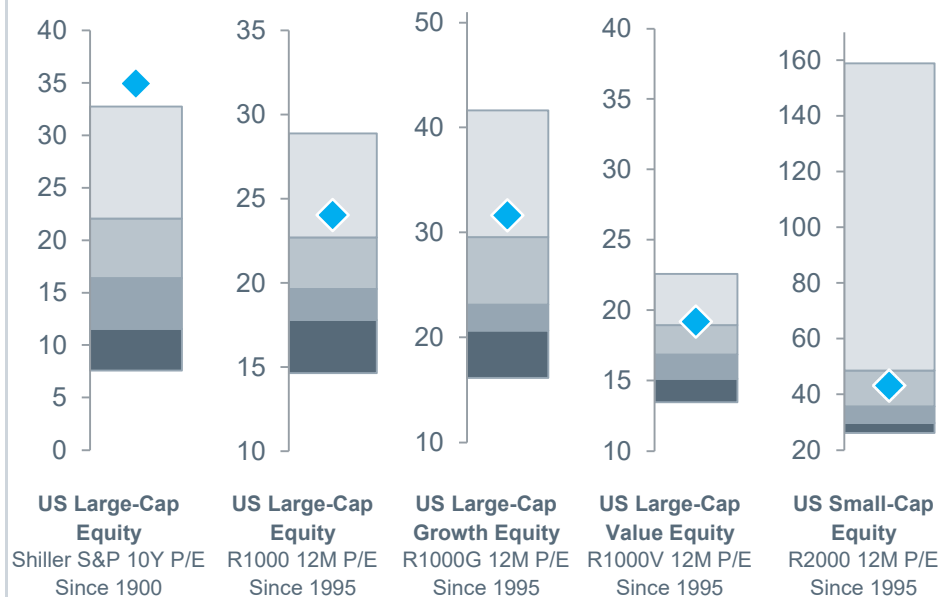
Style and Sector

Active managers fared well the quarter, with the median manager in large- and small-cap outperforming their respective benchmark. The only exception was large-cap value managers, who struggled to outperform a market index led more by rotations into less volatile, defensive companies than quality.

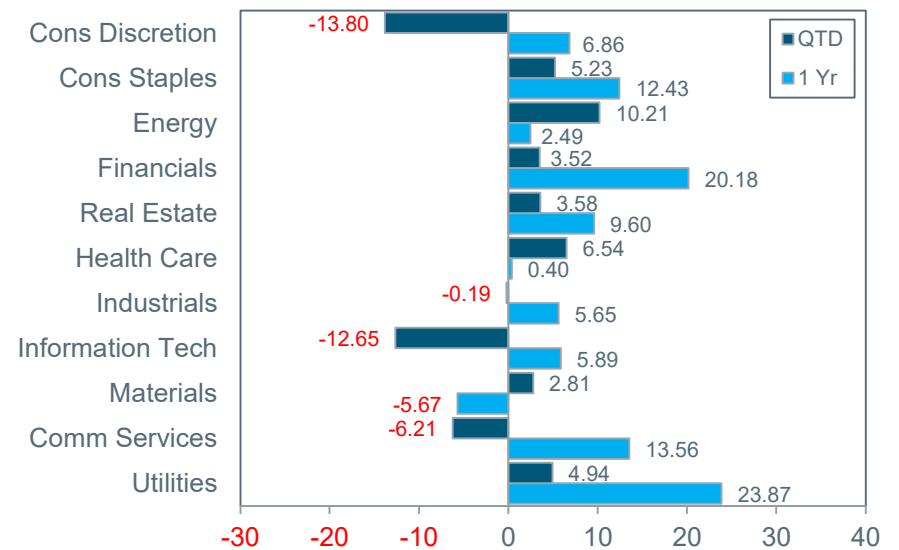
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



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

First Quarter Review

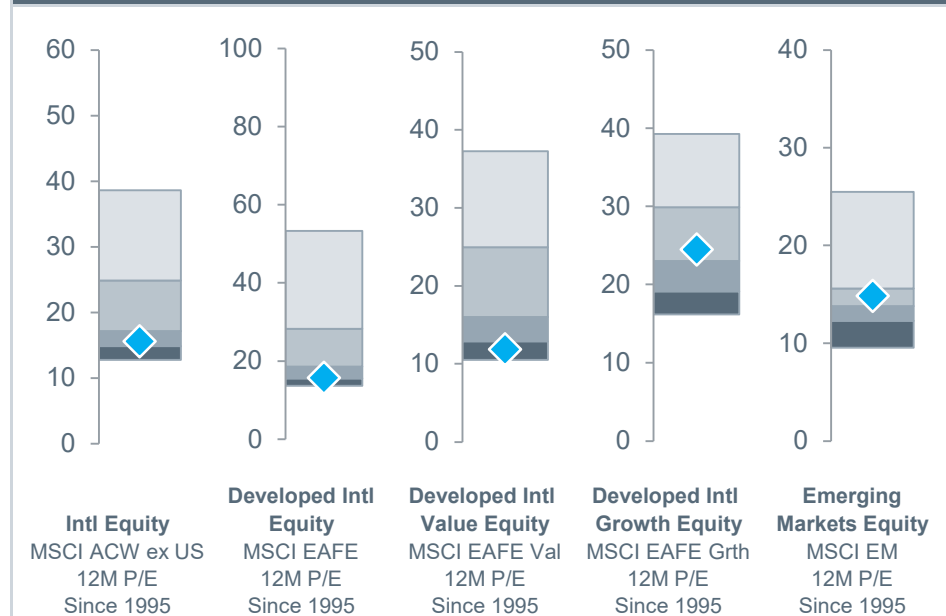
Developed Markets

Developed international markets significantly outperformed the US in Q1, with the MSCI EAFE Index posting a 6.9% return for the quarter. International value stocks continued to outperform growth stocks. Over the trailing 12 months, the MSCI EAFE Value Index has outperformed its growth counterpart by 15.5%. International small-cap continued to lag large-cap but remained in positive territory. Europe was the top performing developed region in Q1, supported by substantial fiscal stimulus that expanded defense and infrastructure spending. Most active international managers outperformed in Q1 across all styles and market capitalizations.

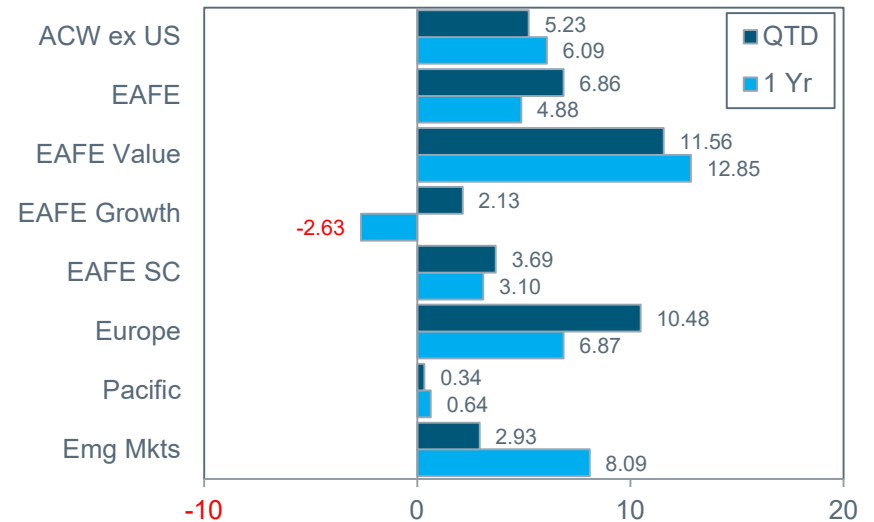
Emerging Markets

Emerging markets underperformed developed markets in Q1, with the MSCI Emerging Markets Index returning 2.9%. Within emerging markets, value stocks outperformed growth stocks, while large-cap stocks significantly outperformed small-cap stocks, each a reversal from the prior quarter. Emerging small-cap stocks were the one broad area of weakness in an otherwise positive international market landscape. Despite persistent structural challenges in the real estate sector and concerns about the impact of tariffs, China experienced a significant market rebound, led by the Technology sector, given optimism for the sector following the release of the DeepSeek model in late January.

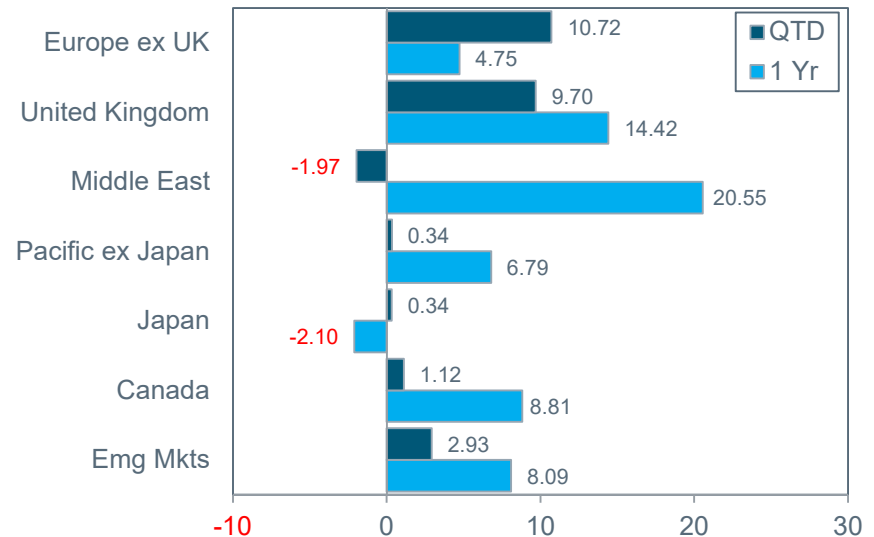
Valuations



MSCI Style and Capitalization Market Performance (%)



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 net taxes on dividends.

First Quarter Review

Broad Market

The first quarter was marked by broad fixed income market uncertainty, driven by mixed economic signals and the looming threat of US tariffs and related trade tensions. The US Federal Reserve held policy rates steady in March at 4.25%–4.50%, with mixed dot plot signals and a lowered 2025 GDP forecast reflecting differing economic expectations among FOMC members. The US Federal Reserve also slowed the balance sheet runoff by cutting monthly Treasury redemptions, while maintaining the cap for Agency MBS. Treasury yields mirrored the shifting sentiment, with the 10-year Treasury yield climbing to 4.79% in January before retreating to 4.23% by quarter-end. The Bloomberg US Aggregate Bond Index returned 2.8% during the quarter.

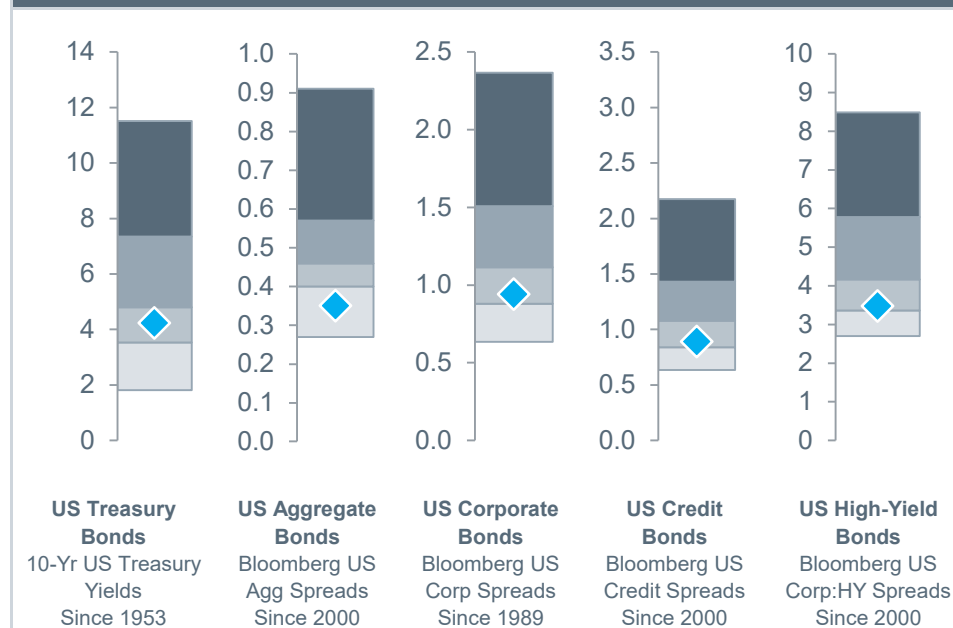
Credit Market

A risk-off tone led to a pullback in risk assets, with higher-quality bonds outperforming lower-quality ones. The Bloomberg US Corporate Investment Grade Index returned 2.3% in Q1, while the Bloomberg US Corporate High Yield Index gained 1.0%.

Emerging Market Debt

With the backdrop of a weaker US dollar relative to local EMD currencies, the JPMorgan EMBI Global Diversified Index (hard currency) returned 2.2%, underperforming the JPMorgan GBI-EM Global Diversified Index (local currency), which gained 4.3% for the quarter.

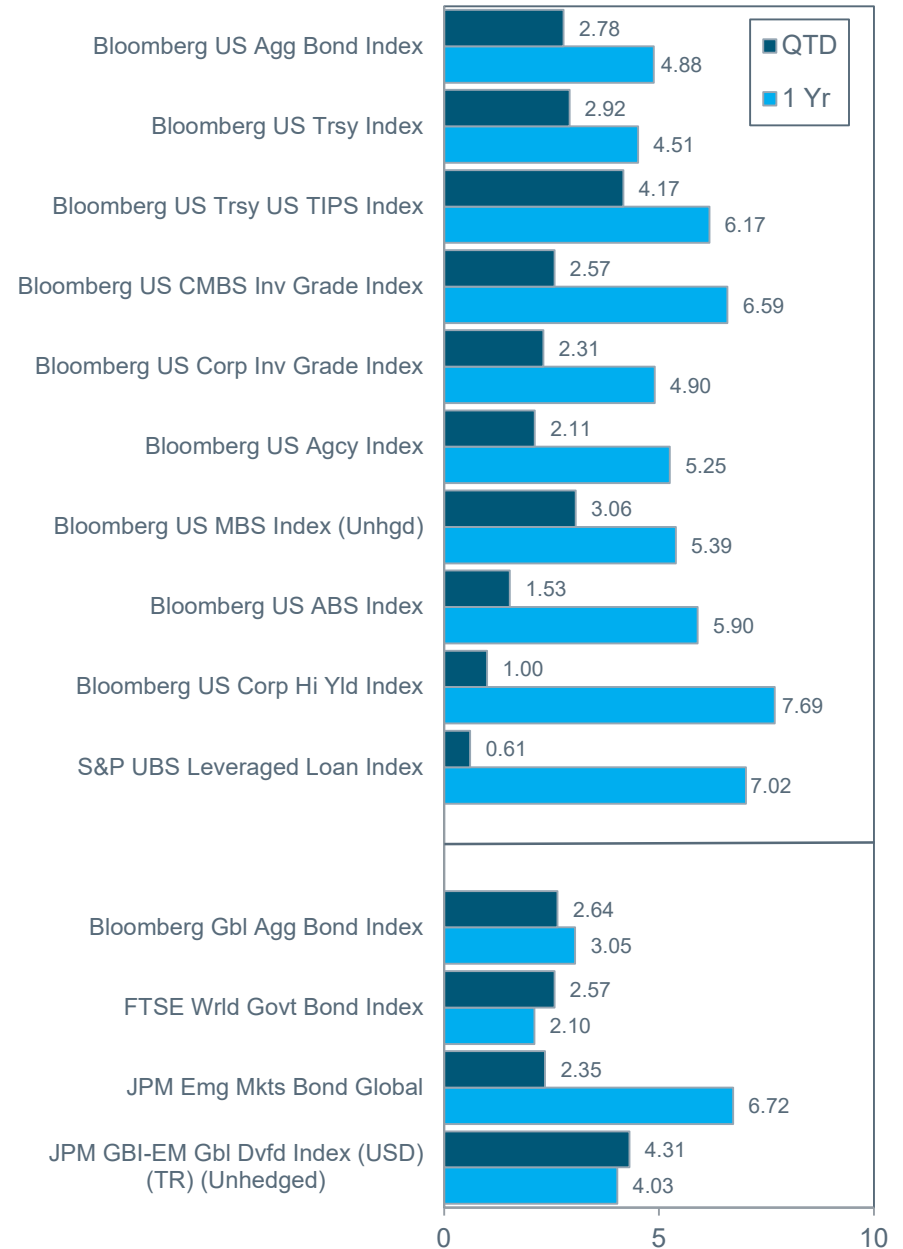
Valuations



Valuation data courtesy of Bloomberg Professional Service.

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

Fixed Income Performance (%)



First Quarter Review - Absolute Return

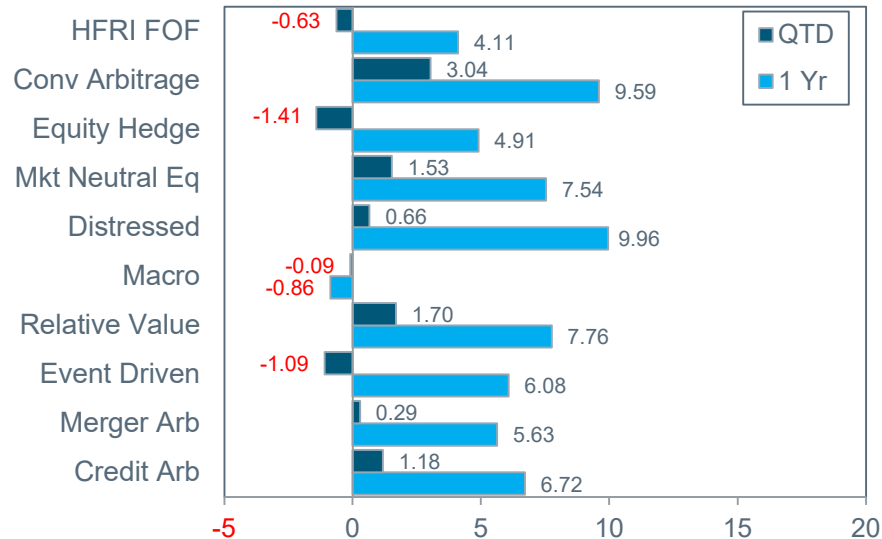
General Market - Hedge Funds

Hedge funds began the year with mixed results, as global markets experienced turbulence in March from rising fears of a trade war. Preliminary performance suggests that the HFRI Asset Weighted Composite Index finished the quarter with a modest positive return of 0.6%. Directional strategies generally suffered the most during the March sell-off, reversing many longer-term trends. The quarter generally resulted in losses for both long-biased hedged equity managers and trend-following managers. Equity Market Neutral and other relative value strategies fared much better than their directional peers.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies that RVK follows closely generated disparate performance in the first quarter, but all outperformed a static, US centric blend of 60% equity and 40% fixed income (60/40 blend). The top performing long-biased GTAA strategies were those that featured a higher allocation to fixed income, particularly US Treasuries and international equities emphasizing a value orientation. Managers who trailed peers held higher exposures to US equities and growth-oriented stocks, particularly those in the Technology and Communication Services sectors.

HFRI Hedge Fund Performance (%)



First Quarter Review - Real Assets

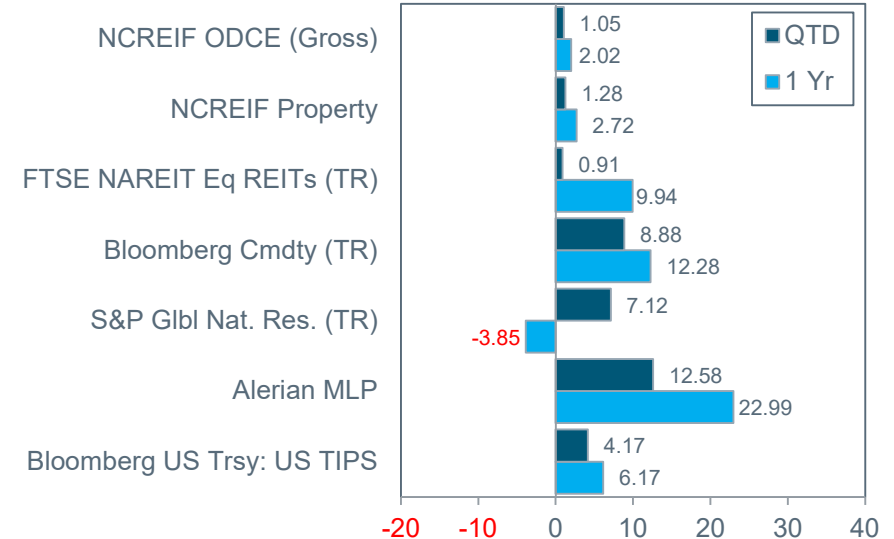
General Market - Diversified Inflation Strategies (DIS)

Diversified Inflation Strategy (DIS) managers tracked closely by RVK reported positive performance for the quarter and outperformed a 60/40 blend. The top performing managers held larger exposures to interest rate strategies in the US and Europe, as well as global listed infrastructure. Managers that lagged peers had higher exposure to global real estate and natural resource equities, particularly in the underlying Energy, Metals & Mining, and Agriculture sectors.

General Market - Real Estate

Core private real estate generated a positive 1.05% total return in Q1 (on a preliminary and gross of fee basis), as reported by the NFI-ODCE Index, with income and price appreciation contributing 1.01% and 0.04% to the total return, respectively. Q1 was the second consecutive quarter of positive appreciation returns after nine consecutive quarters of negative price appreciation for the NFI-ODCE. Investors of publicly traded real estate outperformed their private market counterparts. Publicly traded real estate delivered a first quarter total return of 2.9%, as measured by the FTSE/NAREIT All REITs Index. Negative price appreciation in institutional real estate continues to slow, and there are encouraging signs of stabilization with small levels of price appreciation.

Real Asset Performance (%)



Annual Asset Class Performance

As of March 31, 2025

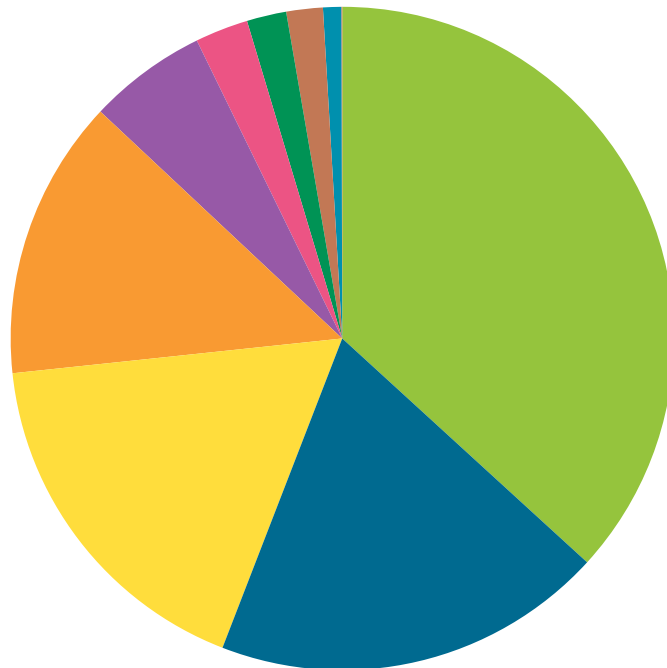
<div>Best</div> <div>↑</div> <div>↓</div> <div>Worst</div>	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	YTD
	22.49	20.00	38.82	30.14	15.02	21.31	37.28	8.35	31.49	19.96	43.24	16.09	26.29	25.02	8.88
	15.99	18.23	32.39	19.31	9.59	17.13	33.01	1.87	26.00	18.40	28.71	7.47	18.24	11.54	6.86
	13.56	18.06	29.30	13.69	3.20	11.96	25.03	0.01	25.53	18.31	27.11	1.46	16.93	9.15	4.17
	8.29	17.32	22.78	12.50	1.38	11.77	21.83	-1.26	24.96	16.12	22.17	-5.31	13.73	8.73	3.69
	7.84	16.35	13.94	5.97	0.55	11.19	14.65	-2.08	22.01	12.34	14.82	-11.19	13.45	8.19	3.57
	4.98	16.00	8.96	4.89	0.05	8.77	10.71	-4.02	19.59	10.99	11.26	-11.85	13.16	7.50	2.93
	2.11	15.81	7.44	3.64	-0.27	8.52	7.77	-4.38	18.42	10.88	10.10	-13.01	9.83	5.38	2.78
	0.10	10.94	2.47	3.37	-0.81	6.67	7.62	-4.62	14.32	7.82	6.17	-14.45	7.13	5.25	1.05
	-4.18	8.78	0.07	2.45	-1.44	4.68	7.50	-4.68	8.72	7.51	5.96	-18.11	6.07	3.82	1.02
	-5.72	6.98	-2.02	0.04	-3.30	2.65	5.23	-11.01	8.43	7.11	5.28	-20.09	5.53	1.84	1.00
	-12.14	4.79	-2.60	-2.19	-4.41	2.18	3.54	-11.25	8.39	1.19	0.05	-20.44	5.02	1.82	0.91
	-13.32	4.21	-8.61	-4.90	-4.47	1.00	3.01	-13.79	7.69	0.67	-1.55	-21.39	3.90	1.25	-0.63
	-15.94	0.11	-8.83	-4.95	-14.92	0.51	1.70	-14.57	5.34	-3.12	-2.52	-24.34	-7.91	-1.43	-4.27
	-18.42	-1.06	-9.52	-17.01	-24.66	0.33	0.86	-17.89	2.28	-8.00	-2.54	-27.09	-12.02	-4.15	-9.48
S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l Dev.	MSCI EAFE SC (Net) - Int'l SC	MSCI EM (Net) - Int'l Emg Mkts	Bloombrg US Agg Bond - FI	Bloombrg US Corp Hi Yield - FI	Bloombrg US Trsry US TIPS - FI	Bloombrg US Gov Credit Lng - FI	NCREIF ODCE (Gross) - Real Estate	FTSE NAREIT Eq REITs Index (TR)	HFRI FOF Comp Index - ARS	Bloombrg Cmdty (TR) - Commod.	ICE BofAML 3 Mo T-Bill - Cash Equiv		

NCREIF ODCE (Gross) performance is reported quarterly; performance is shown N/A in interim-quarter months.

Total Fund

Asset Allocation

March 31, 2025 : \$38,202,777,334



	Market Value (\$)	Allocation (%)
U.S. Equity	14,054,096,648	36.79
Fixed Income	7,293,481,851	19.09
Private Equity	6,666,649,200	17.45
International Developed Markets Equity	5,218,960,312	13.66
Real Estate	2,206,854,347	5.78
Inflation Protection (TIPS)	989,092,674	2.59
Cash	737,806,885	1.93
Emerging Markets Equity	679,941,624	1.78
Legacy Private Credit	339,769,993	0.89
Legacy Hedge Funds	15,139,602	0.04
Northern Trust Equity Transition	977,864	0.00
Liquidated Holdings	6,334	0.00
Northern Trust Fixed Income Transition	-	0.00

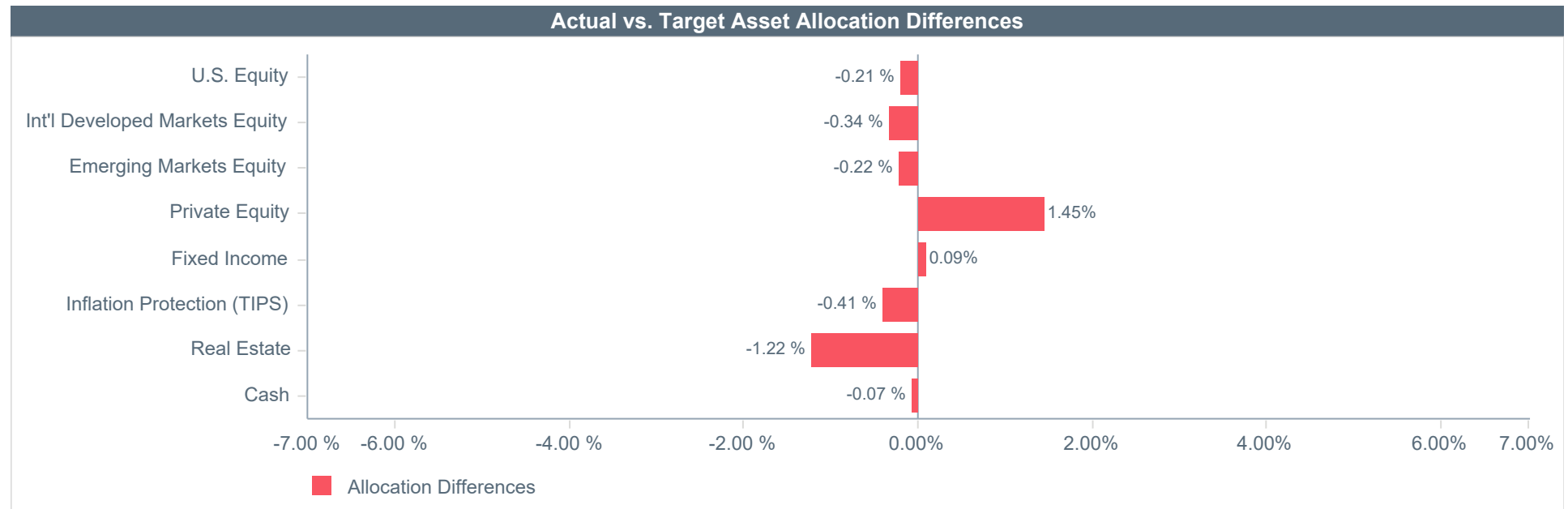
Schedule of Investable Assets

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return
MTD	39,205,898,915	-123,185,134	-879,936,448	38,202,777,334	-2.24

Performance shown is net of fees.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Total Fund Asset Allocation vs. Target Allocation

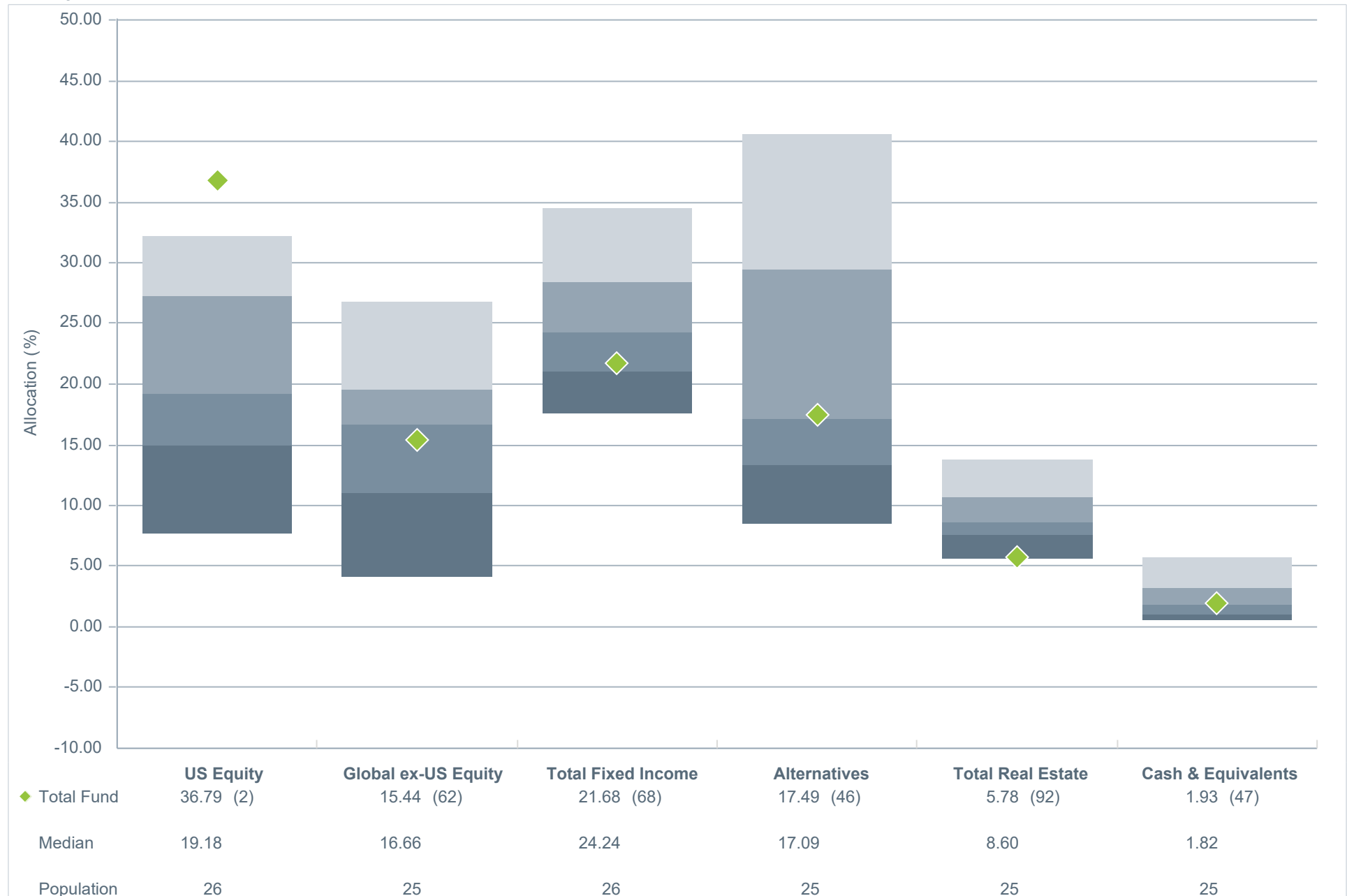
As of March 31, 2025



Asset Allocation vs. Target					
	Asset Allocation (\$000)	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)
Total Fund	38,202,777	100.00	-	-	100.00
U.S. Equity	14,054,097	36.79	32.00	42.00	37.00
International Developed Markets Equity	5,218,960	13.66	9.00	19.00	14.00
Emerging Markets Equity	679,942	1.78	0.00	4.00	2.00
Fixed Income	7,293,482	19.09	14.00	24.00	19.00
Inflation Protection (TIPS)	989,093	2.59	0.00	6.00	3.00
Private Equity	6,666,649	17.45	14.00	18.00	16.00
Real Estate	2,206,854	5.78	0.00	100.00	7.00
Cash	737,807	1.93	0.00	7.00	2.00

Pennsylvania State Employees' Retirement System Defined Benefit Plan
All Public DB Plans (>\$10B) (Custom PG)
Plan Sponsor TF Asset Allocation

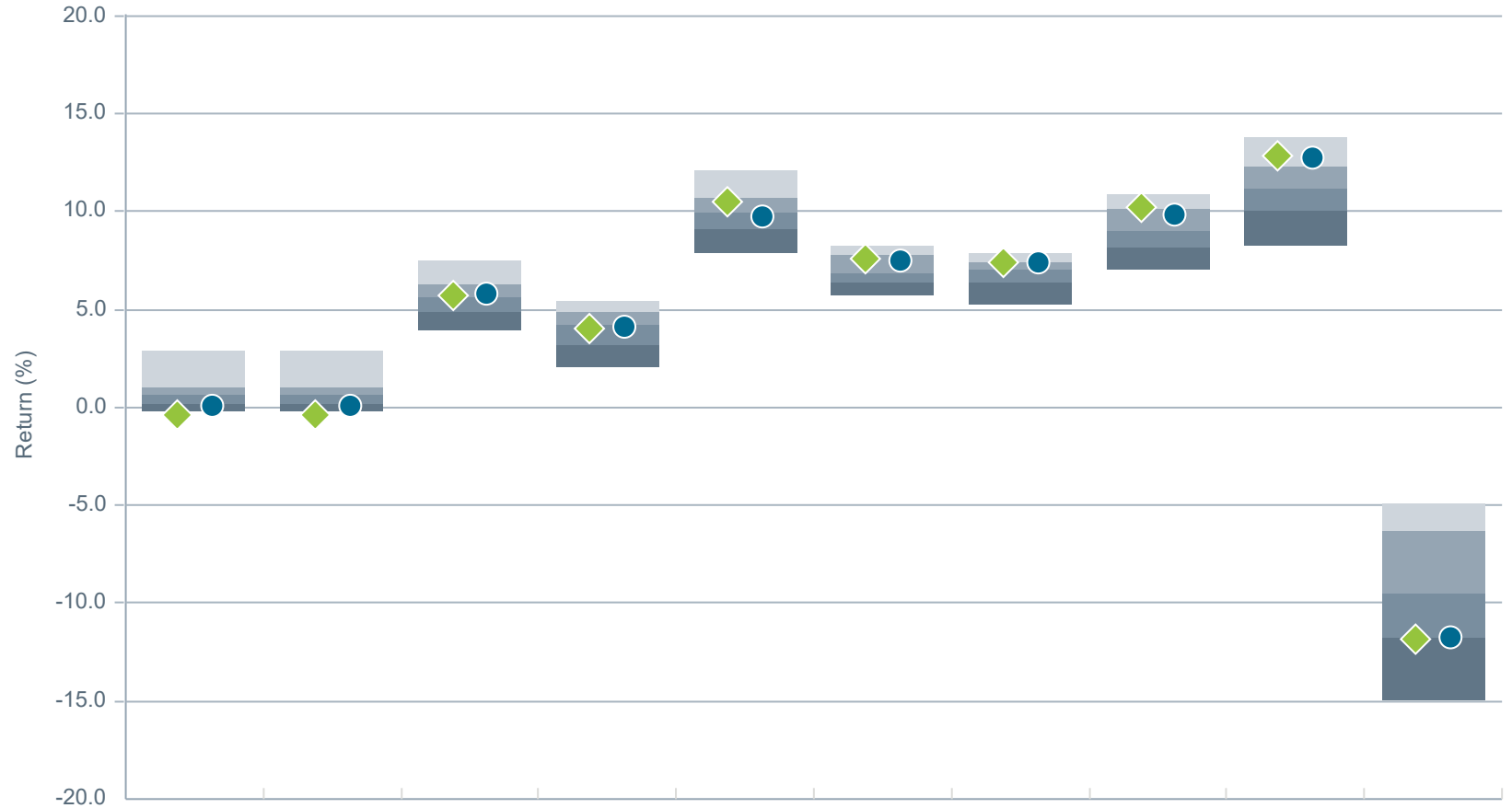
As of March 31, 2025



Parentheses contain percentile ranks. Allocation to "Alternatives" includes Private Equity, Legacy Private Credit, and Legacy Hedge Funds.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
All Public DB Plans (>\$10B) (Custom PG)
Plan Sponsor Peer Group Analysis

As of March 31, 2025

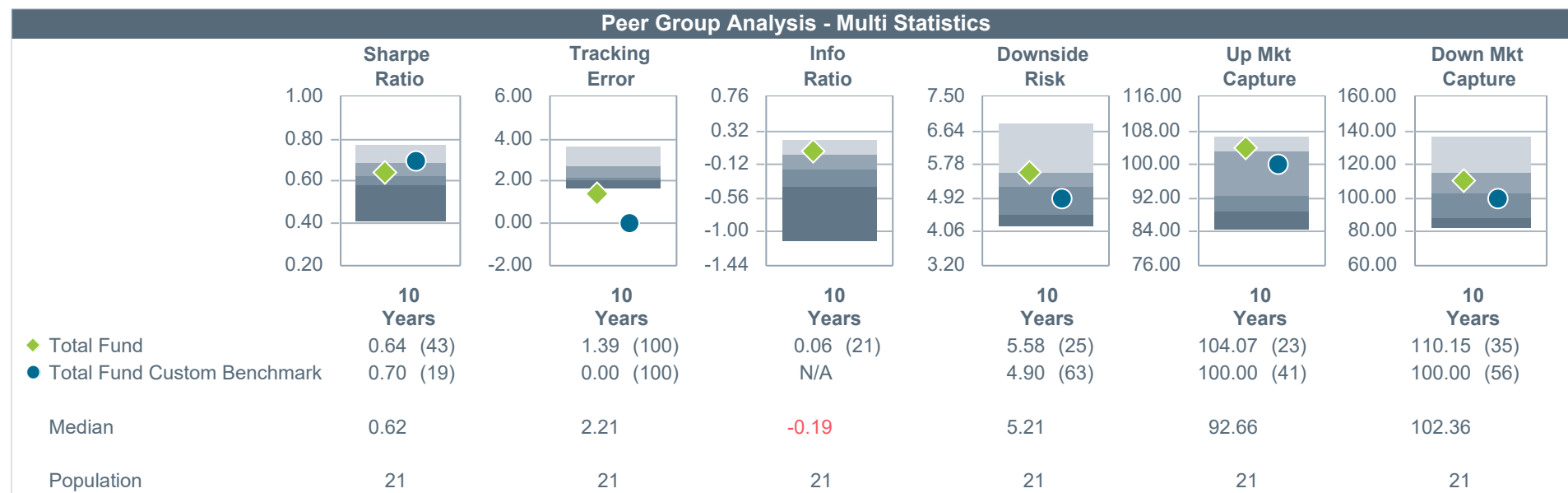
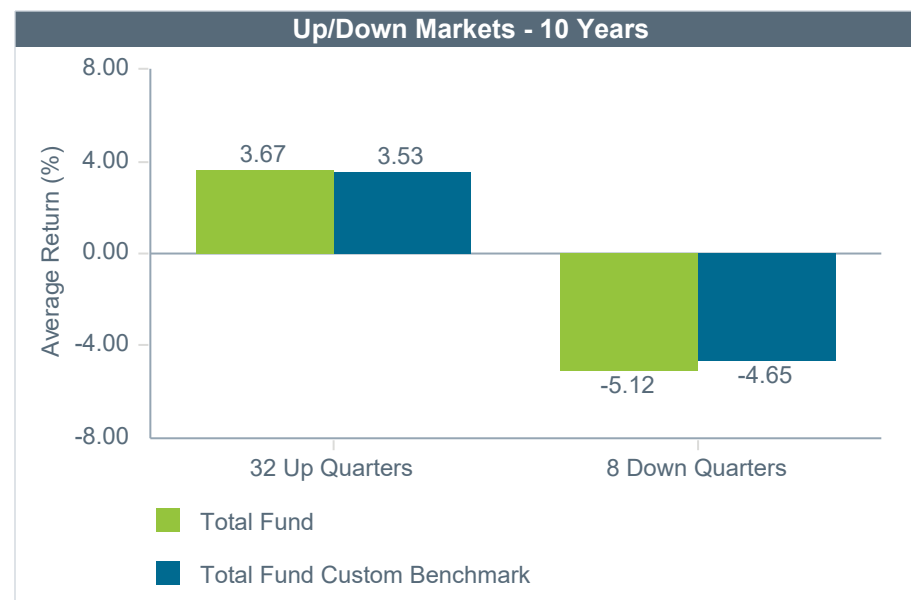
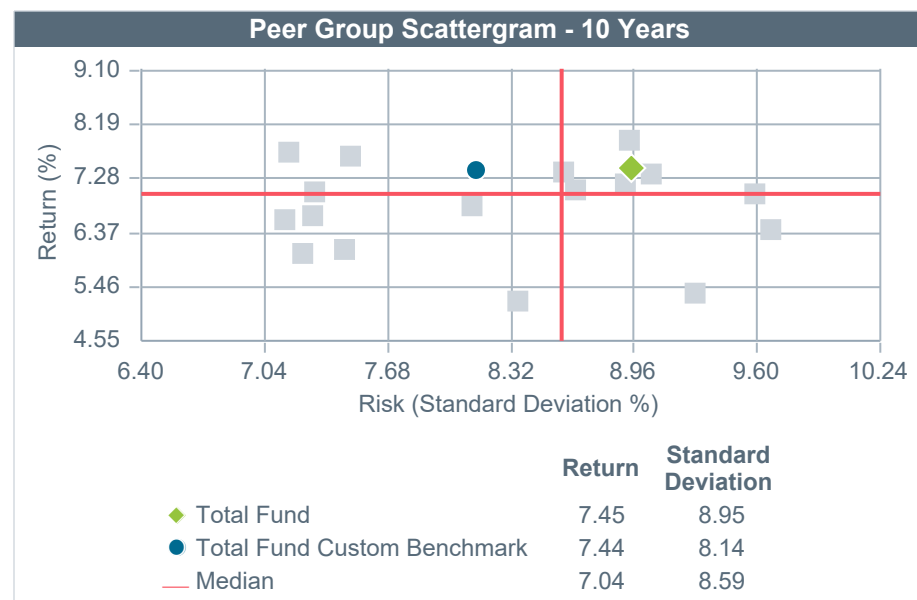


	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2024	2023	2022
◆ Total Fund	-0.4 (100)	-0.4 (100)	5.7 (49)	4.1 (54)	10.5 (28)	7.6 (30)	7.4 (25)	10.3 (23)	12.9 (16)	-11.8 (78)
● Total Fund Custom Benchmark	0.1 (82)	0.1 (82)	5.9 (44)	4.1 (52)	9.8 (53)	7.5 (31)	7.4 (25)	9.9 (32)	12.7 (17)	-11.8 (77)
5th Percentile	2.9	2.9	7.5	5.5	12.1	8.3	7.9	10.9	13.8	-4.9
1st Quartile	1.0	1.0	6.3	4.9	10.7	7.8	7.4	10.1	12.3	-6.3
Median	0.7	0.7	5.7	4.2	10.0	6.9	7.0	9.0	11.2	-9.5
3rd Quartile	0.2	0.2	4.9	3.2	9.1	6.4	6.4	8.1	10.0	-11.7
95th Percentile	-0.2	-0.2	3.9	2.1	7.9	5.7	5.2	7.1	8.3	-14.9
Population	23	23	23	23	23	22	21	59	65	72

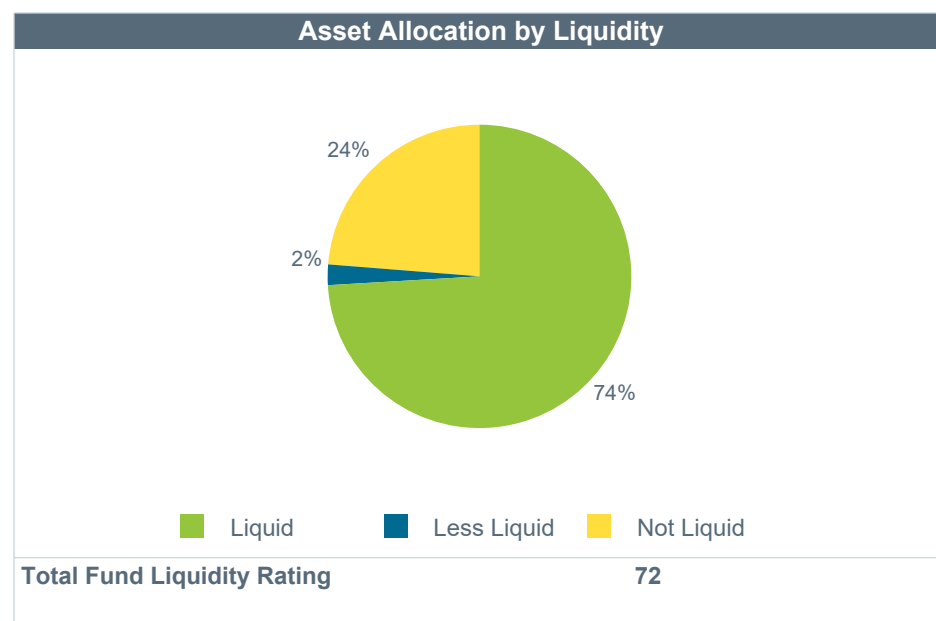
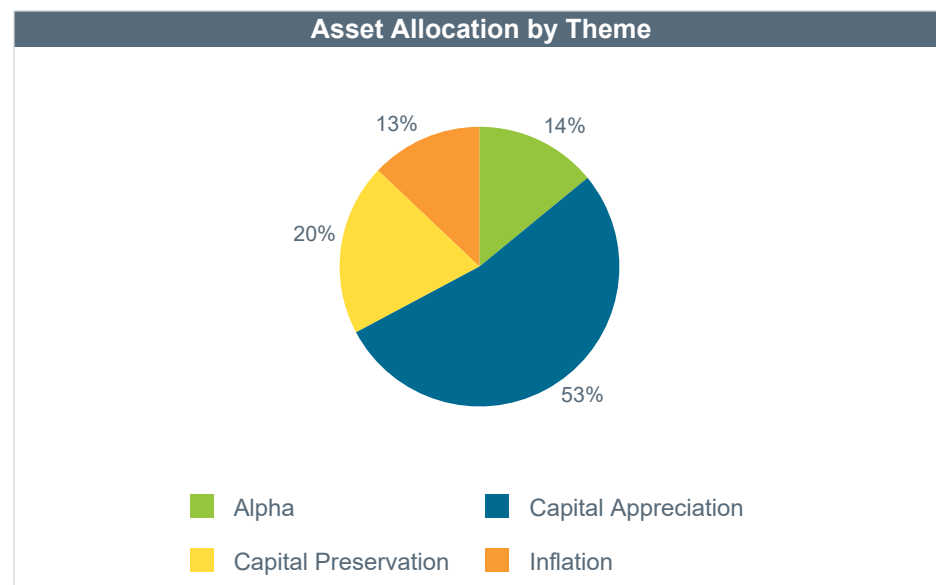
Performance shown is gross of fees. Parentheses contain percentile ranks.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Total Fund vs. All Public DB Plans (>\$10B) (Custom PG)

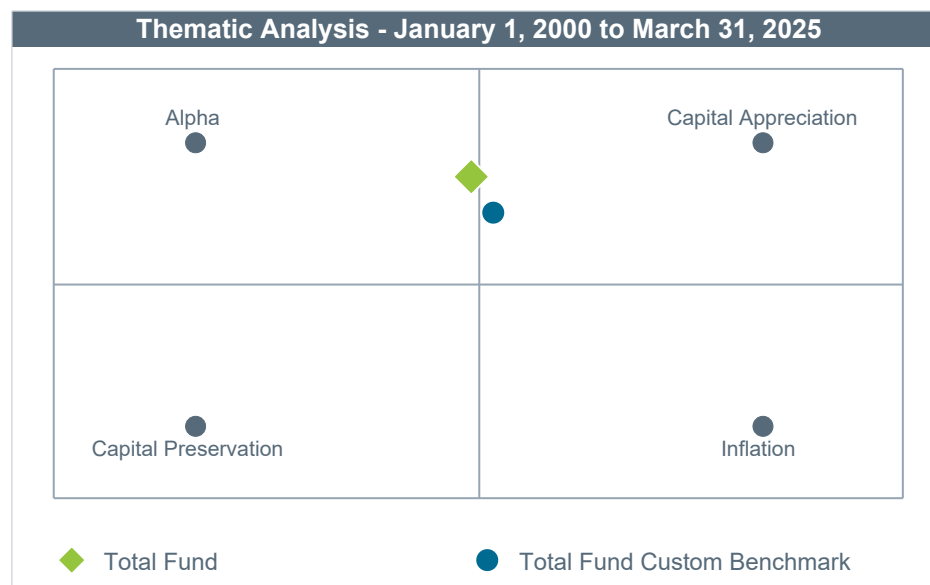
As of March 31, 2025



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



Asset Allocation by theme is based on dedicated manager allocations; as such, thematic allocations are approximations. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating. Please see the Glossary for additional information regarding liquidity, thematic and custom index descriptions.



Correlation Matrix - 10 Years

	A	B	C	D
A	1.00			
B	0.46	1.00		
C	-0.13	0.17	1.00	
D	0.42	0.80	0.23	1.00

A = HFRI EH: Equity Market Neutral Index (Alpha)
 B = MSCI ACW Index (USD) (Gross) (Capital Appreciation)
 C = Bloomberg US Govt Bond Index (Capital Preservation)
 D = Real Return Custom Index (Inflation)

**Pennsylvania State Employees' Retirement System Defined Benefit Plan
Projected Risk, Liquidity, and Correlation**

As of March 31, 2025

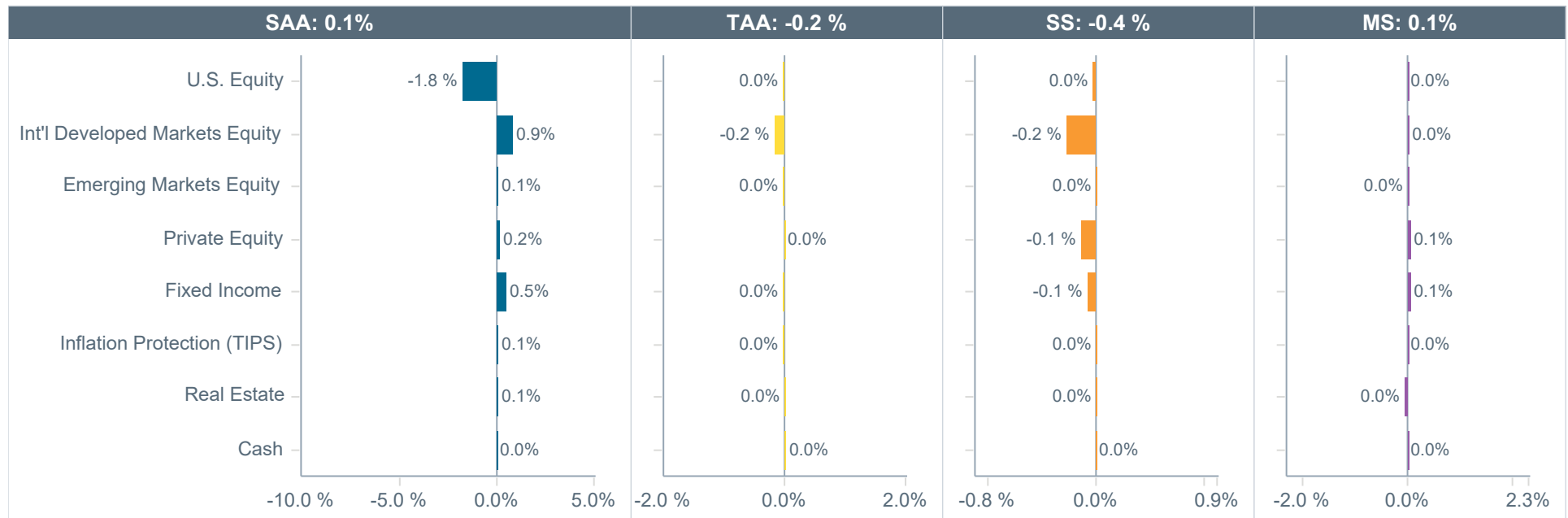
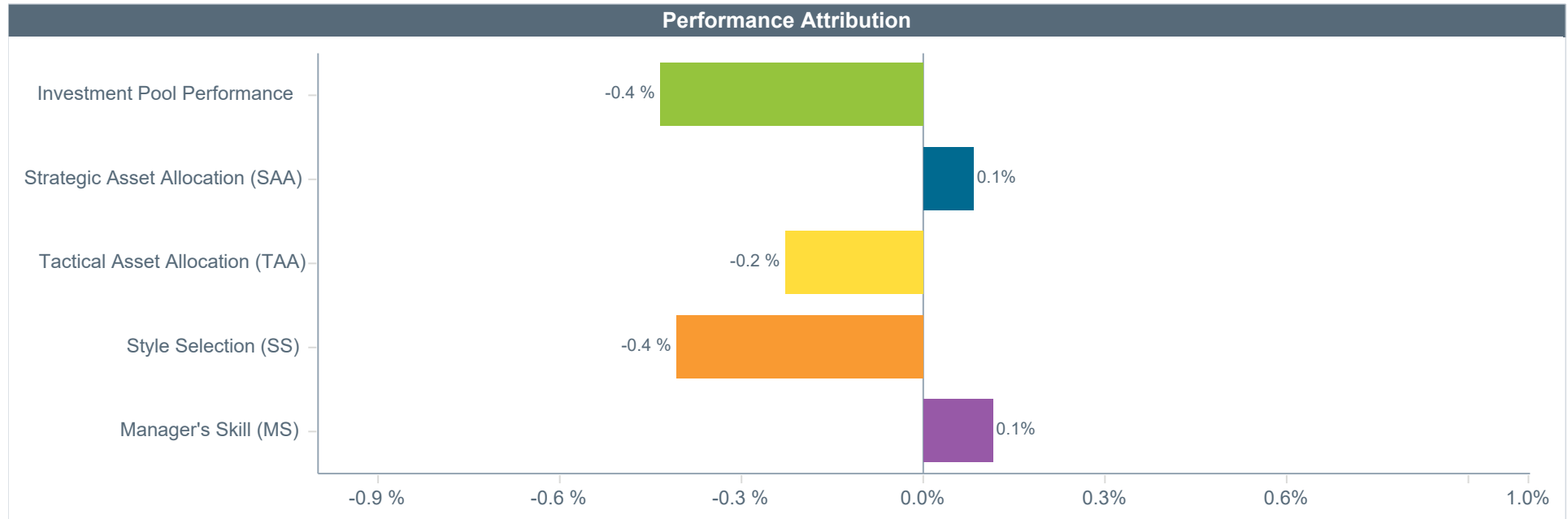
Capital Preservation Assets					Return Seeking Assets					
	Cash	Inflation Protection (TIPS)	Core Fixed Income	Nominal U.S. Treasuries	U.S. Equity	Int'l Developed Markets Equity	Emerging Markets Equity	Opportunistic Fixed Income	Real Estate	Private Equity
Policy Target Asset Allocation	2%	3%	12%	5%	37%	14%	2%	2%	7%	16%
Projected Returns (Geometric)*	2.73%	3.85%	4.38%	3.91%	4.84%	7.54%	8.03%	6.49%	6.34%	7.61%
Projected Risk (Standard Deviation)*	2.00%	5.50%	5.00%	4.41%	16.04%	18.47%	25.00%	10.50%	17.62%	22.00%
Liquidity	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid	Less Liquid	Not Liquid	Not Liquid
Correlation to U.S. Equity*	-0.05	0.35	0.27	-0.05	1	0.87	0.73	0.77	0.26	0.67
Months of Benefit Payments**	2.2	3.0	13.8	5.5						
Months of Benefit Payments (Includes EE & ER contributions)**	6.6	8.9	41.6	16.5						
Cumulative Months of Benefit Payments (Includes EE & ER Contributions)**		73.6								

*RVK 2025 Capital Market Assumptions

**Provided by SERS IO as of 3/31/2025

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Total Fund Attribution

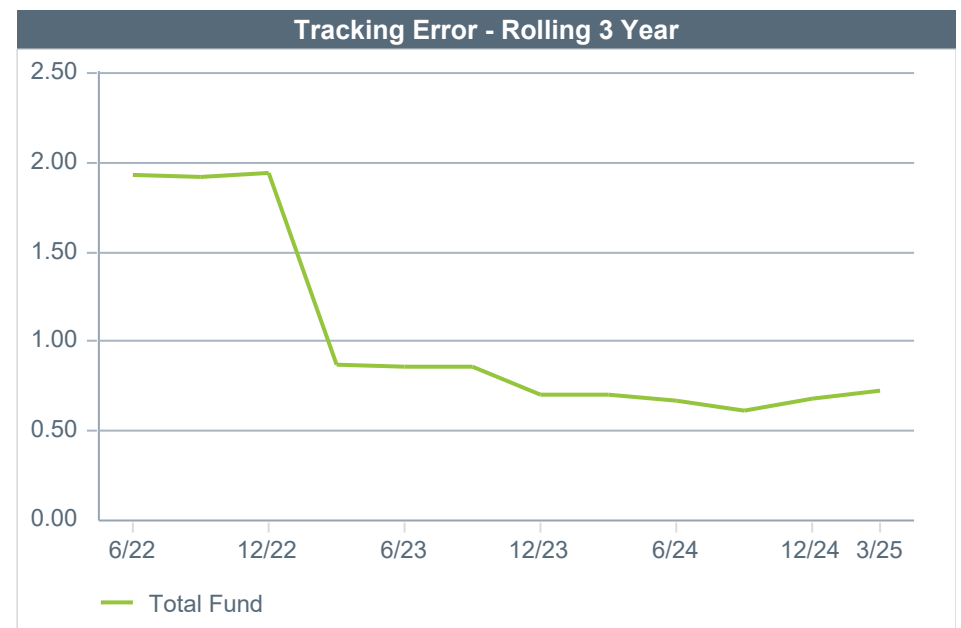
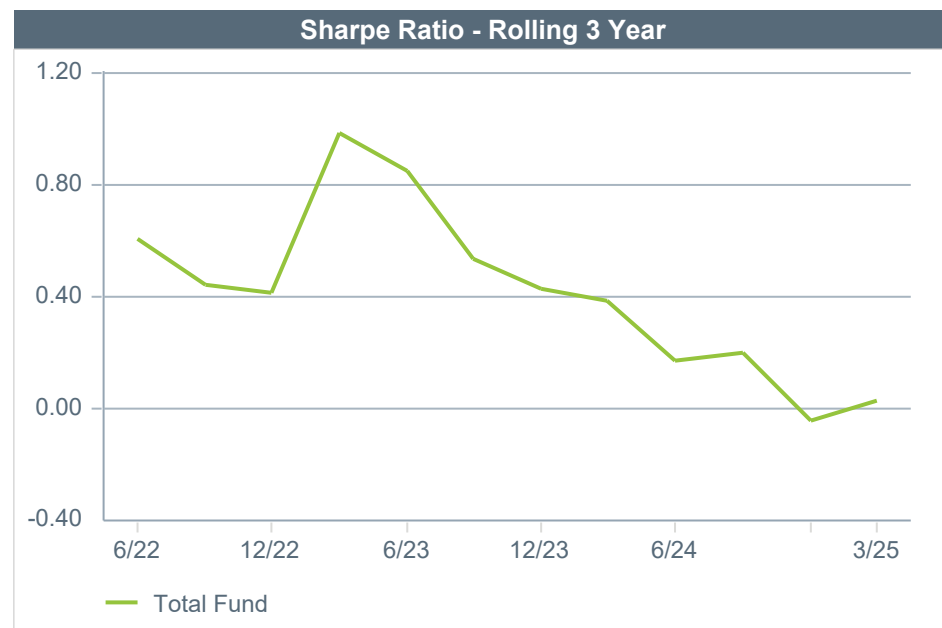
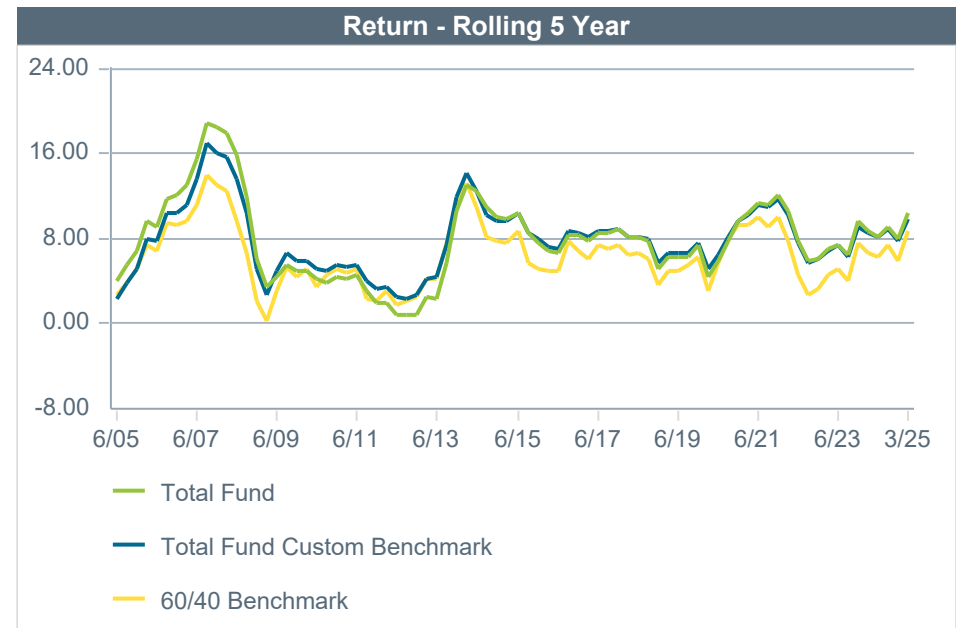
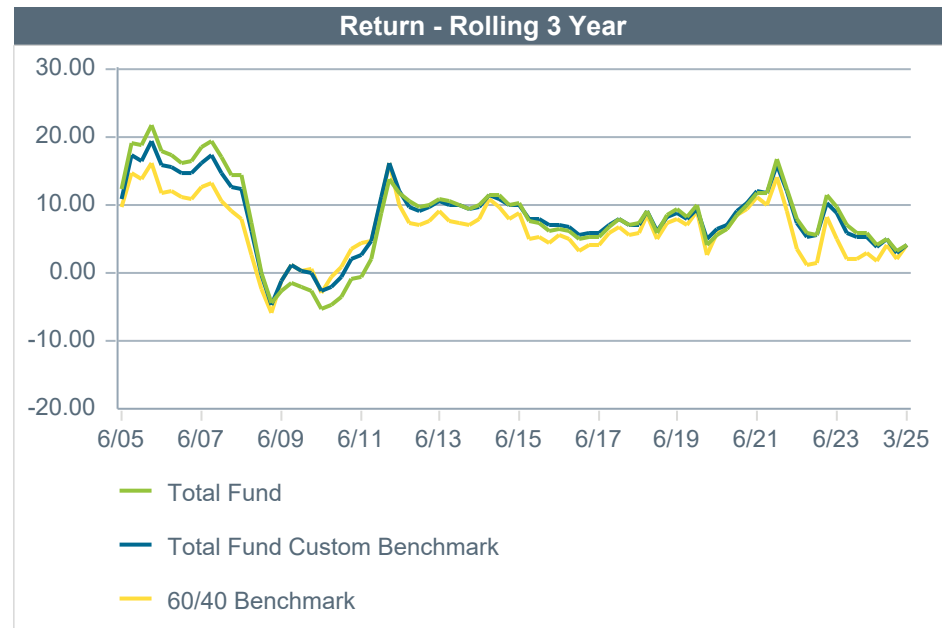
1 Quarter Ending March 31, 2025



Performance shown is net of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Total Fund - Rolling Stats

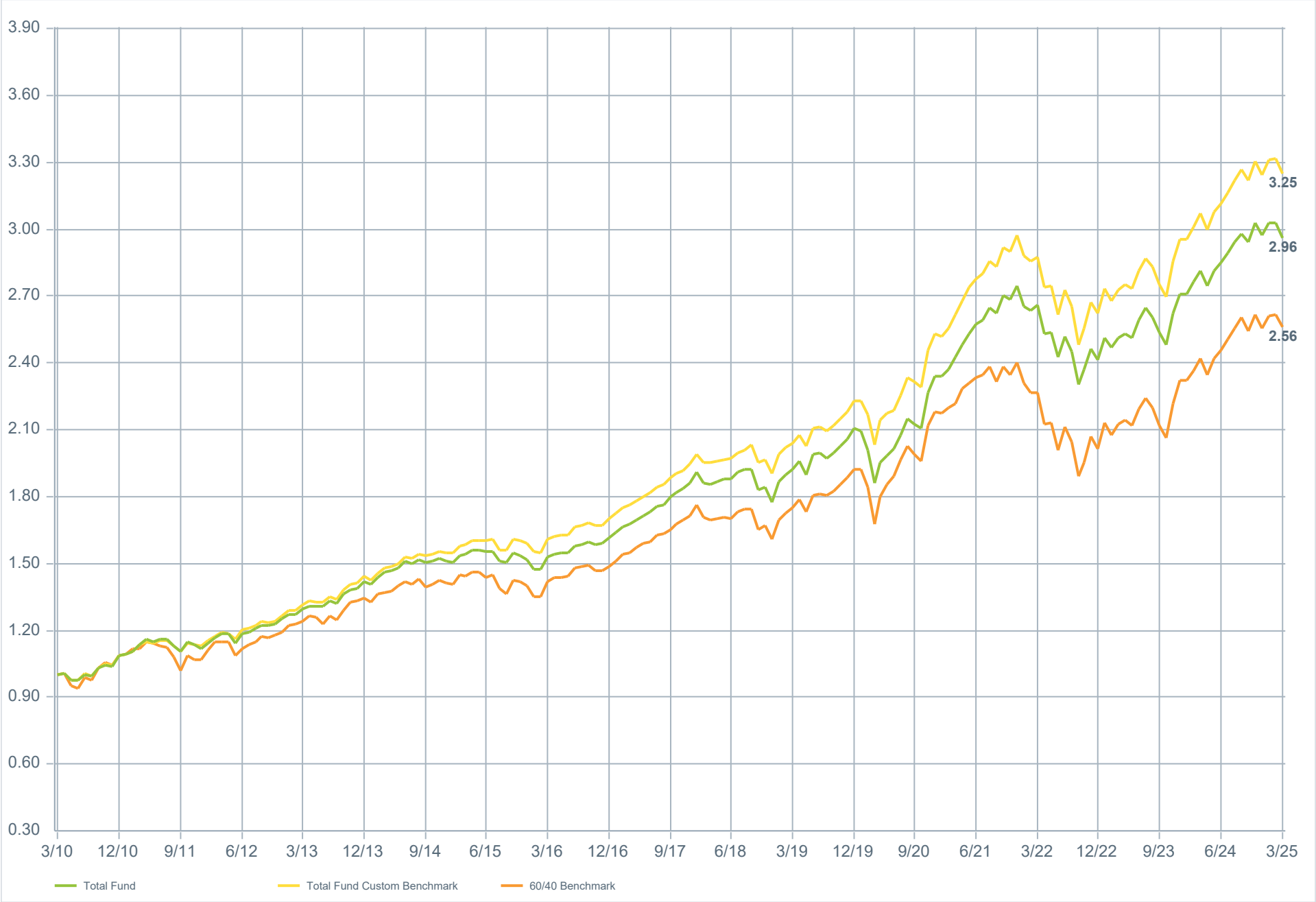
As of March 31, 2025



Performance shown is gross of fees. Calculations for the top charts are based on monthly periodicity. Calculations for the bottom charts are based on quarterly periodicity. Tracking Error is calculated using the Total Fund Custom Benchmark.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Growth of \$1

15 Years Ending March 31, 2025



Calculation is based on monthly periodicity.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.	Inception Date
Total Fund	38,202,777,334	100.00	-0.44	-0.44	5.33	3.67	9.72	6.76	7.50	6.63	5.92	9.21	01/01/1981
Total Fund Custom Benchmark			0.08	0.08	5.86	4.14	9.81	7.44	8.17	7.62	6.49	N/A	
Difference			-0.52	-0.52	-0.53	-0.48	-0.09	-0.68	-0.67	-0.99	-0.57	N/A	
Public Market Equivalent Custom Benchmark			0.05	0.05	8.89	6.25	10.14	7.82	8.59	9.30	7.77	N/A	
Difference			-0.49	-0.49	-3.56	-2.59	-0.42	-1.07	-1.09	-2.67	-1.84	N/A	
60/40 Benchmark			0.17	0.17	5.79	4.12	8.81	5.90	6.46	6.14	5.28	N/A	
Difference			-0.60	-0.60	-0.47	-0.45	0.91	0.86	1.04	0.49	0.64	N/A	
U.S. Equity	14,054,096,648	36.79	-4.77	-4.77	7.13	8.10	18.35	11.04	12.37	9.17	7.22	10.87	01/01/1981
Russell 3000 Index*			-4.72	-4.72	7.22	8.22	18.18	11.80	12.76	10.08	7.44	11.17	
Difference			-0.05	-0.05	-0.09	-0.12	0.17	-0.76	-0.40	-0.91	-0.22	-0.30	
International Developed Markets Equity	5,218,960,312	13.66	4.70	4.70	4.24	5.58	12.77	6.11	6.60	5.39	N/A	6.43	01/01/2002
MSCI Wrld Ex US Index (USD) (Net)*			6.20	6.20	5.17	5.02	11.97	5.49	5.64	5.35	4.07	6.39	
Difference			-1.50	-1.50	-0.92	0.56	0.80	0.62	0.96	0.03	N/A	0.04	
Emerging Markets Equity	679,941,624	1.78	2.37	2.37	7.52	1.97	8.99	4.97	3.28	4.60	N/A	6.56	01/01/2002
MSCI Emg Mkts Index (USD) (Net)*			2.93	2.93	8.23	1.97	9.10	3.98	3.27	6.30	5.67	8.23	
Difference			-0.56	-0.56	-0.71	-0.01	-0.11	0.99	0.01	-1.70	N/A	-1.68	
Private Equity	6,666,649,200	17.45	0.86	0.86	4.87	1.81	13.89	11.75	11.92	11.64	9.06	11.28	01/01/1986
Burgiss All Pvt Equity Custom Index (1 Qtr Lag)			0.67	0.67	5.86	1.91	13.10	12.71	13.16	12.71	10.72	19.81	
Difference			0.19	0.19	-0.99	-0.10	0.79	-0.95	-1.24	-1.07	-1.67	-8.53	
Fixed Income	7,293,481,851	19.09	2.75	2.75	5.48	0.89	0.76	1.64	3.07	3.89	4.60	7.42	01/01/1981
Bloomberg US Agg Bond Index			2.78	2.78	4.88	0.52	-0.40	1.46	2.44	3.18	3.96	6.72	
Difference			-0.03	-0.03	0.60	0.37	1.15	0.18	0.64	0.71	0.64	0.70	
Inflation Protection (TIPS)	989,092,674	2.59	4.23	4.23	6.30	-0.38	2.00	2.32	2.36	3.08	N/A	3.00	02/01/2003
Bloomberg US Trsy US TIPS Index			4.17	4.17	6.17	0.06	2.36	2.51	3.10	3.53	4.76	3.89	
Difference			0.07	0.07	0.14	-0.44	-0.36	-0.19	-0.74	-0.45	N/A	-0.88	
Real Estate	2,206,854,347	5.78	0.03	0.03	-7.00	-7.49	0.22	1.97	4.89	3.80	5.24	7.25	03/01/1984
Real Estate Custom Benchmark			0.85	0.85	-2.43	-3.92	2.49	4.64	7.34	5.55	6.44	N/A	
Difference			-0.82	-0.82	-4.57	-3.57	-2.27	-2.67	-2.46	-1.74	-1.21	N/A	
CPI (All Urban Consumers) +3% (1 Qtr Lag)			0.84	0.84	5.97	7.35	7.32	6.09	5.64	5.64	5.62	5.89	
Difference			-0.81	-0.81	-12.98	-14.84	-7.10	-4.12	-0.75	-1.84	-0.39	1.36	
Legacy Private Credit	339,769,993	0.89	1.33	1.33	9.14	9.20	10.72	N/A	N/A	N/A	N/A	10.16	04/01/2018
S&P Leverage Loan Index +1% (1 Qtr Lag)			2.54	2.54	10.14	7.91	6.79	6.18	6.42	5.97	5.99	6.46	
Difference			-1.21	-1.21	-1.00	1.28	3.93	N/A	N/A	N/A	N/A	3.70	

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.	Inception Date
Cash	737,806,885	1.93	1.11	1.11	5.20	4.44	2.71	2.10	1.50	1.95	2.33	3.50	01/01/1987
ICE BofA 3 Mo US T-Bill Index			1.02	1.02	4.97	4.23	2.56	1.87	1.27	1.68	1.90	3.23	
Difference			0.09	0.09	0.23	0.21	0.15	0.23	0.23	0.27	0.44	0.26	
Legacy Hedge Funds	15,139,602	0.04											
Liquidated Holdings	6,334	0.00											

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total Fund	38,202,777,334	100.00	9.82	12.22	-12.15	17.24	11.11	18.75	-4.55	15.08	6.51	0.40	6.35	13.61	11.96
Total Fund Custom Benchmark			9.88	12.74	-11.78	17.51	13.50	16.81	-2.09	14.46	6.81	2.85	7.32	14.13	11.66
Difference			-0.05	-0.53	-0.37	-0.27	-2.40	1.94	-2.46	0.62	-0.30	-2.45	-0.97	-0.52	0.30
Public Market Equivalent Custom Benchmark			15.19	17.12	-13.69	13.64	13.24	16.28	-1.02	16.07	8.44	0.60	7.59	15.52	15.71
Difference			-5.36	-4.91	1.55	3.60	-2.13	2.47	-3.53	-0.99	-1.92	-0.21	-1.24	-1.91	-3.75
60/40 Benchmark			10.14	15.03	-16.04	10.03	13.56	19.28	-5.93	15.39	6.22	-0.88	4.77	12.74	11.63
Difference			-0.32	-2.81	3.90	7.21	-2.45	-0.53	1.39	-0.31	0.29	1.27	1.58	0.87	0.33
U.S. Equity	14,054,096,648	36.79	23.38	25.56	-19.06	24.62	21.28	30.37	-7.48	20.54	11.17	-0.53	11.22	34.14	17.37
Russell 3000 Index*			23.81	25.96	-19.21	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56	33.55	16.42
Difference			-0.43	-0.39	0.15	-1.04	0.39	-0.65	-2.24	-0.59	-1.57	-1.01	-1.34	0.58	0.95
International Developed Markets Equity	5,218,960,312	13.66	4.97	18.99	-15.17	14.48	9.62	23.90	-14.83	29.12	2.05	-1.88	-4.85	23.65	18.52
MSCI Wrld Ex US Index (USD) (Net)*			4.15	17.18	-15.26	12.40	8.32	22.91	-14.68	25.17	2.95	-1.95	-4.45	21.57	16.55
Difference			0.81	1.81	0.08	2.08	1.30	1.00	-0.15	3.95	-0.90	0.07	-0.39	2.08	1.97
Emerging Markets Equity	679,941,624	1.78	8.64	11.40	-22.84	-0.45	24.45	21.32	-15.82	41.38	10.32	-12.38	-5.93	-1.09	17.02
MSCI Emg Mkts Index (USD) (Net)*			7.43	11.67	-19.83	-0.28	18.39	17.65	-15.05	36.83	9.90	-13.86	-1.79	-2.20	18.69
Difference			1.21	-0.27	-3.00	-0.17	6.05	3.67	-0.78	4.55	0.42	1.48	-4.14	1.10	-1.67
Private Equity	6,666,649,200	17.45	6.28	6.59	-5.06	52.83	18.37	9.55	11.90	12.83	6.79	6.42	13.15	12.56	11.42
Burgiss All Pvt Equity Custom Index (1 Qtr Lag)			8.18	4.44	-1.43	49.63	15.83	9.24	16.85	15.68	8.91	8.70	16.59	15.97	12.65
Difference			-1.90	2.15	-3.63	3.20	2.53	0.32	-4.95	-2.85	-2.12	-2.28	-3.44	-3.41	-1.23
Fixed Income	7,293,481,851	19.09	2.48	5.57	-12.34	-0.75	5.78	9.51	-0.99	4.68	5.62	-2.73	6.21	-1.37	10.01
Bloomberg US Agg Bond Index			1.25	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97	-2.02	4.21
Difference			1.23	0.04	0.67	0.79	-1.72	0.80	-1.01	1.13	2.97	-3.28	0.25	0.66	5.79
Inflation Protection (TIPS)	989,092,674	2.59	1.81	3.85	-12.99	5.16	11.04	8.36	-1.75	3.89	4.64	-1.71	3.87	-8.12	5.01
Bloomberg US Trsy US TIPS Index			1.84	3.90	-11.85	5.96	10.99	8.43	-1.26	3.01	4.68	-1.44	3.64	-8.61	6.98
Difference			-0.02	-0.05	-1.15	-0.79	0.05	-0.07	-0.49	0.89	-0.05	-0.27	0.23	0.49	-1.97
Real Estate	2,206,854,347	5.78	-12.25	-11.91	6.02	18.04	2.11	10.98	-2.34	2.02	3.23	9.92	10.94	13.70	9.89
Real Estate Custom Benchmark			-8.44	-13.08	17.38	17.48	0.25	4.75	7.24	5.61	9.87	12.86	11.38	12.41	12.82
Difference			-3.81	1.17	-11.36	0.56	1.86	6.23	-9.57	-3.59	-6.65	-2.94	-0.44	1.29	-2.94
CPI (All Urban Consumers) +3% (1 Qtr Lag)			5.51	6.81	11.45	8.55	4.41	4.76	5.35	5.30	4.51	2.96	4.71	4.22	5.05
Difference			-17.76	-18.72	-5.42	9.49	-2.30	6.22	-7.68	-3.28	-1.28	6.96	6.23	9.48	4.83
Legacy Private Credit	339,769,993	0.89	10.50	10.85	8.00	21.24	3.26	8.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S&P Leverage Loan Index +1% (1 Qtr Lag)			10.75	13.60	-1.65	9.54	1.84	4.14	6.63	6.42	6.40	2.25	5.35	6.89	11.84
Difference			-0.25	-2.75	9.65	11.70	1.42	4.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Cash	737,806,885	1.93	5.44	5.14	1.65	0.06	0.64	2.32	2.10	1.49	0.63	0.72	0.41	0.19	0.38
ICE BofA 3 Mo US T-Bill Index			5.25	5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.33	0.05	0.04	0.07	0.11
Difference			0.19	0.12	0.19	0.01	-0.03	0.04	0.22	0.63	0.30	0.67	0.38	0.12	0.27
Legacy Hedge Funds	15,139,602	0.04													
Liquidated Holdings	6,334	0.00													

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.	Inception Date
Total Fund	38,202,777,334	100.00	-0.44	-0.44	5.33	3.67	9.72	6.76	7.50	6.63	5.92	9.21	01/01/1981
Total Fund Custom Benchmark			0.08	0.08	5.86	4.14	9.81	7.44	8.17	7.62	6.49	N/A	
Difference			-0.52	-0.52	-0.53	-0.48	-0.09	-0.68	-0.67	-0.99	-0.57	N/A	
Public Market Equivalent Custom Benchmark			0.05	0.05	8.89	6.25	10.14	7.82	8.59	9.30	7.77	N/A	
Difference			-0.49	-0.49	-3.56	-2.59	-0.42	-1.07	-1.09	-2.67	-1.84	N/A	
60/40 Benchmark			0.17	0.17	5.79	4.12	8.81	5.90	6.46	6.14	5.28	N/A	
Difference			-0.60	-0.60	-0.47	-0.45	0.91	0.86	1.04	0.49	0.64	N/A	
U.S. Equity	14,054,096,648	36.79	-4.77	-4.77	7.13	8.10	18.35	11.04	12.37	9.17	7.22	10.87	01/01/1981
Russell 3000 Index*			-4.72	-4.72	7.22	8.22	18.18	11.80	12.76	10.08	7.44	11.17	
Difference			-0.05	-0.05	-0.09	-0.12	0.17	-0.76	-0.40	-0.91	-0.22	-0.30	
S&P 1500 Comp Index			-4.49	-4.49	7.33	8.60	18.42	12.12	12.95	10.17	7.61	N/A	
Difference			-0.28	-0.28	-0.20	-0.50	-0.07	-1.08	-0.59	-1.00	-0.38	N/A	
MCM Russell 1000 Index (SA)	13,313,710,712	34.85	-4.46	-4.46	7.79	8.77	18.56	12.24	N/A	N/A	N/A	13.94	01/01/2012
Russell 1000 Index			-4.49	-4.49	7.82	8.65	18.47	12.18	13.02	10.24	7.46	13.92	
Difference			0.03	0.03	-0.03	0.11	0.10	0.06	N/A	N/A	N/A	0.02	
S&P 500 Index (Cap Wtd)			-4.27	-4.27	8.25	9.06	18.59	12.50	13.15	10.23	7.41	14.08	
Difference			-0.18	-0.18	-0.46	-0.30	-0.03	-0.26	N/A	N/A	N/A	-0.13	
MCM Russell 2000 Core Index (SA)	91,625,146	0.24	-9.42	-9.42	-4.04	0.75	13.71	N/A	N/A	N/A	N/A	6.84	12/01/2016
Russell 2000 Index			-9.48	-9.48	-4.01	0.52	13.27	6.30	8.98	7.55	6.83	6.60	
Difference			0.06	0.06	-0.03	0.23	0.44	N/A	N/A	N/A	N/A	0.24	
S&P Sm Cap 600 Index (Cap Wtd)			-8.93	-8.93	-3.38	0.71	15.09	7.52	10.36	8.59	8.85	7.23	
Difference			-0.50	-0.50	-0.66	0.05	-1.38	N/A	N/A	N/A	N/A	-0.39	
MCM Russell 2000 Val Index (SA)	298,700,551	0.78	-7.73	-7.73	-3.08	0.14	15.37	N/A	N/A	N/A	N/A	5.60	12/01/2016
Russell 2000 Val Index			-7.74	-7.74	-3.12	0.05	15.31	6.07	8.19	6.80	8.47	5.57	
Difference			0.02	0.02	0.04	0.09	0.06	N/A	N/A	N/A	N/A	0.03	
S&P Sm Cap 600 Val Index			-9.92	-9.92	-3.24	0.22	16.25	6.92	9.56	7.93	9.10	6.31	
Difference			2.19	2.19	0.15	-0.09	-0.88	N/A	N/A	N/A	N/A	-0.71	
Emerald Advisers Div Sm Cap Grth (SA)	350,060,239	0.92	-11.93	-11.93	0.04	1.98	12.17	N/A	N/A	N/A	N/A	8.55	12/01/2016
Russell 2000 Grth Index			-11.12	-11.12	-4.86	0.78	10.78	6.14	9.51	8.06	4.96	7.21	
Difference			-0.81	-0.81	4.90	1.19	1.40	N/A	N/A	N/A	N/A	1.33	
S&P Sm Cap 600 Grth Index			-7.96	-7.96	-3.70	1.01	13.72	7.95	11.03	9.15	8.31	7.93	
Difference			-3.96	-3.96	3.74	0.97	-1.55	N/A	N/A	N/A	N/A	0.62	

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.	Inception Date
International Developed Markets Equity	5,218,960,312	13.66	4.70	4.70	4.24	5.58	12.77	6.11	6.60	5.39	N/A	6.43	01/01/2002
MSCI Wrld Ex US Index (USD) (Net)*			6.20	6.20	5.17	5.02	11.97	5.49	5.64	5.35	4.07	6.39	
Difference			-1.50	-1.50	-0.92	0.56	0.80	0.62	0.96	0.03	N/A	0.04	
BlackRock MSCI World ex US Index (CF)	4,005,651,542	10.49	6.57	6.57	5.75	6.13	12.63	N/A	N/A	N/A	N/A	6.45	06/01/2017
MSCI Wrld Ex US Index (USD) (Net)			6.20	6.20	5.30	5.70	12.16	5.50	5.57	5.26	4.01	6.01	
Difference			0.37	0.37	0.44	0.43	0.48	N/A	N/A	N/A	N/A	0.45	
Walter Scott & Ptnrs Gbl Gr Eq (SA)	801,556,961	2.10	-3.55	-3.55	-2.58	4.69	12.71	10.39	10.21	N/A	N/A	9.18	10/01/2006
MSCI Wrld Index (USD) (Net)			-1.79	-1.79	7.04	7.58	16.13	9.50	9.67	7.93	5.68	7.41	
Difference			-1.75	-1.75	-9.61	-2.89	-3.42	0.90	0.55	N/A	N/A	1.77	
Xponance Non-US Small Cap (CIT)	249,270,000	0.65	1.38	1.38	2.12	1.54	10.16	N/A	N/A	N/A	N/A	3.41	10/01/2018
MSCI ACW Ex US Sm Cap Index (USD) (Net)			0.64	0.64	1.87	0.99	11.84	5.32	5.72	6.12	6.09	4.13	
Difference			0.73	0.73	0.25	0.55	-1.67	N/A	N/A	N/A	N/A	-0.72	
Harris Assoc Int'l SCV (SA)	159,418,021	0.42	7.75	7.75	4.69	6.58	17.05	5.92	7.09	7.50	N/A	9.87	07/01/2003
MSCI Wrld Ex US Sm Cap Index (USD) (Net)			3.40	3.40	3.58	0.81	10.71	5.42	6.15	5.64	6.45	8.04	
Difference			4.36	4.36	1.10	5.78	6.34	0.50	0.94	1.86	N/A	1.83	
MSCI Wrld Ex US Sm Val Index (USD) (Net)			5.82	5.82	5.88	3.45	12.82	5.35	6.00	5.84	7.51	8.32	
Difference			1.93	1.93	-1.20	3.14	4.23	0.58	1.09	1.66	N/A	1.56	
Emerging Markets Equity	679,941,624	1.78	2.37	2.37	7.52	1.97	8.99	4.97	3.28	4.60	N/A	6.56	01/01/2002
MSCI Emg Mkts Index (USD) (Net)*			2.93	2.93	8.23	1.97	9.10	3.98	3.27	6.30	5.67	8.23	
Difference			-0.56	-0.56	-0.71	-0.01	-0.11	0.99	0.01	-1.70	N/A	-1.68	
BlackRock MSCI Emg Mkts Index (CF)	679,222,068	1.78	3.01	3.01	8.01	1.17	7.63	N/A	N/A	N/A	N/A	3.30	07/01/2017
MSCI Emg Mkts Index (USD) (Net)			2.93	2.93	8.09	1.44	7.94	3.71	3.05	6.06	5.70	3.58	
Difference			0.09	0.09	-0.09	-0.27	-0.31	N/A	N/A	N/A	N/A	-0.28	

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.	Inception Date
Private Equity	6,666,649,200	17.45	0.86	0.86	4.87	1.81	13.89	11.75	11.92	11.64	9.06	11.28	01/01/1986
Burgiss All Pvt Equity Custom Index (1 Qtr Lag)			0.67	0.67	5.86	1.91	13.10	12.71	13.16	12.71	10.72	19.81	
Difference			0.19	0.19	-0.99	-0.10	0.79	-0.95	-1.24	-1.07	-1.67	-8.53	
Global Equity+3% (1 Qtr Lag)			0.64	0.64	21.75	10.02	15.34	14.91	16.25	15.02	12.37	N/A	
Difference			0.23	0.23	-16.87	-8.21	-1.45	-3.16	-4.33	-3.38	-3.31	N/A	
Buyouts	3,679,721,130	9.63	0.83	0.83	3.69	2.87	13.29	12.39	13.10	13.26	11.14	13.14	04/01/1986
Burgiss Buyout Custom Index (1 Qtr Lag)			-0.10	-0.10	5.62	4.84	14.17	13.64	13.69	13.58	12.25	19.08	
Difference			0.93	0.93	-1.93	-1.97	-0.87	-1.24	-0.59	-0.33	-1.11	-5.94	
Special Situations	1,741,473,471	4.56	1.45	1.45	8.51	6.44	15.81	12.69	12.56	12.75	12.87	13.04	01/01/1995
Burgiss Special Situations Custom Index (1 Qtr Lag)			0.36	0.36	6.97	6.95	8.39	7.63	8.90	9.01	9.69	10.19	
Difference			1.08	1.08	1.54	-0.51	7.42	5.06	3.66	3.74	3.18	2.85	
Growth Equity	1,094,952,477	2.87	1.92	1.92	6.61	-3.79	18.39	14.66	12.94	9.82	3.99	8.47	01/01/1986
Burgiss Venture Capital Custom Index (1 Qtr Lag)			2.42	2.42	5.59	-6.44	13.81	14.10	15.40	12.69	7.26	13.92	
Difference			-0.50	-0.50	1.02	2.65	4.58	0.55	-2.46	-2.87	-3.26	-5.45	
Keystone Legacy	150,502,120	0.39	-11.06	-11.06	-15.29	-11.55	-6.23	N/A	N/A	N/A	N/A	-5.48	07/01/2018
Fixed Income	7,293,481,851	19.09	2.75	2.75	5.48	0.89	0.76	1.64	3.07	3.89	4.60	7.42	01/01/1981
Bloomberg US Agg Bond Index			2.78	2.78	4.88	0.52	-0.40	1.46	2.44	3.18	3.96	6.72	
Difference			-0.03	-0.03	0.60	0.37	1.15	0.18	0.64	0.71	0.64	0.70	
Core Fixed Income	4,619,606,142	12.09	2.79	2.79	5.07	1.10	0.13	1.71	2.97	3.55	N/A	3.85	01/01/2002
Bloomberg US Agg Bond Index			2.78	2.78	4.88	0.52	-0.40	1.46	2.44	3.18	3.96	3.51	
Difference			0.01	0.01	0.19	0.59	0.53	0.25	0.53	0.37	N/A	0.34	
MCM Bond Index (SA)	4,043,103,936	10.58	2.76	2.76	4.93	0.58	-0.39	1.44	2.37	3.10	3.90	6.21	04/01/1984
Bloomberg US Agg Bond Index*			2.78	2.78	4.88	0.52	-0.40	1.46	2.44	3.18	4.00	6.46	
Difference			-0.02	-0.02	0.05	0.06	0.00	-0.02	-0.06	-0.08	-0.10	-0.24	
PIMCO Core Bond Fund (SA)	576,502,206	1.51	3.03	3.03	6.02	1.31	1.00	1.95	N/A	N/A	N/A	2.00	01/01/2013
Bloomberg US Aggregate ex Treasury			2.67	2.67	5.16	0.93	0.43	1.76	2.72	3.44	4.21	1.95	
Difference			0.36	0.36	0.86	0.38	0.57	0.20	N/A	N/A	N/A	0.05	

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Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)											Inception Date
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.		
Opportunistic Fixed Income	819,079,493	2.14	2.03	2.03	10.32	8.06	10.23	5.33	N/A	N/A	N/A	5.67	10/01/2012	
HFRI FOF Comp Index			-0.40	-0.40	4.36	3.94	7.10	3.49	3.50	3.35	3.47	4.08		
Difference			2.43	2.43	5.96	4.12	3.13	1.84	N/A	N/A	N/A	1.59		
Blackstone Keystone Fund (CF)	819,079,493	2.14	2.03	2.03	10.32	8.09	11.55	6.08	N/A	N/A	N/A	7.66	07/01/2012	
HFRI FOF Comp Index			-0.40	-0.40	4.36	3.94	7.10	3.49	3.50	3.35	3.47	4.20		
Difference			2.43	2.43	5.96	4.15	4.45	2.59	N/A	N/A	N/A	3.46		
Nominal U.S. Treasuries	1,828,040,735	4.79	2.92	2.92	4.09	-2.14	-3.81	0.22	N/A	N/A	N/A	0.96	09/01/2011	
Bloomberg US Trsy Bellwethers 10 Yr Index			3.99	3.99	3.93	-1.78	-3.41	0.28	2.29	2.89	3.62	1.14		
Difference			-1.07	-1.07	0.16	-0.36	-0.40	-0.06	N/A	N/A	N/A	-0.18		
MCM US Treas Index (SA)	1,828,040,733	4.79	2.92	2.92	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.00	05/01/2024	
Bloomberg US Trsy Index			2.92	2.92	4.51	-0.05	-1.67	0.95	1.96	2.76	3.51	7.00		
Difference			0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.01		
Legacy Fixed Income	26,755,482	0.07	5.30	5.30	12.81	N/A	N/A	N/A	N/A	N/A	N/A	5.47	07/01/2022	
Bloomberg US CMBS Ex AAA Index			2.81	2.81	7.19	1.17	2.46	2.54	4.90	0.92	N/A	2.97		
Difference			2.49	2.49	5.62	N/A	N/A	N/A	N/A	N/A	N/A	2.51		
Fidelity HY CMBS (SA)	26,755,482	0.07	5.30	5.30	13.06	4.18	5.98	3.22	7.27	5.51	6.92	7.34	04/01/1997	
Bloomberg US CMBS Ex AAA Index*			2.81	2.81	7.19	1.17	2.46	2.54	4.90	5.94	6.24	6.07		
Difference			2.48	2.48	5.87	3.01	3.52	0.68	2.36	-0.42	0.68	1.27		
Inflation Protection (TIPS)	989,092,674	2.59	4.23	4.23	6.30	-0.38	2.00	2.32	2.36	3.08	N/A	3.00	02/01/2003	
Bloomberg US Trsy US TIPS Index			4.17	4.17	6.17	0.06	2.36	2.51	3.10	3.53	4.76	3.89		
Difference			0.07	0.07	0.14	-0.44	-0.36	-0.19	-0.74	-0.45	N/A	-0.88		
NISA Inv Adv TIPS (SA)	483,533,826	1.27	4.23	4.23	6.34	0.03	2.36	2.52	2.36	N/A	N/A	2.98	04/01/2007	
Bloomberg US Trsy US TIPS Index*			4.17	4.17	6.17	0.06	2.36	2.51	2.36	N/A	N/A	N/A		
Difference			0.07	0.07	0.18	-0.03	0.00	0.00	0.00	N/A	N/A	N/A		
Brown Brothers TIPS (SA)	505,553,135	1.32	4.24	4.24	6.22	-0.01	2.19	2.49	N/A	N/A	N/A	2.00	02/01/2012	
Bloomberg US Trsy US TIPS Index			4.17	4.17	6.17	0.06	2.36	2.51	3.10	3.53	4.76	1.94		
Difference			0.07	0.07	0.05	-0.07	-0.17	-0.03	N/A	N/A	N/A	0.06		

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Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	Since Incep.	Inception Date
Real Estate	2,206,854,347	5.78	0.03	0.03	-7.00	-7.49	0.22	1.97	4.89	3.80	5.24	7.25	03/01/1984
Real Estate Custom Benchmark			0.85	0.85	-2.43	-3.92	2.49	4.64	7.34	5.55	6.44	N/A	
Difference			-0.82	-0.82	-4.57	-3.57	-2.27	-2.67	-2.46	-1.74	-1.21	N/A	
CPI (All Urban Consumers) +3% (1 Qtr Lag)			0.84	0.84	5.97	7.35	7.32	6.09	5.64	5.64	5.62	5.89	
Difference			-0.81	-0.81	-12.98	-14.84	-7.10	-4.12	-0.75	-1.84	-0.39	1.36	
Real Estate Securities	146,376,462	0.38	0.50	0.50	12.27	-0.14	11.82	5.35	7.73	6.88	9.59	9.15	04/01/1996
FTSE NAREIT Eq REITs Index (TR)			0.91	0.91	9.94	-0.60	11.35	5.34	8.70	7.45	9.78	9.30	
Difference			-0.41	-0.41	2.33	0.46	0.47	0.01	-0.97	-0.57	-0.19	-0.16	
CenterSquare (SA)	146,374,541	0.38	0.49	0.49	12.26	0.12	11.95	6.30	9.77	8.90	N/A	10.20	05/01/2002
FTSE NAREIT Eq REITs Index (TR)			0.91	0.91	9.94	-0.60	11.35	5.34	8.70	7.45	9.78	8.66	
Difference			-0.42	-0.42	2.32	0.72	0.60	0.96	1.08	1.45	N/A	1.54	
Core/Core Plus Real Estate Funds	1,056,319,135	2.77	0.25	0.25	-0.59	-1.82	2.69	5.27	7.95	6.11	6.64	6.50	09/01/1986
NCREIF ODCE Index (EWA) (Net) (Monthly) (1 Qtr Lag)			0.85	0.85	-2.43	-3.11	2.24	5.25	7.69	5.51	6.04	5.54	
Difference			-0.60	-0.60	1.84	1.30	0.46	0.03	0.26	0.60	0.60	0.97	
Value Add/Opportunistic SMA	236,512,081	0.62	1.00	1.00	-38.38	-26.80	-13.75	-5.96	-1.13	-0.85	0.81	2.36	06/01/1988
NCREIF ODCE Index (EWA) (Net) (Monthly) (1 Qtr Lag)			0.85	0.85	-2.43	-3.11	2.24	5.25	7.69	5.51	6.04	5.53	
Difference			0.15	0.15	-35.94	-23.69	-15.98	-11.21	-8.82	-6.36	-5.23	-3.17	
Value Add/Opportunistic Funds	767,646,668	2.01	-0.65	-0.65	-3.66	-4.43	1.76	4.51	7.89	5.00	6.48	7.10	03/01/1984
NCREIF ODCE Index (EWA) (Net) (Monthly) (1 Qtr Lag)			0.85	0.85	-2.43	-3.11	2.24	5.25	7.69	5.51	6.04	5.82	
Difference			-1.49	-1.49	-1.22	-1.31	-0.47	-0.74	0.20	-0.51	0.44	1.28	
Legacy Private Credit	339,769,993	0.89	1.33	1.33	9.14	9.20	10.72	N/A	N/A	N/A	N/A	10.16	04/01/2018
S&P Leveraged Loan Index +1.0% (1 Qtr Lag)			2.54	2.54	10.14	7.91	6.79	6.18	6.42	5.97	5.99	6.46	
Difference			-1.21	-1.21	-1.00	1.28	3.93	N/A	N/A	N/A	N/A	3.70	
Cash	737,806,885	1.93	1.11	1.11	5.20	4.44	2.71	2.10	1.50	1.95	2.33	3.50	01/01/1987
ICE BofA 3 Mo US T-Bill Index			1.02	1.02	4.97	4.23	2.56	1.87	1.27	1.68	1.90	3.23	
Difference			0.09	0.09	0.23	0.21	0.15	0.23	0.23	0.27	0.44	0.26	

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Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total Fund	38,202,777,334	100.00	9.82	12.22	-12.15	17.24	11.11	18.75	-4.55	15.08	6.51	0.40	6.35	13.61	11.96
Total Fund Custom Benchmark			9.88	12.74	-11.78	17.51	13.50	16.81	-2.09	14.46	6.81	2.85	7.32	14.13	11.66
Difference			-0.05	-0.53	-0.37	-0.27	-2.40	1.94	-2.46	0.62	-0.30	-2.45	-0.97	-0.52	0.30
Public Market Equivalent Custom Benchmark			15.19	17.12	-13.69	13.64	13.24	16.28	-1.02	16.07	8.44	0.60	7.59	15.52	15.71
Difference			-5.36	-4.91	1.55	3.60	-2.13	2.47	-3.53	-0.99	-1.92	-0.21	-1.24	-1.91	-3.75
60/40 Benchmark			10.14	15.03	-16.04	10.03	13.56	19.28	-5.93	15.39	6.22	-0.88	4.77	12.74	11.63
Difference			-0.32	-2.81	3.90	7.21	-2.45	-0.53	1.39	-0.31	0.29	1.27	1.58	0.87	0.33
U.S. Equity	14,054,096,648	36.79	23.38	25.56	-19.06	24.62	21.28	30.37	-7.48	20.54	11.17	-0.53	11.22	34.14	17.37
Russell 3000 Index*			23.81	25.96	-19.21	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56	33.55	16.42
Difference			-0.43	-0.39	0.15	-1.04	0.39	-0.65	-2.24	-0.59	-1.57	-1.01	-1.34	0.58	0.95
S&P 1500 Comp Index			23.95	25.47	-17.78	28.44	17.92	30.90	-4.96	21.13	13.03	1.01	13.08	32.80	16.17
Difference			-0.57	0.10	-1.28	-3.83	3.36	-0.54	-2.51	-0.59	-1.86	-1.55	-1.87	1.34	1.20
MCM Russell 1000 Index (SA)	13,313,710,712	34.85	24.43	26.60	-18.88	26.66	20.85	31.37	-4.63	21.62	12.15	0.94	13.20	33.12	16.04
Russell 1000 Index			24.51	26.53	-19.13	26.45	20.96	31.43	-4.78	21.69	12.05	0.92	13.24	33.11	16.42
Difference			-0.08	0.07	0.25	0.21	-0.11	-0.06	0.15	-0.07	0.10	0.02	-0.04	0.01	-0.38
S&P 500 Index (Cap Wtd)			25.02	26.29	-18.11	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39	16.00
Difference			-0.59	0.31	-0.77	-2.04	2.45	-0.12	-0.25	-0.21	0.19	-0.44	-0.49	0.73	0.04
MCM Russell 2000 Core Index (SA)	91,625,146	0.24	12.00	17.03	-20.33	17.16	19.04	25.52	-11.04	14.62	N/A	N/A	N/A	N/A	N/A
Russell 2000 Index			11.54	16.93	-20.44	14.82	19.96	25.53	-11.01	14.65	21.31	-4.41	4.89	38.82	16.35
Difference			0.46	0.10	0.11	2.35	-0.92	-0.01	-0.03	-0.02	N/A	N/A	N/A	N/A	N/A
S&P Sm Cap 600 Index (Cap Wtd)			8.70	16.05	-16.10	26.82	11.29	22.78	-8.48	13.23	26.56	-1.97	5.76	41.31	16.33
Difference			3.30	0.98	-4.23	-9.65	7.75	2.74	-2.56	1.39	N/A	N/A	N/A	N/A	N/A
MCM Russell 2000 Val Index (SA)	298,700,551	0.78	8.08	14.69	-14.32	28.33	4.66	22.36	-12.90	7.79	N/A	N/A	N/A	N/A	N/A
Russell 2000 Val Index			8.05	14.65	-14.48	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22	34.52	18.05
Difference			0.02	0.05	0.17	0.06	0.02	-0.04	-0.04	-0.05	N/A	N/A	N/A	N/A	N/A
S&P Sm Cap 600 Val Index			7.56	14.89	-11.04	30.95	2.53	24.54	-12.64	11.51	31.32	-6.67	7.54	39.98	18.21
Difference			0.52	-0.19	-3.27	-2.61	2.12	-2.18	-0.26	-3.73	N/A	N/A	N/A	N/A	N/A
Emerald Advisers Div Sm Cap Grth (SA)	350,060,239	0.92	19.85	18.59	-24.10	3.31	36.46	30.17	-11.14	26.09	N/A	N/A	N/A	N/A	N/A
Russell 2000 Grth Index			15.15	18.66	-26.36	2.83	34.63	28.48	-9.31	22.17	11.32	-1.38	5.60	43.30	14.59
Difference			4.69	-0.07	2.26	0.47	1.83	1.69	-1.83	3.92	N/A	N/A	N/A	N/A	N/A
S&P Sm Cap 600 Grth Index			9.63	17.10	-21.08	22.62	19.60	21.13	-4.05	14.79	22.16	2.78	3.87	42.69	14.56
Difference			10.22	1.49	-3.02	-19.32	16.86	9.04	-7.08	11.30	N/A	N/A	N/A	N/A	N/A

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Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
International Developed Markets Equity	5,218,960,312	13.66	4.97	18.99	-15.17	14.48	9.62	23.90	-14.83	29.12	2.05	-1.88	-4.85	23.65	18.52
MSCI Wrld Ex US Index (USD) (Net)*			4.15	17.18	-15.26	12.40	8.32	22.91	-14.68	25.17	2.95	-1.95	-4.45	21.57	16.55
Difference			0.81	1.81	0.08	2.08	1.30	1.00	-0.15	3.95	-0.90	0.07	-0.39	2.08	1.97
BlackRock MSCI World ex US Index (CF)	4,005,651,542	10.49	4.82	18.40	-13.85	13.11	8.01	22.99	-13.76	N/A	N/A	N/A	N/A	N/A	N/A
MSCI Wrld Ex US Index (USD) (Net)			4.70	17.94	-14.29	12.62	7.59	22.49	-14.09	24.21	2.75	-3.04	-4.32	21.02	16.41
Difference			0.12	0.46	0.44	0.48	0.42	0.50	0.33	N/A	N/A	N/A	N/A	N/A	N/A
Walter Scott & Ptnrs Gbl Gr Eq (SA)	801,556,961	2.10	9.16	22.91	-19.26	20.11	21.14	31.07	-0.62	27.04	6.37	2.35	3.86	22.26	19.01
MSCI Wrld Index (USD) (Net)			18.67	23.79	-18.14	21.82	15.90	27.67	-8.71	22.40	7.51	-0.87	4.94	26.68	15.83
Difference			-9.51	-0.87	-1.12	-1.70	5.24	3.40	8.09	4.64	-1.14	3.23	-1.07	-4.42	3.19
Xponance Non-US Small Cap (CIT)	249,270,000	0.65	4.78	15.89	-22.67	11.78	9.38	22.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI ACW Ex US Sm Cap Index (USD) (Net)			3.36	15.66	-19.97	12.93	14.24	22.42	-18.20	31.65	3.91	2.60	-4.03	19.73	18.52
Difference			1.43	0.23	-2.70	-1.15	-4.86	0.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Assoc Int'l SCV (SA)	159,418,021	0.42	-2.22	20.11	-14.34	19.02	7.32	32.78	-23.53	27.48	7.28	0.98	-6.81	31.25	19.16
MSCI Wrld Ex US Sm Cap Index (USD) (Net)			2.76	12.62	-20.59	11.14	12.78	25.41	-18.07	31.04	4.32	5.46	-5.35	25.55	17.48
Difference			-4.99	7.49	6.25	7.88	-5.46	7.37	-5.46	-3.55	2.96	-4.48	-1.46	5.70	1.69
MSCI Wrld Ex US Sm Val Index (USD) (Net)			2.95	14.70	-14.00	13.27	2.58	22.83	-18.38	27.93	7.87	1.06	-5.87	27.73	19.51
Difference			-5.18	5.41	-0.34	5.76	4.74	9.96	-5.15	-0.44	-0.59	-0.08	-0.94	3.52	-0.35
Emerging Markets Equity	679,941,624	1.78	8.64	11.40	-22.84	-0.45	24.45	21.32	-15.82	41.38	10.32	-12.38	-5.93	-1.09	17.02
MSCI Emg Mkts Index (USD) (Net)*			7.43	11.67	-19.83	-0.28	18.39	17.65	-15.05	36.83	9.90	-13.86	-1.79	-2.20	18.69
Difference			1.21	-0.27	-3.00	-0.17	6.05	3.67	-0.78	4.55	0.42	1.48	-4.14	1.10	-1.67
BlackRock MSCI Emg Mkts Index (CF)	679,222,068	1.78	7.13	9.25	-20.20	-2.75	17.85	18.12	-14.75	N/A	N/A	N/A	N/A	N/A	N/A
MSCI Emg Mkts Index (USD) (Net)			7.50	9.83	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19	-2.60	18.23
Difference			-0.38	-0.57	-0.11	-0.21	-0.46	-0.30	-0.18	N/A	N/A	N/A	N/A	N/A	N/A

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Private Equity	6,666,649,200	17.45	6.28	6.59	-5.06	52.83	18.37	9.55	11.90	12.83	6.79	6.42	13.15	12.56	11.42
Burgiss All Pvt Equity Custom Index (1 Qtr Lag)			8.18	4.44	-1.43	49.63	15.83	9.24	16.85	15.68	8.91	8.70	16.59	15.97	12.65
Difference			-1.90	2.15	-3.63	3.20	2.53	0.32	-4.95	-2.85	-2.12	-2.28	-3.44	-3.41	-1.23
Global Equity+3% (1 Qtr Lag)			35.89	24.90	-15.48	33.88	15.55	6.65	20.71	21.76	18.22	2.71	20.90	24.74	33.54
Difference			-29.61	-18.31	10.43	18.95	2.82	2.91	-8.81	-8.93	-11.43	3.72	-7.76	-12.18	-22.12
Buyouts	3,679,721,130	9.63	4.14	7.61	-0.41	41.70	20.77	8.69	13.04	15.32	10.85	7.77	15.31	13.75	20.67
Burgiss Buyout Custom Index (1 Qtr Lag)			9.56	9.45	2.56	46.55	13.38	8.39	16.08	18.95	11.99	6.27	15.05	16.60	13.46
Difference			-5.41	-1.84	-2.97	-4.84	7.39	0.30	-3.04	-3.63	-1.14	1.50	0.26	-2.84	7.21
Special Situations	1,741,473,471	4.56	10.74	8.78	10.74	48.46	9.32	17.28	7.55	17.50	1.13	1.67	9.00	16.79	8.32
Burgiss Special Situations Custom Index (1 Qtr Lag)			10.08	9.98	3.73	18.71	2.39	3.95	8.90	10.39	5.87	4.48	11.95	13.81	14.24
Difference			0.66	-1.20	7.01	29.75	6.92	13.33	-1.35	7.11	-4.73	-2.82	-2.95	2.98	-5.92
Growth Equity	1,094,952,477	2.87	8.86	1.36	-15.66	81.31	37.49	22.47	23.49	4.36	1.25	6.09	9.93	6.07	7.73
Burgiss Venture Capital Custom Index (1 Qtr Lag)			4.01	-8.90	-10.60	78.26	30.72	14.74	25.38	10.26	3.22	25.47	28.85	15.34	6.03
Difference			4.85	10.27	-5.06	3.05	6.77	7.73	-1.88	-5.90	-1.97	-19.38	-18.93	-9.27	1.70
Keystone Legacy	150,502,120	0.39	-7.77	1.83	-41.45	57.71	-6.30	-1.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fixed Income	7,293,481,851	19.09	2.48	5.57	-12.34	-0.75	5.78	9.51	-0.99	4.68	5.62	-2.73	6.21	-1.37	10.01
Bloomberg US Agg Bond Index			1.25	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97	-2.02	4.21
Difference			1.23	0.04	0.67	0.79	-1.72	0.80	-1.01	1.13	2.97	-3.28	0.25	0.66	5.79
Core Fixed Income	4,619,606,142	12.09	1.69	5.76	-11.94	-1.58	6.86	9.64	-0.60	4.34	3.54	-0.02	5.98	-2.10	8.07
Bloomberg US Agg Bond Index			1.25	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97	-2.02	4.21
Difference			0.44	0.23	1.07	-0.03	-0.65	0.93	-0.62	0.80	0.89	-0.57	0.01	-0.08	3.85
MCM Bond Index (SA)	4,043,103,936	10.58	1.48	5.62	-13.00	-1.76	7.42	8.65	0.01	3.54	2.51	0.51	5.98	-2.25	3.76
Bloomberg US Agg Bond Index*			1.25	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97	-2.02	4.21
Difference			0.23	0.09	0.01	-0.21	-0.08	-0.07	0.00	0.00	-0.14	-0.04	0.02	-0.23	-0.46
PIMCO Core Bond Fund (SA)	576,502,206	1.51	2.50	6.80	-13.21	-0.86	7.65	9.80	-0.79	4.98	3.48	0.14	5.87	-2.75	N/A
Bloomberg US Aggregate ex Treasury			1.76	6.58	-13.35	-1.08	6.85	9.93	-0.51	4.26	3.58	0.39	6.47	-1.61	5.46
Difference			0.73	0.22	0.14	0.22	0.81	-0.13	-0.29	0.72	-0.10	-0.25	-0.60	-1.14	N/A

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Opportunistic Fixed Income	819,079,493	2.14	10.94	7.62	6.46	8.01	2.87	10.84	-2.08	6.52	11.11	-8.50	7.44	5.75	N/A
HFRI FOF Comp Index			9.15	6.07	-5.31	6.17	10.88	8.39	-4.02	7.77	0.51	-0.27	3.37	8.96	4.79
Difference			1.79	1.55	11.77	1.84	-8.01	2.45	1.93	-1.25	10.59	-8.23	4.07	-3.21	N/A
Blackstone Keystone Fund (CF)	819,079,493	2.14	10.94	7.62	6.67	11.00	2.54	11.18	-0.34	7.94	2.92	2.29	9.51	15.72	N/A
HFRI FOF Comp Index			9.15	6.07	-5.31	6.17	10.88	8.39	-4.02	7.77	0.51	-0.27	3.37	8.96	4.79
Difference			1.79	1.55	11.98	4.82	-8.34	2.79	3.68	0.16	2.41	2.56	6.14	6.76	N/A
Nominal U.S. Treasuries	1,828,040,735	4.79	0.11	3.55	-17.68	-5.71	11.12	8.78	0.60	2.42	0.48	1.18	10.39	-7.46	4.17
Bloomberg US Trsy Bellwethers 10 Yr Index			-1.73	3.21	-16.33	-3.60	10.61	8.90	0.00	2.14	-0.16	0.91	10.74	-7.81	4.13
Difference			1.84	0.34	-1.35	-2.11	0.51	-0.12	0.60	0.28	0.64	0.27	-0.36	0.34	0.04
MCM US Treas Index (SA)	1,828,040,733	4.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bloomberg US Trsy Index			0.58	4.05	-12.46	-2.32	8.00	6.86	0.86	2.31	1.04	0.84	5.05	-2.75	1.99
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Legacy Fixed Income	26,755,482	0.07	16.46	-3.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bloomberg US CMBS Ex AAA Index			6.04	3.63	-13.65	2.86	4.13	10.39	2.05	6.03	4.57	0.07	3.89	1.43	15.53
Difference			10.42	-7.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fidelity HY CMBS (SA)	26,755,482	0.07	17.36	-4.14	-7.37	8.10	-5.48	8.11	3.45	5.68	3.13	3.89	10.37	10.70	23.13
Bloomberg US CMBS Ex AAA Index*			6.04	3.63	-13.65	2.86	4.13	10.39	2.05	6.03	4.57	0.07	3.89	1.43	15.53
Difference			11.32	-7.78	6.28	5.24	-9.61	-2.29	1.41	-0.36	-1.44	3.82	6.48	9.28	7.61
Inflation Protection (TIPS)	989,092,674	2.59	1.81	3.85	-12.99	5.16	11.04	8.36	-1.75	3.89	4.64	-1.71	3.87	-8.12	5.01
Bloomberg US Trsy US TIPS Index			1.84	3.90	-11.85	5.96	10.99	8.43	-1.26	3.01	4.68	-1.44	3.64	-8.61	6.98
Difference			-0.02	-0.05	-1.15	-0.79	0.05	-0.07	-0.49	0.89	-0.05	-0.27	0.23	0.49	-1.97
NISA Inv Adv TIPS (SA)	483,533,826	1.27	2.05	3.81	-11.90	5.95	10.89	8.35	-1.32	3.12	4.70	-1.39	3.61	-8.69	3.85
Bloomberg US Trsy US TIPS Index*			1.84	3.90	-11.85	5.96	10.99	8.43	-1.26	3.01	4.68	-1.44	3.64	-8.61	3.81
Difference			0.22	-0.08	-0.06	-0.01	-0.10	-0.08	-0.05	0.12	0.02	0.05	-0.03	-0.08	0.03
Brown Brothers TIPS (SA)	505,553,135	1.32	1.88	3.51	-11.67	5.79	10.64	8.42	-1.36	2.90	4.93	-1.09	3.79	-8.44	N/A
Bloomberg US Trsy US TIPS Index			1.84	3.90	-11.85	5.96	10.99	8.43	-1.26	3.01	4.68	-1.44	3.64	-8.61	6.98
Difference			0.04	-0.38	0.18	-0.17	-0.36	0.00	-0.10	-0.11	0.24	0.35	0.15	0.16	N/A

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Pennsylvania State Employees' Retirement System Defined Benefit Plan
Asset Allocation & Performance - Net

As of March 31, 2025

	Allocation		Performance (%)												
	Market Value (\$)	%	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Real Estate	2,206,854,347	5.78	-12.25	-11.91	6.02	18.04	2.11	10.98	-2.34	2.02	3.23	9.92	10.94	13.70	9.89
Real Estate Custom Benchmark			-8.44	-13.08	17.38	17.48	0.25	4.75	7.24	5.61	9.87	12.86	11.38	12.41	12.82
Difference			-3.81	1.17	-11.36	0.56	1.86	6.23	-9.57	-3.59	-6.65	-2.94	-0.44	1.29	-2.94
CPI (All Urban Consumers) +3% (1 Qtr Lag)			5.51	6.81	11.45	8.55	4.41	4.76	5.35	5.30	4.51	2.96	4.71	4.22	5.05
Difference			-17.76	-18.72	-5.42	9.49	-2.30	6.22	-7.68	-3.28	-1.28	6.96	6.23	9.48	4.83
Real Estate Securities	146,376,462	0.38	11.26	13.21	-23.73	42.47	-4.20	26.81	-3.52	-4.74	13.96	4.63	8.44	12.02	27.90
FTSE NAREIT Eq REITs Index (TR)			8.73	13.73	-24.34	43.24	-8.00	26.00	-4.62	5.23	8.52	3.20	30.14	2.47	18.06
Difference			2.53	-0.52	0.61	-0.76	3.80	0.81	1.10	-9.97	5.44	1.43	-21.70	9.55	9.84
CenterSquare (SA)	146,374,541	0.38	11.26	14.14	-23.73	42.15	-4.20	26.80	-5.00	6.33	8.46	4.95	32.21	3.24	17.14
FTSE NAREIT Eq REITs Index (TR)			8.73	13.73	-24.34	43.24	-8.00	26.00	-4.62	5.23	8.52	3.20	30.14	2.47	18.06
Difference			2.53	0.40	0.61	-1.09	3.80	0.80	-0.37	1.10	-0.06	1.76	2.07	0.77	-0.92
Core/Core Plus Real Estate Funds	1,056,319,135	2.77	-7.13	-6.17	14.63	12.91	2.11	4.00	8.80	5.91	9.89	12.19	11.28	12.74	13.12
NCREIF ODCE Index (EWA) (Net) (Monthly) (1 Qtr Lag)			-8.44	-13.08	21.68	14.83	0.89	5.26	7.89	6.93	9.69	13.82	11.44	11.46	10.69
Difference			1.32	6.91	-7.05	-1.92	1.21	-1.26	0.91	-1.02	0.20	-1.63	-0.16	1.28	2.42
Value Add/Opportunistic SMA	236,512,081	0.62	-43.83	-31.23	0.88	12.67	8.22	15.76	-12.22	1.57	-2.35	11.44	9.43	14.65	3.91
NCREIF ODCE Index (EWA) (Net) (Monthly) (1 Qtr Lag)			-8.44	-13.08	21.68	14.83	0.89	5.26	7.89	6.93	9.69	13.82	11.44	11.46	10.69
Difference			-35.39	-18.15	-20.80	-2.15	7.33	10.50	-20.11	-5.37	-12.04	-2.38	-2.01	3.19	-6.78
Value Add/Opportunistic Funds	767,646,668	2.01	-6.96	-10.80	12.11	23.05	-1.54	5.60	8.98	8.03	6.01	9.46	16.34	15.37	12.04
NCREIF ODCE Index (EWA) (Net) (Monthly) (1 Qtr Lag)			-8.44	-13.08	21.68	14.83	0.89	5.26	7.89	6.93	9.69	13.82	11.44	11.46	10.69
Difference			1.48	2.28	-9.57	8.22	-2.44	0.34	1.09	1.10	-3.68	-4.36	4.90	3.91	1.35
Legacy Private Credit	339,769,993	0.89	10.50	10.85	8.00	21.24	3.26	8.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S&P Leveraged Loan Index +1.0% (1 Qtr Lag)			10.75	13.60	-1.65	9.54	1.84	4.14	6.63	6.42	6.40	2.25	5.35	6.89	11.84
Difference			-0.25	-2.75	9.65	11.70	1.42	4.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cash	737,806,885	1.93	5.44	5.14	1.65	0.06	0.64	2.32	2.10	1.49	0.63	0.72	0.41	0.19	0.38
ICE BofA 3 Mo US T-Bill Index			5.25	5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.33	0.05	0.04	0.07	0.11
Difference			0.19	0.12	0.19	0.01	-0.03	0.04	0.22	0.63	0.30	0.67	0.38	0.12	0.27

Performance shown is net of fees. Performance is annualized for periods greater than one year. *See addendum for custom benchmark definitions.

Appendix

Pennsylvania State Employees' Retirement System Defined Benefit Plan Addendum

As of March 31, 2025

Performance Related Comments:

- Performance and accounting data are provided by BNY Mellon.
- Market Values shown are net of accrued fees.
- Performance for the Burgiss Custom Indices is available 1 quarter in arrears, 0.00% return is assumed for inter-quarter months and until available.

Custom Benchmark Definitions:

- Total Fund Custom Benchmark currently consists of 19% Bloomberg U.S. Aggregate Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex U.S. (Net), 7% NCREIF ODCE Index (EWA) (Net) (1 Qtr Lag), 2% MSCI Emerging Markets (Net), 3% Bloomberg U.S. TIPS Index, and 2% ICE BofA 3 Month U.S. T-Bill. Total Fund Custom Benchmark returns prior to 12/31/2024 were provided by Callan.
- Public Market Equivalent Custom Benchmark currently consists of 19% Bloomberg U.S. Aggregate Index, 37% Russell 3000 Index, 14% MSCI World ex U.S. (Net), 12% Russell 3000 Index +3% (1 Qtr Lag), 7% Consumer Price Index (All Urban Consumers) +3% (1 Qtr Lag), 3% Bloomberg U.S. TIPS Index, 2% MSCI Emerging Markets (Net), 4% MSCI World ex U.S. (Net) +3% (1 Qtr Lag), and 2% ICE BofA 3 Month U.S. T-Bill. Public Market Equivalent Custom Benchmark returns prior to 12/31/2024 were provided by Callan.
- 60/40 Benchmark consists of 60% MSCI AC World IMI Index (Net) and 40% Bloomberg U.S. Aggregate Index.
- Russell 3000 Index* currently consists of 100% Russell 3000 Index. Prior to 12/31/1998, the benchmark consisted of 100% Wilshire 5000 Value Weighted Total Index.
- MSCI Wrld Ex US Index (USD) (Net)* currently consists of 100% MSCI World ex U.S. (Net). Prior to 6/30/2024, the benchmark consisted of 100% MSCI World ex U.S. IMI Index (Net).
- MSCI Emg Mkts Index (USD) (Net)* currently consists of 100% MSCI Emerging Markets (Net). Prior to 6/30/2024, the benchmark consisted of 100% MSCI Emerging Markets IMI (Net).
- Global Equity +3% (1 Qtr Lag) currently consists of 75% Russell 3000 Index +3% (1 Qtr Lag) and 25% MSCI World ex U.S. (Net) (1 Qtr Lag). Global Equity +3% (1 Qtr Lag) returns prior to 12/31/2024 were provided by Callan.
- Bloomberg US Agg Bond Index* currently consists of 100% Bloomberg U.S. Aggregate Index. Prior to 12/31/2002, the benchmark consisted of 20% Bloomberg U.S. Government: Intermediate Index, 30% Bloomberg U.S. Government: Long Term Bond Index, 25% Bloomberg U.S. Corporate Investment Grade Index, and 25% Bloomberg U.S. Mortgage Backed Securities.
- Bloomberg US CMBS Ex AAA Index* currently consists of 100% Bloomberg U.S. CMBS ex AAA Index. Prior to 12/31/2009, the benchmark consisted of 100% FTSE High Yield Market Index.
- Bloomberg US Trsy US TIPS Index* currently consists of 100% Bloomberg U.S. TIPS Index. Prior to 12/31/2012, the benchmark was a custom blend of TIPS based on the following: 1) Identify all TIPS with real durations between 4 and 6 years and find the average duration of all such; 2) Identify all TIPS with real durations between 2 and 4 years and find the average duration of all such securities 3) Weight each of the buckets created in steps 1 and 2 such that the weighted average real duration of all included securities is 4.0 years. If there are less than two securities identified in #1 above, the two TIPS with real durations immediately above 4 years will be identified. If there are less than two securities identified in #2 above, the two TIPS with real durations immediately below 4 years will be identified.
- Real Estate Custom Benchmark currently consists of 100% NCREIF ODCE Index (EWA) (Net) (1 Qtr Lag). Real Estate Custom Benchmark returns prior to 12/31/2024 were provided by Callan.

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Glossary

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.

Purchasing Managers Index (PMI) - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.

Real Gross Domestic Product (Real GDP) - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.

Unemployment Rate - The percentage of the total labor force that is unemployed but actively seeking employment.

US Dollar Total Weighted Index - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.

VIX - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."

Cash Flow Effect – The composite's active return minus the sum of each managers' active return minus the benchmark effect.

Consistency - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.

Convexity - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.

Correlation - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.

Coupon Rate - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.

Current Yield - The annual income of a security divided by the security's current price.

Down Market Capture - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.

Downside Risk - A measure similar to standard deviation that focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative returns for the selected periodicity. The higher the factor, the riskier the product.

Earnings Per Share - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.

Effective Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield.

Excess Return vs. Market - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.

Excess Return vs. Risk Free - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., ICE BofA 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.

Glossary

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.

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

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

Peer Groups -

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

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

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

1 - Highest Statistical Value

100 - Lowest Statistical Value

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

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

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

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

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

Portfolio Characteristics & Distribution (%) - Due to disclosure guidelines set by each investment manager, portfolio characteristics and distribution percentages shown are as of the most recent date available.

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

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

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

Return - Compounded rate of return for the period.

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

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

Glossary

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

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

Sector Allocation - Negative fixed income sector allocation reflects manager's use of derivatives, short selling, or interest rate swaps. An allocation to "Other" is the result of securities that do not fit into RVK's standardized classification, such as Catastrophe, CLOs, Common Stock, Convertibles, CRTs, Derivatives, Direct Loans, Emerging Markets Local Corporates, ETFs, FX Forwards, Infrastructure Debt, Reverse Repo, Swaps, Trade Finance, Unsecured Bonds, and Other Assets.

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

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

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

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

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

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

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

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

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

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

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

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

Glossary

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.

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 BofA 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

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

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

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

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

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