

**Kentucky Retirement Systems
Investment Committee Meeting
February 19, 2025, at 10:00 a.m. ET (9:00 a.m. CT)
Via Video Teleconference and Facebook Live**

AGENDA

- | | | |
|-----|--|------------------------------|
| 1. | Call to Order | Prewitt Lane |
| 2. | Opening Legal Statement | Victoria Hale |
| 3. | Roll Call | Sherry Rankin |
| 4. | Public Comment | Sherry Rankin |
| 5. | Approval of Minutes* - November 21 2024 and
December 17, 2024 | Prewitt Lane |
| 6. | Investment Review and Update | Investment Staff
Wilshire |
| 7. | Quarterly Investment Budget Update | Steve Willer |
| 8. | Public Equity Investment Recommendations* | Joe Gilbert
Wilshire |
| 9. | Real Return Investment Recommendation* | Anthony Chiu |
| 10. | Investment Policy Statement – Performance
Benchmark Recommendation* | Joe Gilbert
Wilshire |
| 11. | Investment Compliance Review | Carrie Bass |
| 12. | Adjourn* | Prewitt Lane |

** Committee Action May be Taken*

**MINUTES OF MEETING
KENTUCKY RETIREMENT SYSTEMS
INVESTMENT COMMITTEE MEETING
NOVEMBER 21, 2024, 10:00 A.M., E.T.
VIA LIVE VIDEO TELECONFERENCE**

At the November 21, 2024, Regular Meeting of the Kentucky Retirement Systems' (KRS) Investment Committee, the following Committee members were present: Ramsey Bova (Acting Chair), Pamela Thompson, and David Adkins. Staff members present were Ryan Barrow, Rebecca Adkins, Erin Surratt, Victoria Hale, Michael Lamb, Carrie Bass, Steve Willer, Anthony Chiu, Brian Caldwell, Joe Gilbert, Ashley Gabbard, Shaun Case, Sandy Hardin, and Sherry Rankin. Others in attendance included KRS CEO John Chilton and David Lindberg, Chris Tessman, and Craig Morton with Wilshire Advisors, LLC.

1. Due to the absence of Mr. Lane, Ms. Bova presided over the meeting and called the meeting to order.
2. Ms. Hale read the Opening Statement.
3. Ms. Rankin took Roll Call.
4. Ms. Rankin reported there were no **Public Comments**.
5. Ms. Bova introduced agenda item **Approval of Minutes – May 16, 2024; August 21, 2024; September 6, 2024; and October 22, 2024.** (Video 00:08:06 to 00:08:48). Mr. Adkins made the motion to approve the minutes of May 16, 2024; August 21, 2024; September 6, 2024; and October 22, 2024, as presented. Ms. Thompson seconded the motion, and the motion passed unanimously.
6. Ms. Bova introduced agenda item **Investment Review and Update** (Video 00:08:48 to 00:41:27). First, David Lindberg announced that there will be a Wilshire Client Conference on April 8 and 9, 2025, at the Ritz Carlton in Rancho Mirage, California.

Next, Craig Morton and David Lindberg from Wilshire presented the Economic Update and performance data for the last quarter ending September 30, 2024. Mr. Willer then presented the Market Update and reviewed the plan performance data for the quarter ending September 30, 2024, for KERS Nonhazardous, KERS Hazardous, and SPRS. Mr. Willer also presented the year-to-date investment highlights, as well as the KRS Compliance Report for the period ending September 30, 2024. Additionally, he informed the committee that Ms. Carrie Bass has been appointed as the new Compliance Officer.

7. Mr. Willer continued with the next agenda item ***Quarterly Investment Budget Update*** (Video 00:41:27 to 00:58:24). Mr. Willer reviewed the Investment Budget Update and the Pension and Insurance Investment Fees and Expenses for the nine (9) month period ending September 30, 2024.

Mr. Adkins asked the staff to provide input on how to effectively reassure retirees about our investment strategies. Specifically, he wanted to know how our long-term strategy aims to deliver the necessary returns to incrementally build confidence that the Commonwealth's promises can be fulfilled. He emphasized the need to assure retirees that our decisions are being made with careful consideration and expertise, aiming to achieve these goals responsibly and prudently. Mr. Barrow noted that Ms. Adkins and he testified to the Public Pension Oversight Board (PPOB) and discussed the commitment versus the capital behind it. He noted our focus is on a 2049 strategy, which is a closed amortization where the commitments made by the Commonwealth will equal the capital supporting them. Mr. Willer then assured that the investment staff maintains an excellent working relationship with the Board and has a clear plan and path towards achieving a fully funded plan. This strong collaboration is reflected in the performance of our systems. He explained that they diligently monitor and adjust their strategies to ensure optimal performance, focusing on long-term stability.

8. There being no further business, Ms. Bova ***adjourned*** the meeting.

Copies of all documents presented are incorporated as part of the minutes of the Kentucky Retirement Systems' Investment Committee meeting held on November 21, 2024.

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CERTIFICATION

I do certify that I was present at this meeting, and I have recorded above the action of the Committee on the various items considered by it at this meeting. Further, I certify that all requirements of KRS 61.805-61.850 were met in connection with this meeting.

Recording Secretary

I, as Chair of the Kentucky Retirement Systems Investment Committee, do certify that the Minutes of the meeting held on November 21, 2024, were approved by the Kentucky Retirement Systems Investment Committee on February 19, 2025.

Committee Chair

I have reviewed the Minutes of the Kentucky Retirement Systems Investment Committee Meeting on November 21, 2024, for form, content, and legality.

Office of Legal Services

**MINUTES OF MEETING
KENTUCKY RETIREMENT SYSTEMS
SPECIAL CALLED
INVESTMENT COMMITTEE MEETING
DECEMBER 17, 2024, 11:30 A.M., E.T.
VIA LIVE VIDEO TELECONFERENCE**

At the December 17, 2024, Special Called Meeting of the Kentucky Retirement Systems' (KRS) Investment Committee, the following Committee members were present: Lane Prewitt, David Adkins, Ramsey Bova, and Pamela Thompson. Staff members present were Ryan Barrow, Rebecca Adkins, Erin Surratt, Michael Board, Victoria Hale, Carrie Bass, Steve Willer, Anthony Chiu, Brian Caldwell, Joe Gilbert, Ashley Gabbard, Phillip Cook, Sandy Hardin, and Sherry Rankin. Others in attendance included KRS CEO John Chilton and David Lindberg, Chris Tessman, and Craig Morton with Wilshire Advisors, LLC.

1. Mr. Lane called the meeting to order.
2. Ms. Hale read the Opening Statement.
3. Ms. Rankin took Roll Call.
4. Ms. Rankin reported there were no ***Public Comments***.
5. Mr. Lane introduced agenda item ***Real Return Investment Recommendation*** (*Video 00:08:33 to 00:26:59*). Mr. Steve Willer began the presentation with a brief synopsis and then invited Mr. Anthony Chiu to present an overview of the other Real Return strategies that were reviewed or under consideration. Mr. Willer also reviewed the KRS Pension Portfolio, highlighting the Real Return Allocations and their impact and rationale.

Mr. Chiu then presented a proposed investment by the KPPA Investment Staff in the ITE Rail Fund, L.P., an open-ended fund managed by Industrial Transportation Equipment. Mr. Chiu reviewed the details of this proposal, concluding that given the attractive risk/reward profile, compelling market opportunity, and current Real Return allocations, the Investment Staff

recommends an investment of up to \$100 million. This amount would be shared among all KERS and SPRS portfolios, pending successful legal negotiations. When fully funded, this investment would represent approximately 1.0% to 1.1% of Plan assets, depending on market value fluctuations. It is anticipated that the investment would be funded by unwinding proxy positions and using existing cash, based on the specific needs of each portfolio. The expected net return for this investment is projected to be between 6% and 9%.

A motion was made by Ms. Bova to approve the KPPA Investment Staff's recommendation to authorize up to \$100 million investment by KRS into the ITE Rail Fund, L.P., subject to successful contract negotiations. Mr. Adkins seconded the motion, and the motion passed unanimously.

6. There being no further business, Mr. Lane *adjourned* the meeting.

Copies of all documents presented are incorporated as part of the minutes of the Kentucky Retirement Systems' Investment Committee meeting held on December 17, 2024.

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Recording Secretary

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Committee Chair

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Office of Legal Services

Kentucky Retirement Systems

Investment Review and Update

Quarter Ending: December 31, 2024

Kentucky Retirement Systems

Economic and Market Update

Quarter Ending: December 31, 2024

Save the Date! Wilshire Client Conference

Back – and Better Than Ever!



Nearest Airports include Palm Springs (7 miles),
Ontario (80 miles), and LAX (130 miles)

The Wilshire Client Conference
returns this spring:

- **April 8 and 9, 2025**
- **Ritz Carlton,
Rancho Mirage, California**

Agenda forthcoming, but educational
topics include:

- Asset Allocation
- Private Credit
- Private Equity
- Risk Management
- Economic Outlook
- Alternative Yield
- Manager Sourcing
- Emerging Markets

For more information contact: wilshireconference25@wilshire.com

Market Commentary

U.S. Equity

The U.S. stock market was up 2.6% for the fourth quarter and is up 23.8% for the year-to-date. Sector performance was, in fact, mostly negative for the quarter, with seven sectors producing a loss. However, the three largest sectors by market capitalization were all up – information technology (+5.9%), financials (+7.8%) and consumer discretionary (+12.3%). Small-cap underperformed large-cap by 180 basis points while growth stocks generally outperformed value by a large margin.

The Federal Reserve began raising rates in early 2022 in response to 7% annual inflation, which continued to accelerate to 9%. Rates were increased by 525 basis points during a 17-month period before pausing for roughly one year. The U.S. central bank began decreasing rates during 2024 – by a total of 100 basis points in three meetings. While it is probably too early to judge whether they achieved a “soft landing,” early data is positive. The unemployment rate is low – although jobs growth has been unsteady – and the economy continues to expand. However, inflation ticked higher during the fourth quarter and the Fed took notice. Current expectations for rate cuts in 2025 are modest (-0.50%) and down meaningfully from September.

Non-U.S. Equity

Economic growth in England continues to slow with business confidence waning. Prospects in Germany, Europe’s largest economy, are equally dim due to persistently high energy prices and growing competition with China. Currency changes played a major role in U.S. dollar returns this quarter as the dollar rose meaningfully versus the euro, pound and yen. China’s economy may be turning a corner after several stimulative macroeconomic policies were announced in September. Early indicators show strength in the services sector along with growth in retail sales.

Fixed Income

The U.S. Treasury yield curve was up across most of the maturity spectrum. The 10-year Treasury yield ended the quarter at 4.57%, up 79 basis points from September. The FOMC met twice during the quarter and decreased their overnight rate by a total of -0.50%. Expectations for rate cuts next year have come down as some officials are concerned that the new administration’s preference for tariffs could push prices higher. In fact, Fed Chair Jerome Powell recently stated that, “when the path is uncertain, you go a little slower.”

December 2024 Asset Class Assumptions

	Equity						Fixed Income						Real Assets						
	U.S. Stock	Dev ex-U.S. Stock	Emg Stock	Global ex-U.S. Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Private Credit	Dev ex-U.S. Bond (Hdg)	Real Estate			U.S. CPI		
	U.S. RES	Global RES	Private RE	Cmdty	Real Assets	U.S. CPI													
Compound Return (%)	4.35	5.35	5.60	5.40	4.70	6.25	3.60	5.20	5.30	4.70	6.35	7.75	3.00	5.70	5.70	6.40	4.85	6.15	2.35
Arithmetic Return (%)	5.70	6.85	8.60	7.10	6.05	10.00	3.60	5.30	5.75	4.85	6.80	8.50	3.10	7.10	6.95	7.30	6.05	6.90	2.35
Risk (%)	17.00	18.00	26.00	19.05	17.00	29.65	0.75	4.75	9.90	6.00	10.00	12.75	4.00	17.50	16.55	13.95	16.00	12.60	1.75
Yield (%)	1.25	3.00	2.50	2.85	1.80	0.00	3.60	5.65	5.70	5.05	9.80	4.85	4.25	3.95	3.95	2.85	3.60	3.70	0.00
Growth Factor Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.95	-2.55	-3.00	4.00	5.10	-1.00	6.00	6.00	3.70	0.00	0.70	0.00
Inflation Factor Exposure	-3.00	-1.00	3.00	0.15	-1.95	-4.25	0.00	-2.60	-6.95	2.50	-1.00	-1.50	-3.00	1.00	1.65	1.00	12.00	4.60	1.00

Correlations

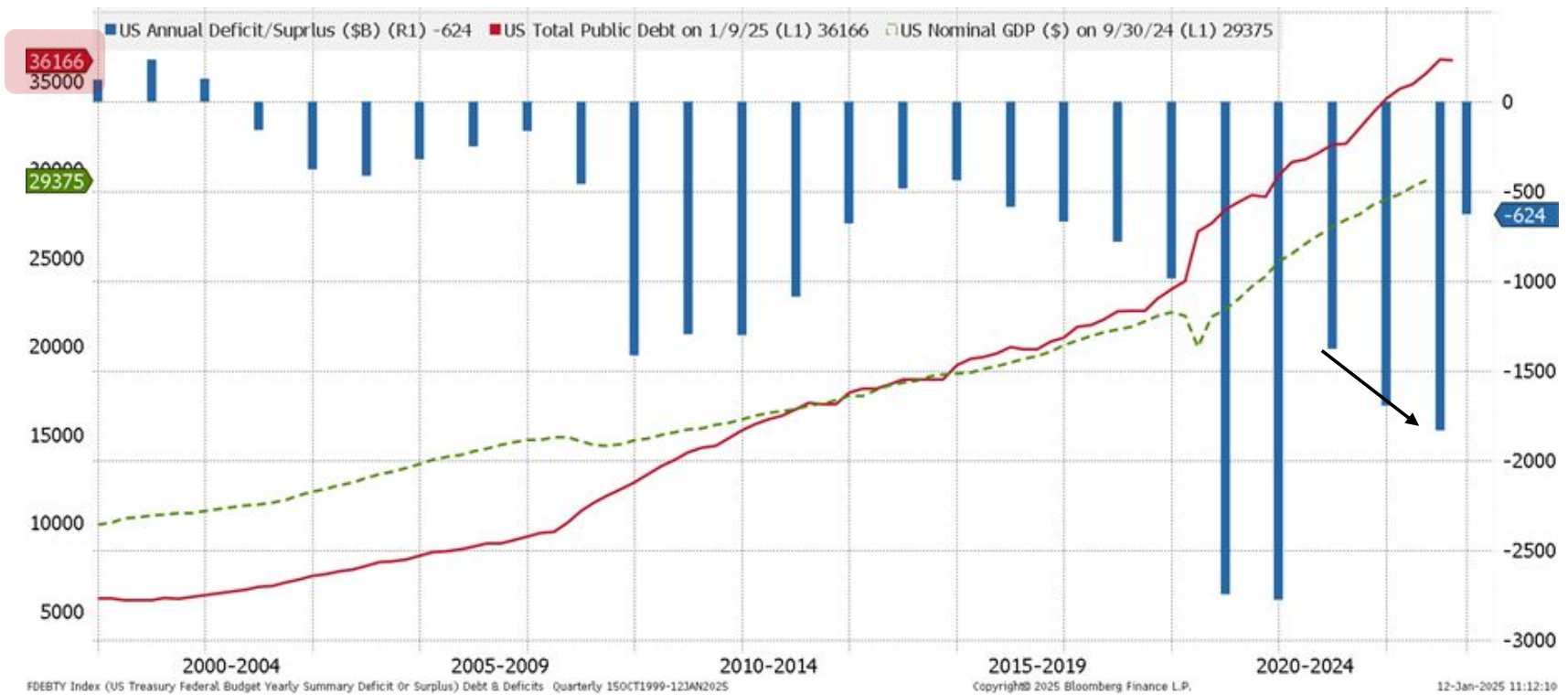
U.S. Stock	1.00																			
Dev ex-U.S. Stock (USD)	0.81	1.00																		
Emerging Mkt Stock	0.74	0.74	1.00																	
Global ex-U.S. Stock	0.84	0.96	0.89	1.00																
Global Stock	0.98	0.90	0.83	0.93	1.00															
Private Equity	0.72	0.63	0.61	0.66	0.73	1.00														
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00													
Core Bond	0.27	0.13	0.00	0.08	0.21	0.30	0.18	1.00												
LT Core Bond	0.30	0.15	0.00	0.10	0.24	0.31	0.11	0.95	1.00											
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.47	1.00										
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00									
Private Credit	0.68	0.55	0.58	0.60	0.68	0.44	0.00	0.23	0.30	0.00	0.76	1.00								
Dev ex-U.S. Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.68	0.66	0.39	0.26	0.22	1.00							
U.S. RE Securities	0.57	0.47	0.44	0.49	0.56	0.49	-0.05	0.17	0.22	0.10	0.56	0.62	0.05	1.00						
Global RE Securities	0.62	0.55	0.52	0.58	0.63	0.54	-0.05	0.17	0.21	0.11	0.61	0.67	0.04	0.99	1.00					
Private Real Estate	0.55	0.45	0.45	0.48	0.55	0.50	-0.05	0.18	0.24	0.09	0.58	0.63	0.05	0.79	0.79	1.00				
Commodities	0.25	0.34	0.39	0.38	0.31	0.28	0.00	-0.03	-0.04	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00			
Real Assets	0.62	0.63	0.65	0.68	0.67	0.57	-0.03	0.24	0.25	0.32	0.64	0.69	0.06	0.79	0.83	0.77	0.63	1.00		
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.12	-0.10	0.10	-0.12	-0.12	0.15	-0.08	0.00	-0.08	0.05	0.04	0.05	0.44	0.21	1.00	

2024 Rate Environment Segmented



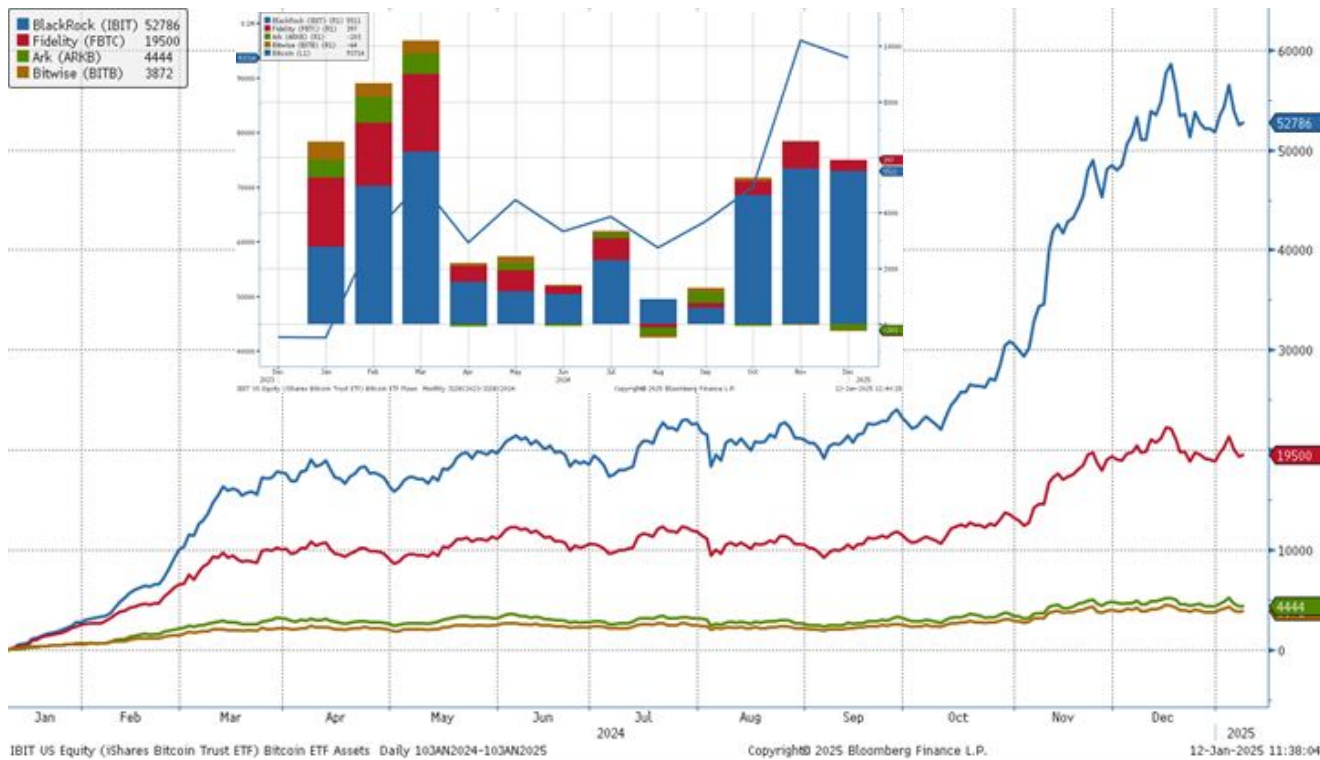
Data Source: Bloomberg

Debt / Deficit Picture



Data Source: Bloomberg

Bitcoin Demand: ETF Approval Provides Familiar Access to BTC



Data Source: Bloomberg

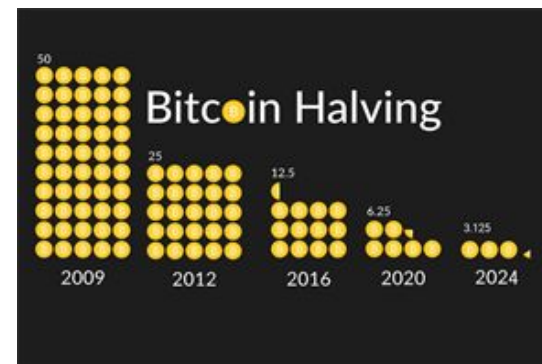
Largest 4 of the new ETFs launched Jan. 2024

- ~\$55B in flows
- ~\$80B in Assets

Bitcoin Supply

- Only 21 million Bitcoin can ever be created
 - Nearly 95% of which (~19.9 million) already exist today
- Bitcoin supply scarcity is controlled by its creation (“mining”) process
 - Some # of BTC are earned for “solving” blocks in the Bitcoin time chain
 - Rewards drop by half every 210,000 blocks (at ~ 10 minutes per block, this occurs every ~4 years)
 - The last “halving” occurred in April 2024
- Bitcoin’s scarcity — with superior stock-to-flow vs. gold — leads to its Real Asset use case

Event	Date	Bitcoin (millions)		% Mined	Reward	Stock / Flow
		Mined	Left			
BTC Launch	Jan 2009	0.00	21.00	0.0%	50	
1st Halving	Nov 2012	10.50	10.50	50.0%	25	8
2nd Halving	Jul 2016	15.75	5.25	75.0%	12.5	24
3rd Halving	May 2020	18.38	2.63	87.5%	6.25	56
4th Halving	Apr 2024	19.69	1.31	93.8%	3.125	120
5th Halving	Mar 2028	20.34	0.66	96.9%	1.5625	248
...



Summary Changes

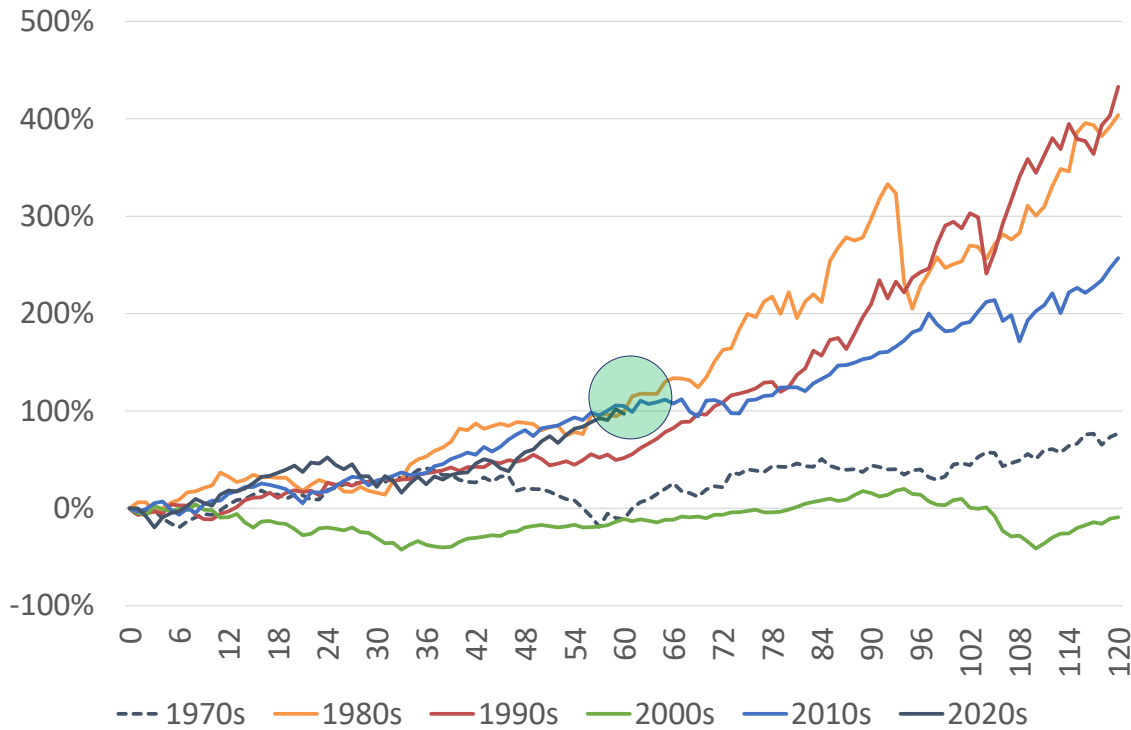
- Yield curve up across most of the maturity spectrum, except the very short term
 - Curve movements resulted in higher forecasts for fixed income asset classes
 - Slight decrease in spreads for investment grade and high yield bonds
- Yields on most real asset securities are up from last quarter; inflation assumption up at 2.35%
- Equity assumptions are up slightly; private equity up to the same degree due to higher leverage costs
- Equity risk premium worsened due to the larger increase in fixed income forecasts

Asset Class Assumption	Total Return (%)			Risk (%)
	Sep 2024	Change	Dec 2024	
Inflation	2.25	0.10	2.35	1.75
Cash Equivalents	3.40	0.20	3.60	0.75
Treasuries	4.05	0.65	4.70	5.00
Core Bonds	4.60	0.60	5.20	4.75
LT Core Bonds	4.65	0.65	5.30	9.90
High Yield Bonds	5.95	0.40	6.35	10.00
Private Credit	7.45	0.30	7.75	12.75
Global RE Securities	5.25	0.45	5.70	16.55
Private Real Estate	6.10	0.30	6.40	13.95
U.S. Stocks	4.25	0.10	4.35	17.00
Dev. ex-U.S. Stocks	5.25	0.10	5.35	18.00
Emerging Market Stocks	5.50	0.10	5.60	26.00
Private Equity	6.15	0.10	6.25	29.65
Global 60/40 (ACWI/U.S. Core)	4.95	0.25	5.20	10.75

Implied Risk Premia	Relative Return (%)		
	Sep 2024	Change	Dec 2024
Cash - Inflation	1.15	0.10	1.25
Treasury - Cash	0.65	0.45	1.10
Core - Treasury	0.55	-0.05	0.50
Long-Term Core - Core	0.05	0.05	0.10
High Yield - Core	1.35	-0.20	1.15
Global RESI - Core	0.65	-0.15	0.50
U.S. Stocks - Core	-0.35	-0.50	-0.85
Private Equity - U.S. Stocks	1.90	0.00	1.90
Implied Real Return (ACA - CPI)			
U.S. Stocks	2.00	0.00	2.00
U.S. Bonds	2.35	0.50	2.85
Cash Equivalents	1.15	0.10	1.25

“Nobody told me there’d be days like these”¹ (Stock Returns by Decade)
 “Everybody’s flying and never touch the sky”¹

US Stock Cumulative Returns

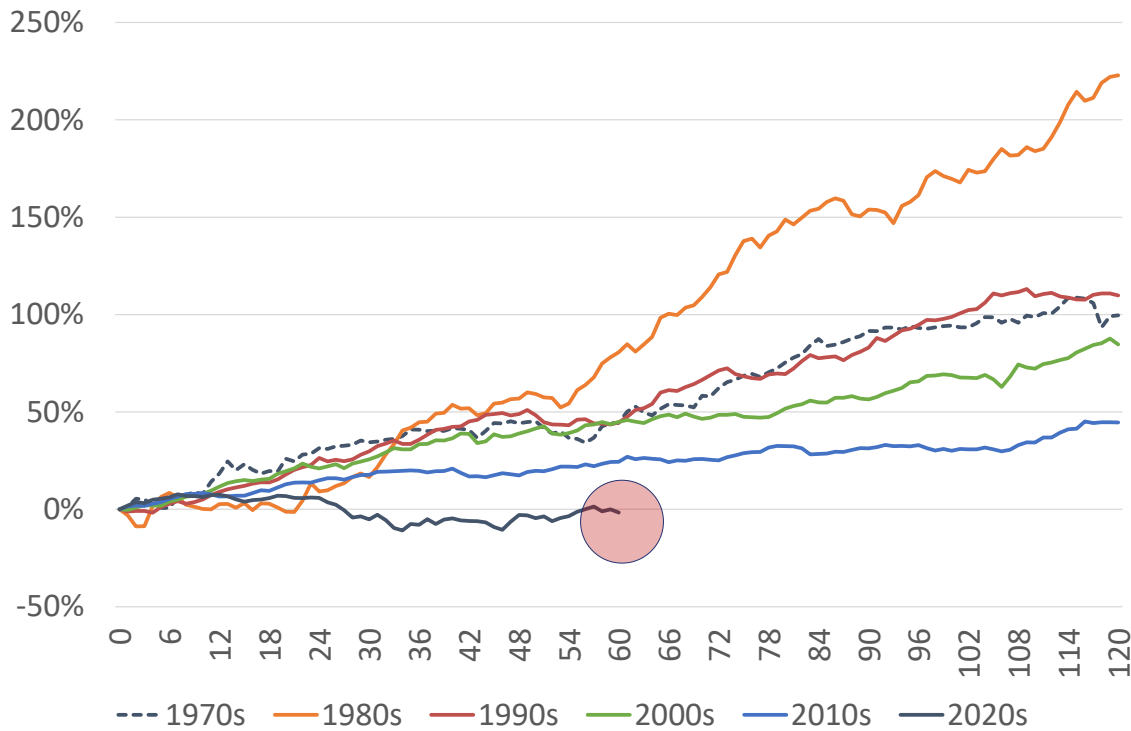


Data Source: Wilshire Compass, Bloomberg

¹ John Lennon, “Nobody Told Me,” *Milk and Honey*, 1984

“Nobody told me there’d be days like these”¹ (Bond Returns by Decade)
 “Well, everybody’s crying and no one makes a sound”¹

US Bond Cumulative Returns

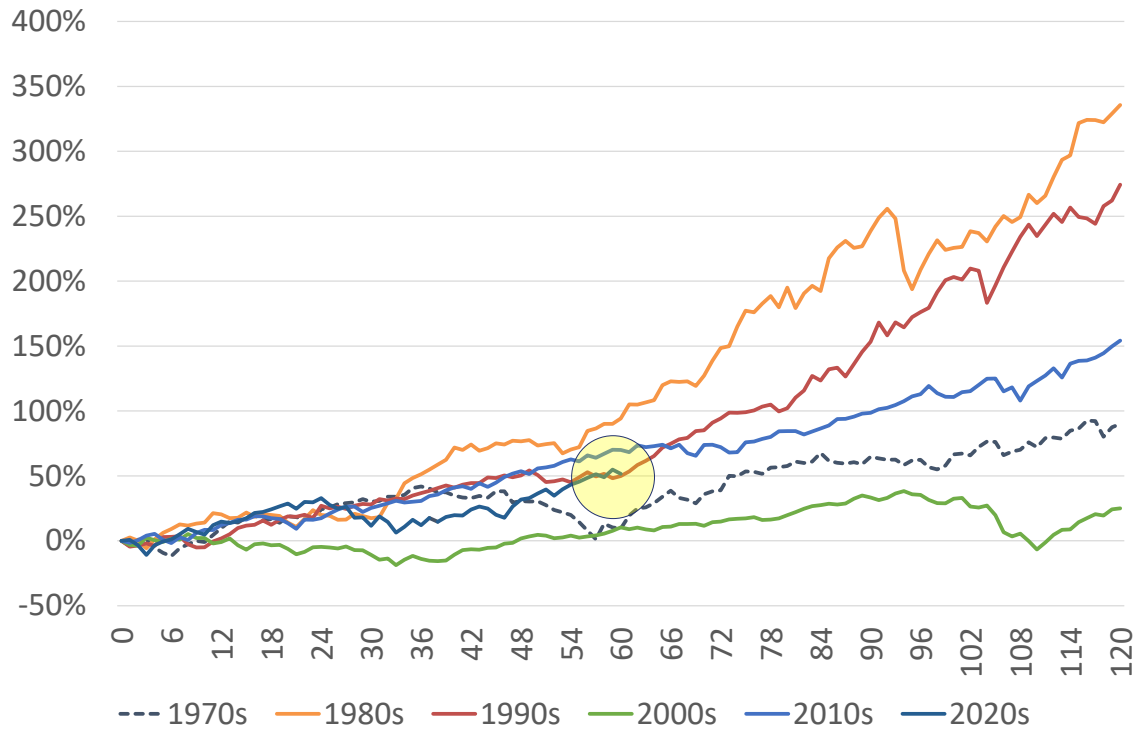


Data Source: Wilshire Compass, Bloomberg

¹ John Lennon, “Nobody Told Me,” *Milk and Honey*, 1984

“Nobody told me there’d be days like these”¹ (60/40 Returns by Decade)
 “Always something happening and nothing going on”¹

60/40 Blended Cumulative Returns

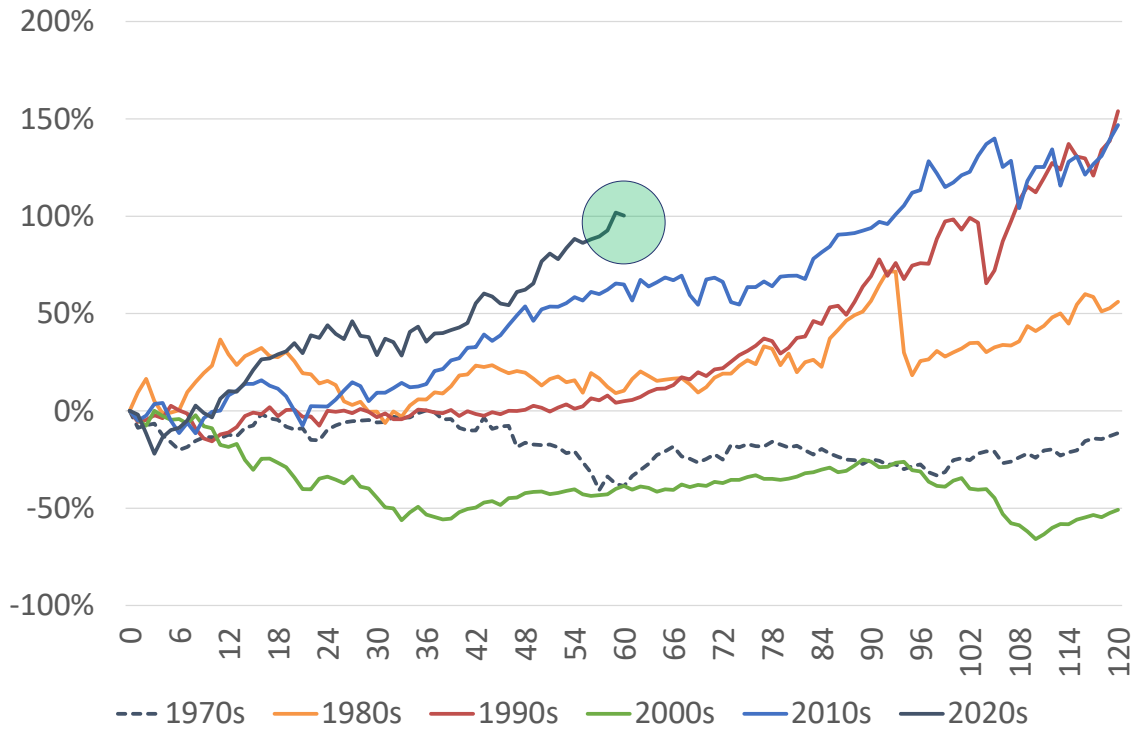


Data Source: Wilshire Compass, Bloomberg

¹ John Lennon, “Nobody Told Me,” *Milk and Honey*, 1984

“Nobody told me there’d be days like these”¹ (Stock > Bond Returns by Decade)
 “Strange days indeed... Most peculiar, mama”¹

ERP Cumulative Returns



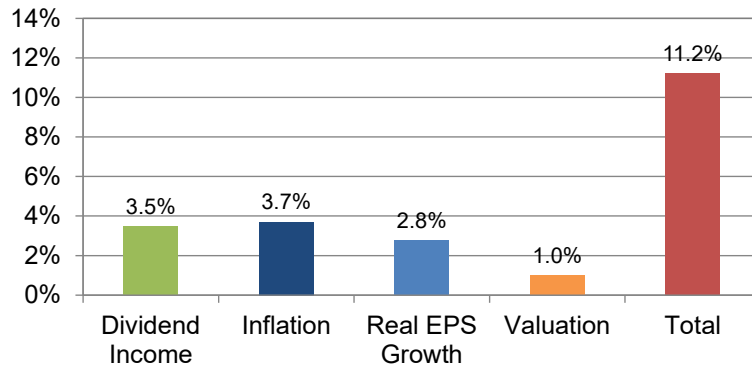
Data Source: Wilshire Compass, Bloomberg

¹ John Lennon, “Nobody Told Me,” *Milk and Honey*, 1984

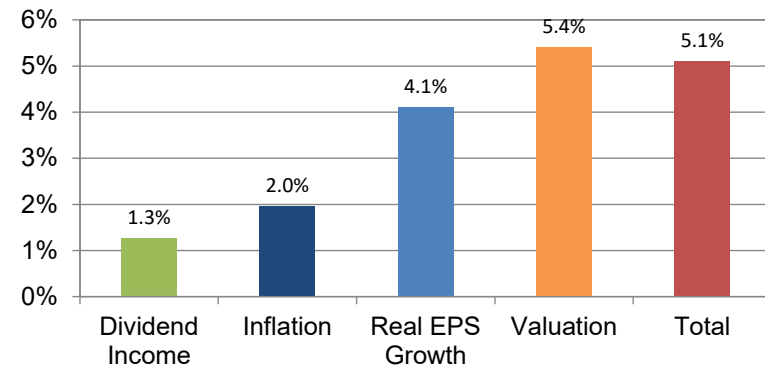
Contributions to Avg. Return, Risk Levels & Contributions to Risk

Historical data from 1951 through 2024

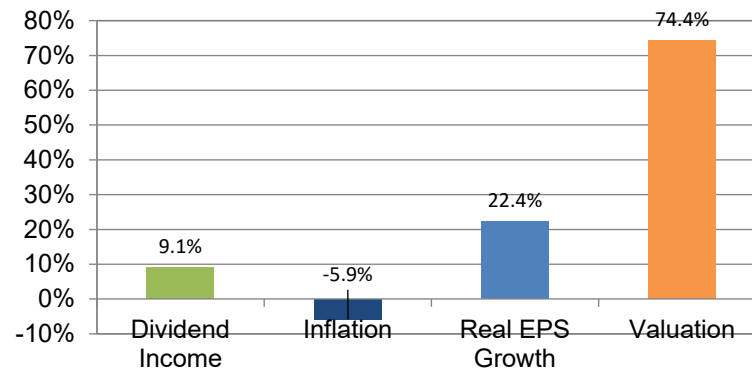
Avg. Return Contributions



St Dev of Return Contributions



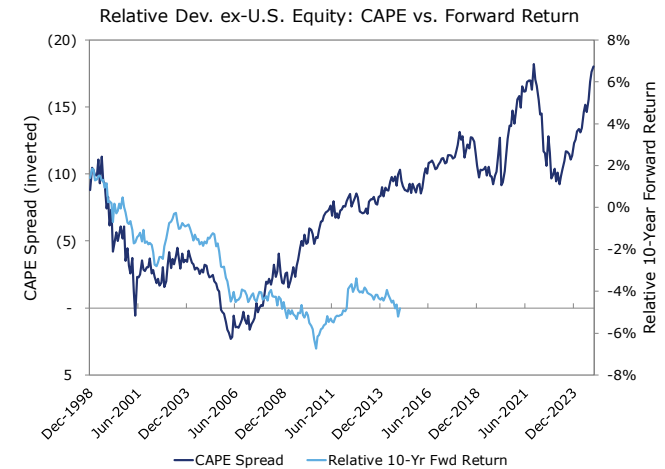
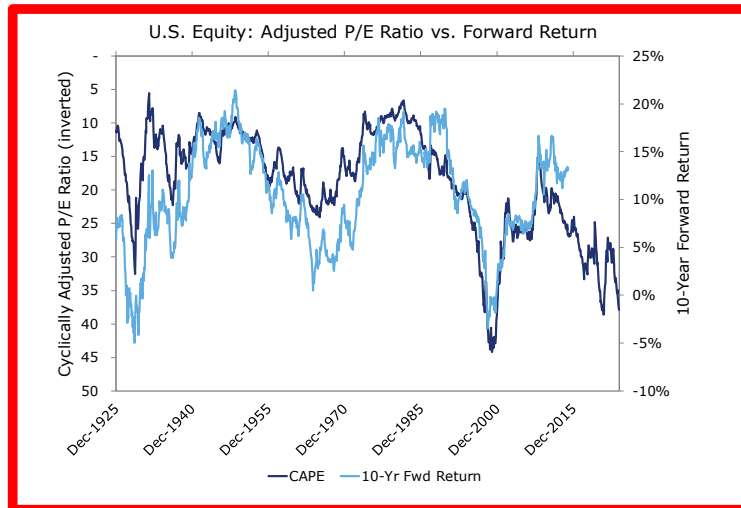
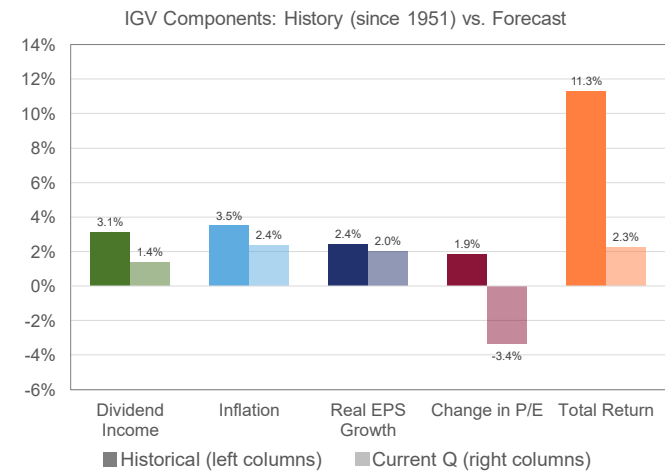
% Contribution to Risk



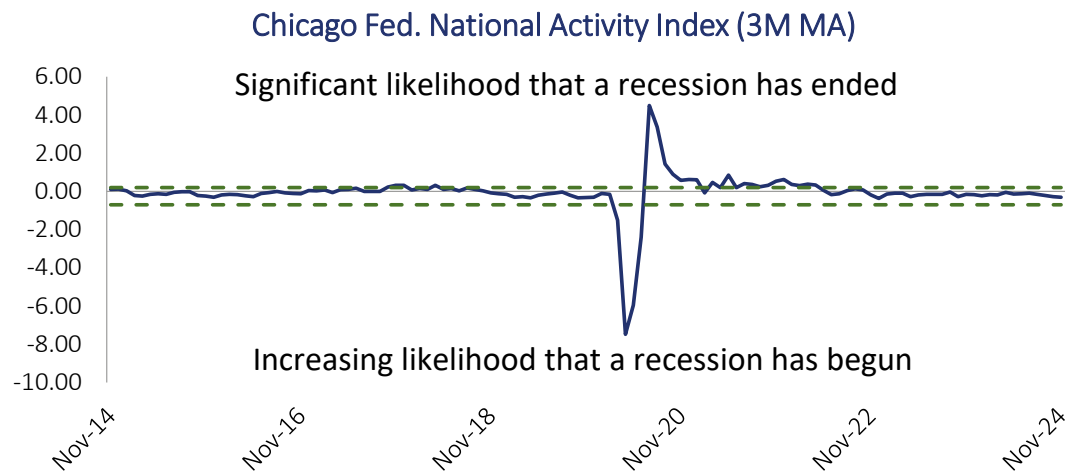
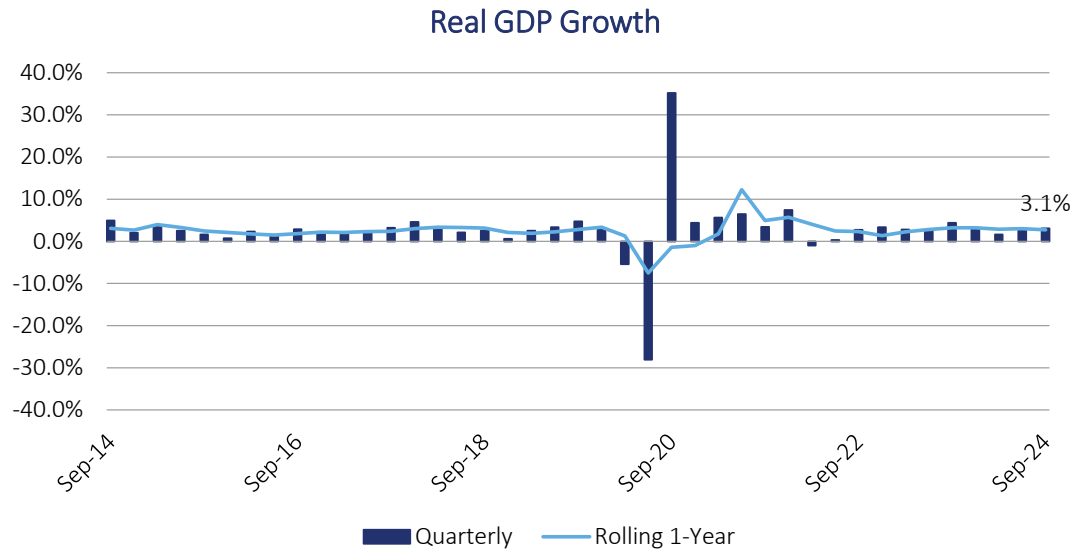
Data Source: S&P

Equity Markets

Equity: Public & Private		Sep 2024	Change	Dec 2024
Equity	DDM	6.40	0.15	6.55
	IGV	2.20	0.10	2.30
	CAPE	2.35	(1.25)	1.10
U.S. Equity Forecast		4.25	0.10	4.35
Dev-ex-US Equity Forecast		5.25	0.10	5.35
EM Equity Forecast		5.50	0.10	5.60
Private	Cost of Debt (Public)	5.35	0.50	5.85
	Cost of Debt (Private)	7.35	0.20	7.55
Private Market Basket Forecast		6.15	0.10	6.25



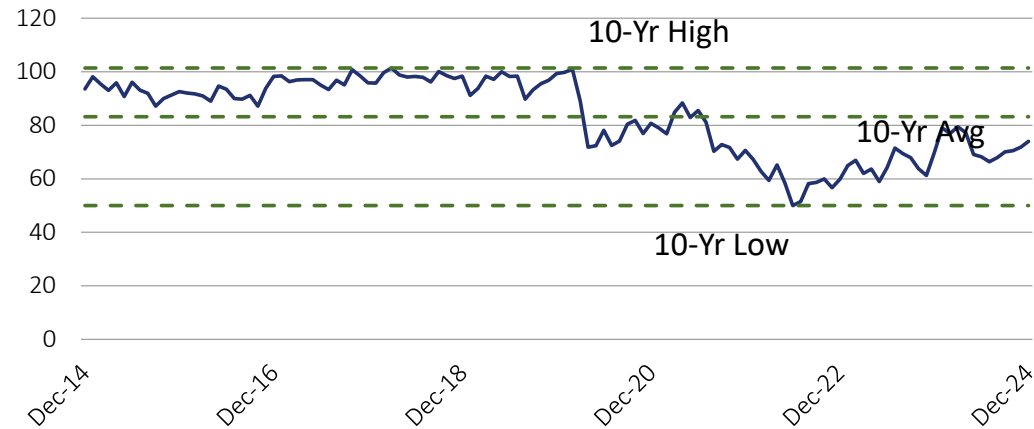
Economic Growth



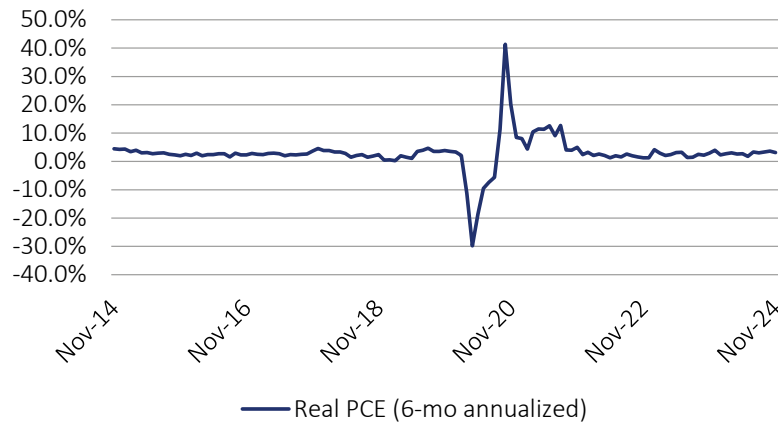
Data Source: Bloomberg

Consumer Activity

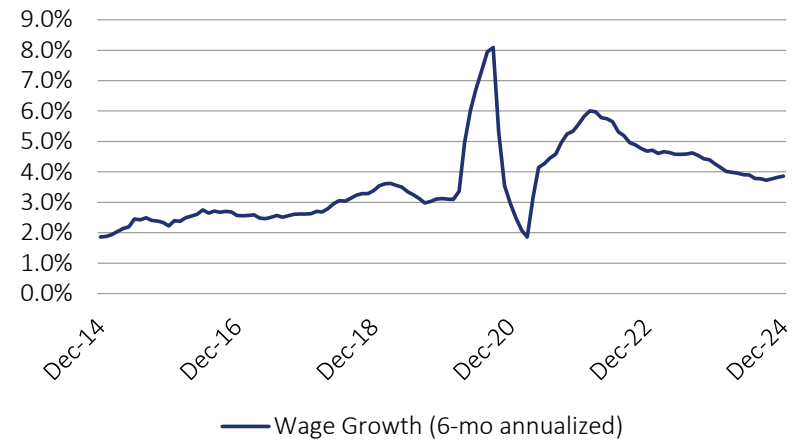
University of Michigan: Consumer Sentiment



Real Personal Consumption Expenditures

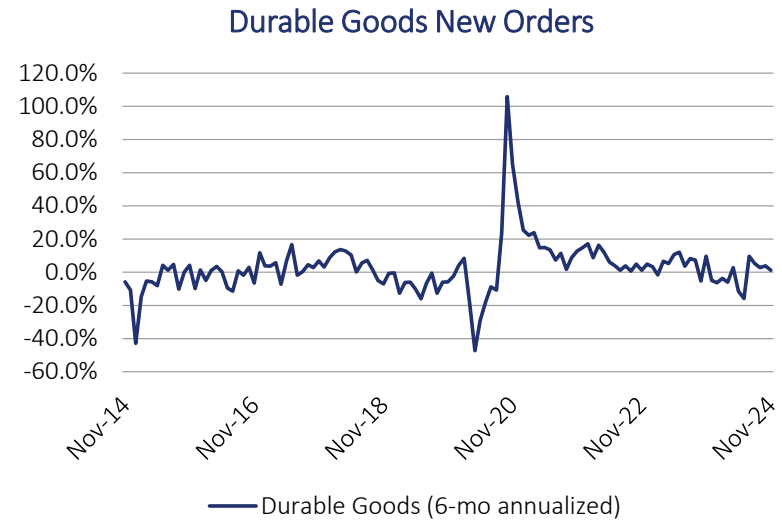
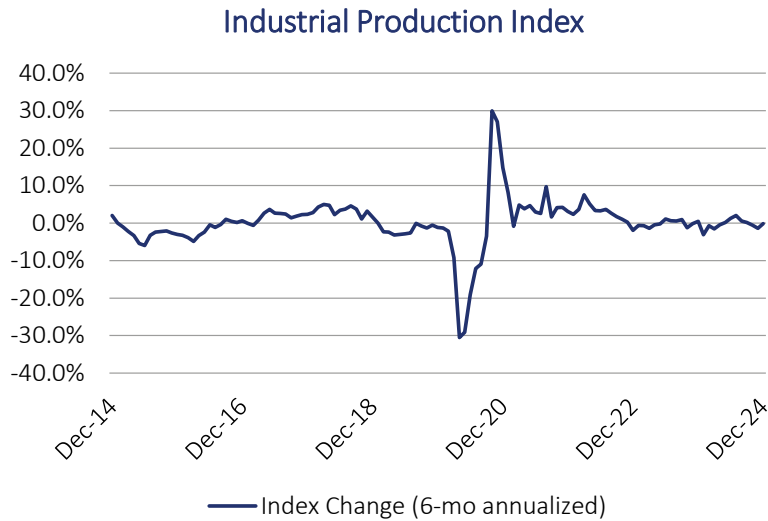
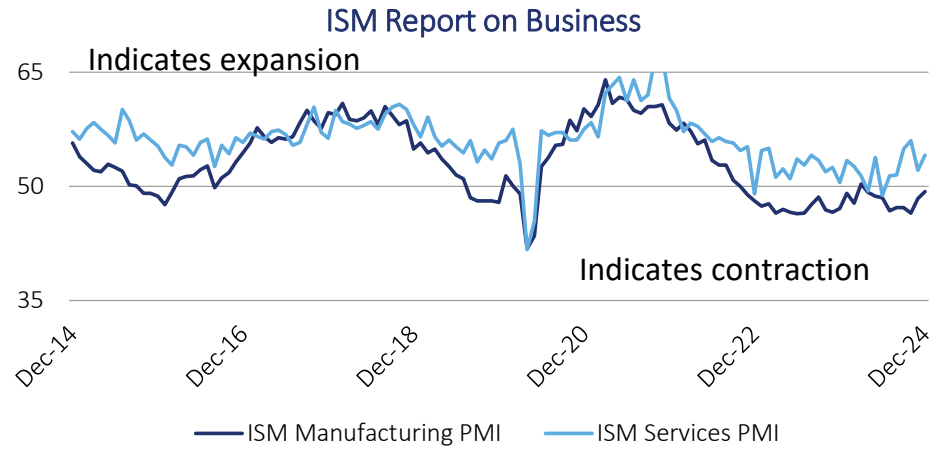


Average Hourly Earnings



Data Source: Bloomberg

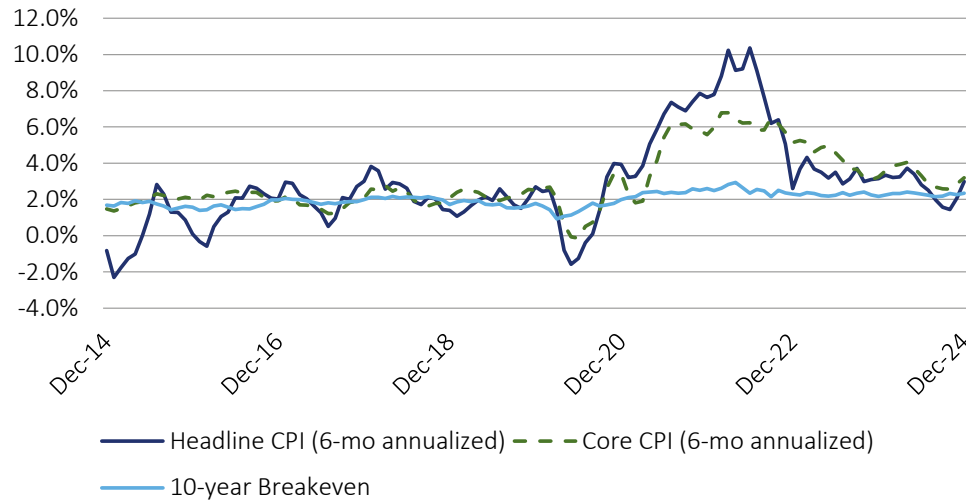
Business Activity



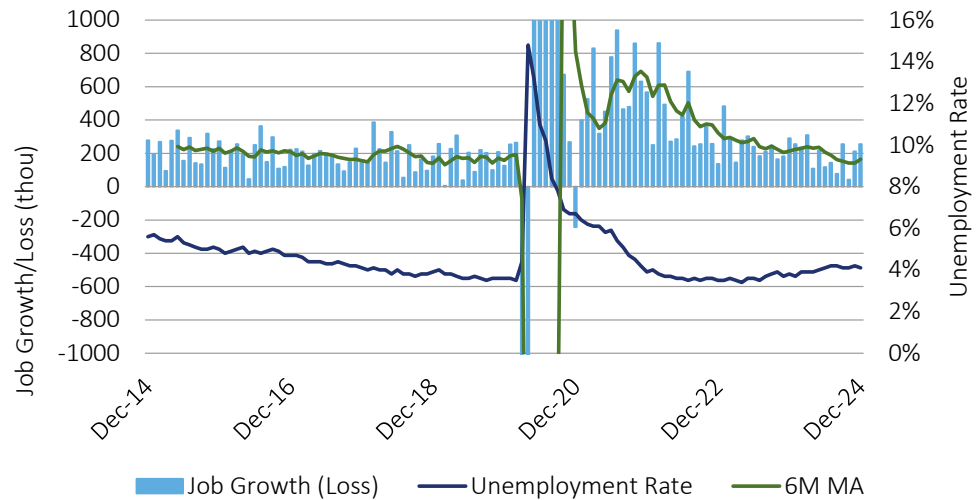
Data Source: Bloomberg

Inflation and Employment

Inflation: Actual & Expected



Employment Gains/Losses

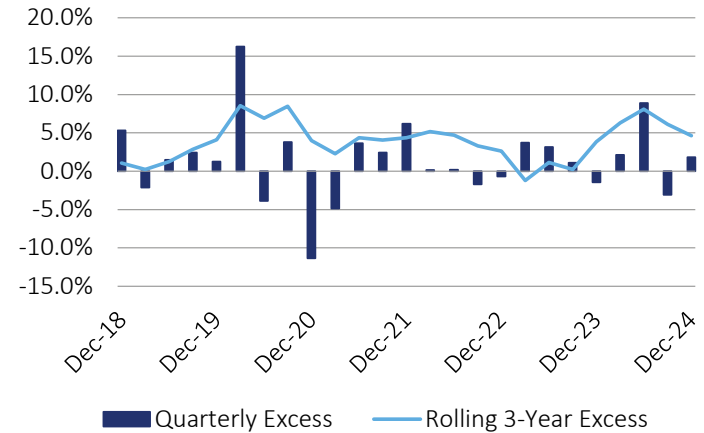


Data Source: Bloomberg

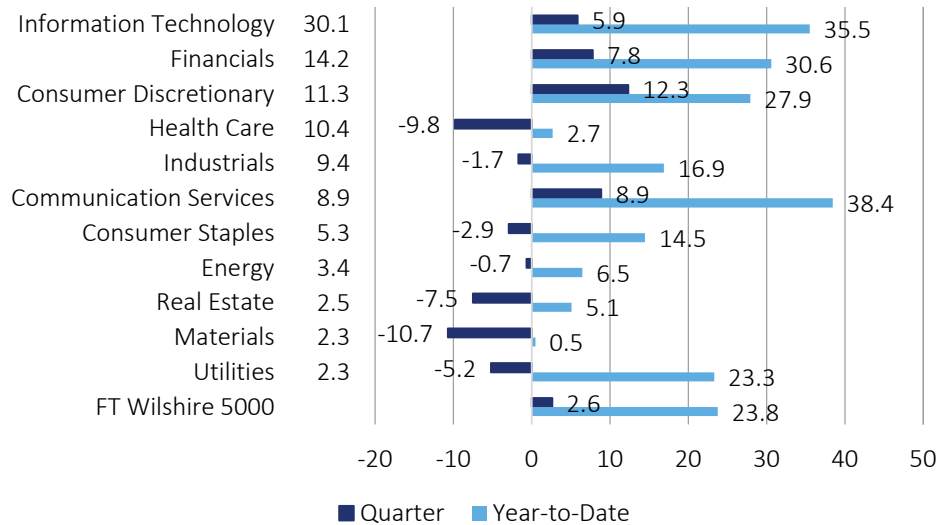
U.S. Equity Market

As of 12/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	2.6	23.8	23.8	8.1	14.1	12.7
FT Wilshire U.S. Large Cap	2.8	25.2	25.2	8.8	14.8	13.1
FT Wilshire U.S. Small Cap	1.0	14.1	14.1	4.0	9.5	9.2
FT Wilshire U.S. Large Growth	7.2	35.5	35.5	10.9	19.4	n/a
FT Wilshire U.S. Large Value	-1.7	15.2	15.2	6.4	9.8	n/a
FT Wilshire U.S. Small Growth	2.4	15.5	15.5	2.2	8.8	n/a
FT Wilshire U.S. Small Value	-0.4	12.7	12.7	5.6	9.9	n/a
Wilshire REIT Index	-5.0	9.1	9.1	-2.5	4.5	5.7
MSCI USA Min. Vol. Index	-2.3	16.0	16.0	5.0	8.2	10.4
FTSE RAFI U.S. 1000 Index	-0.3	17.1	17.1	8.0	12.3	10.9

Large Cap vs. Small Cap

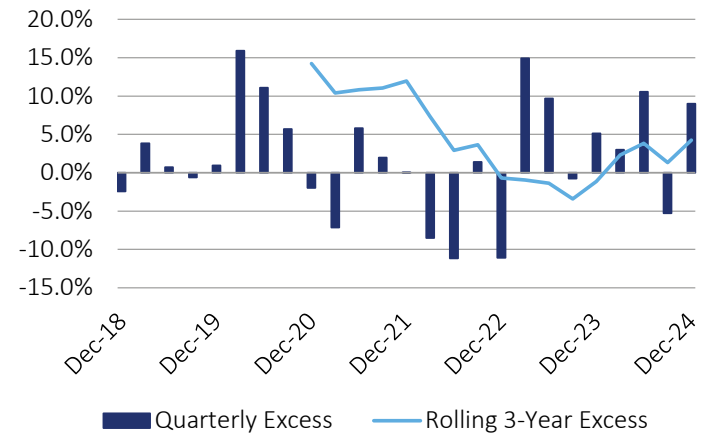


U.S. Sector Weight and Return (%)



Data Sources: Bloomberg, Wilshire Atlas

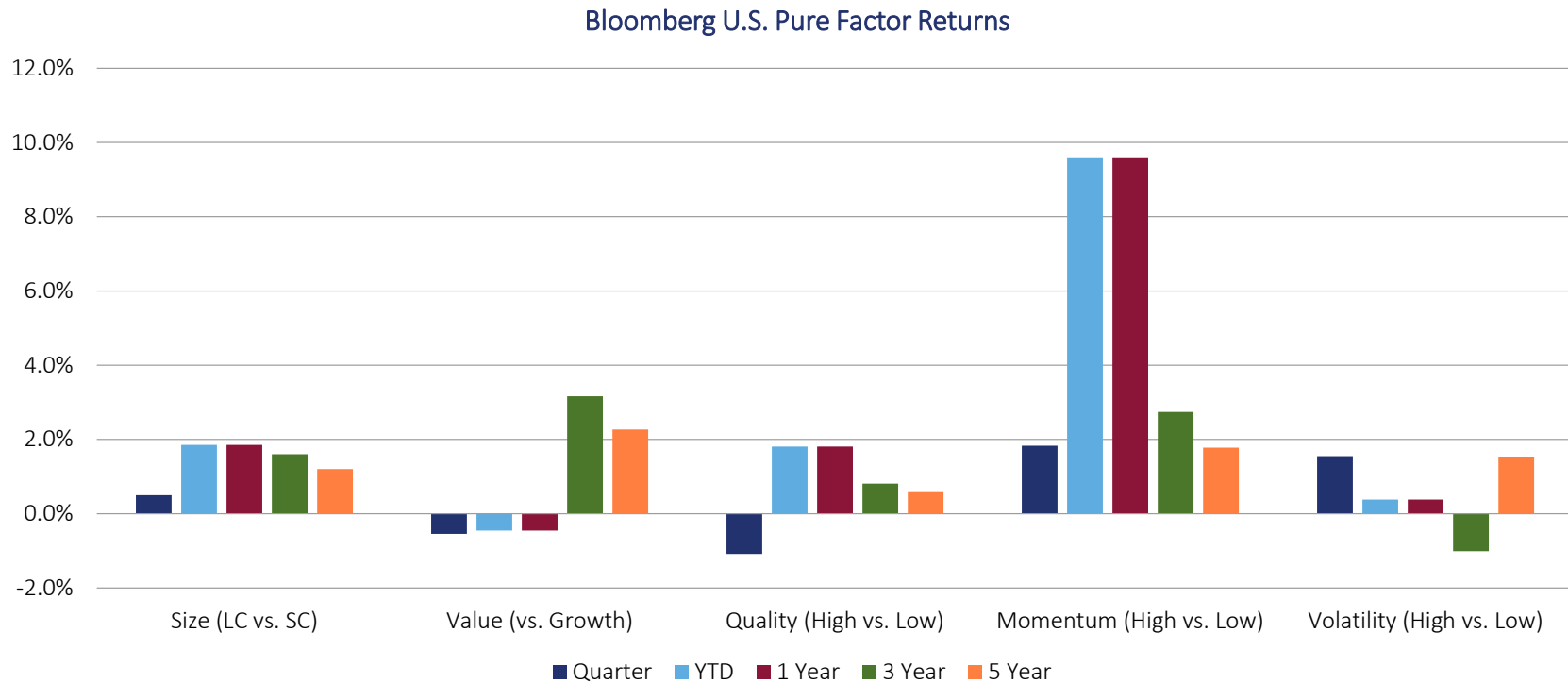
Large Growth vs Large Value



U.S. Factor Returns

Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg's Portfolio & Risk Analytics module

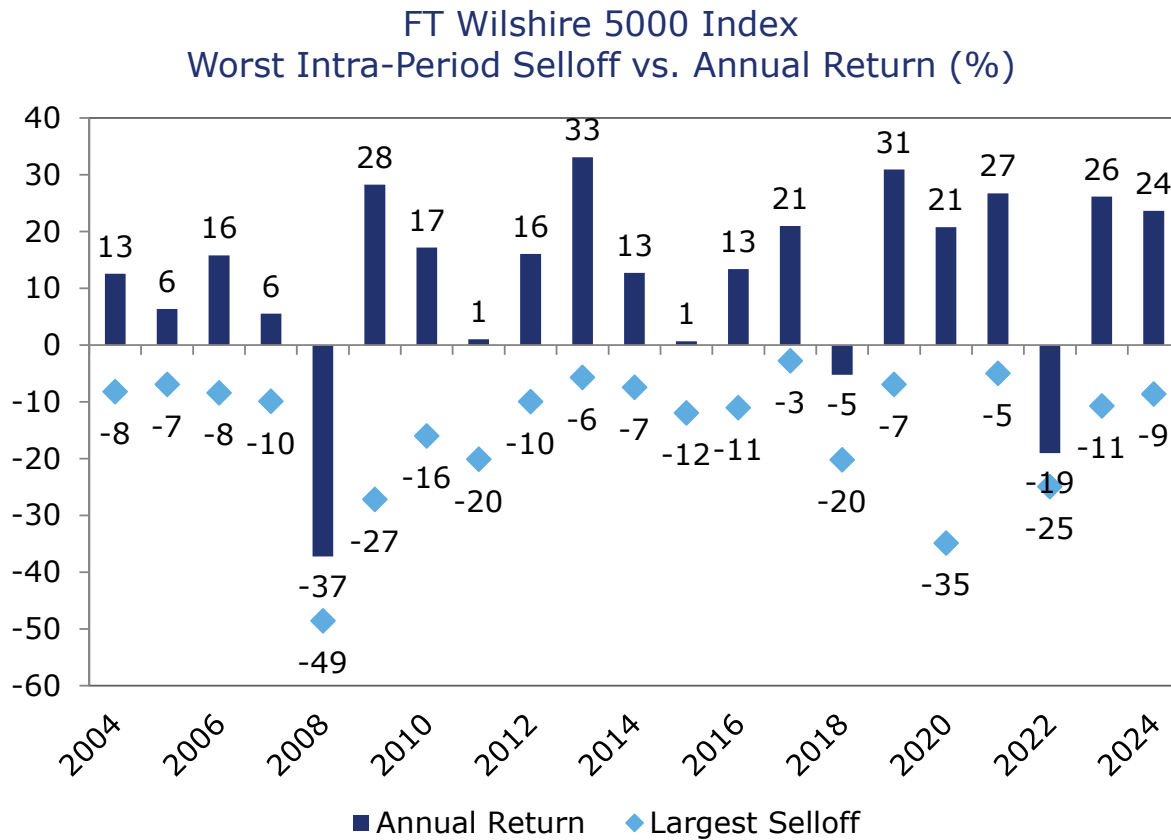
Value detracted from returns for the year while momentum was a meaningful contributor



Data Source: Bloomberg

Annual Equity Market Selloffs

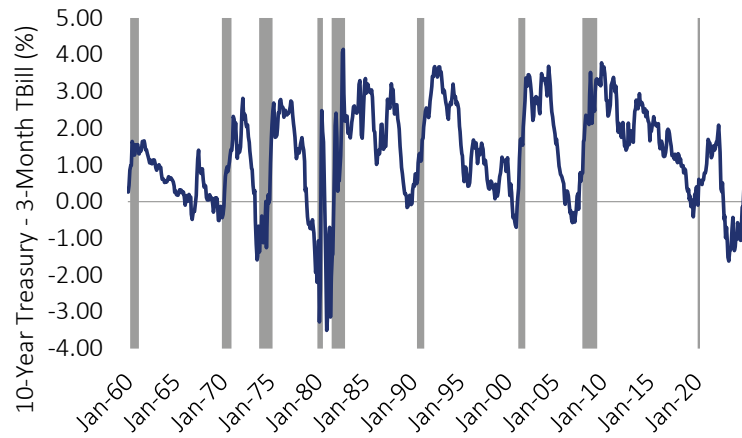
U.S. equity during 2024 was similar to 2023 – a roughly 25% gain with a modest sell-off during the year



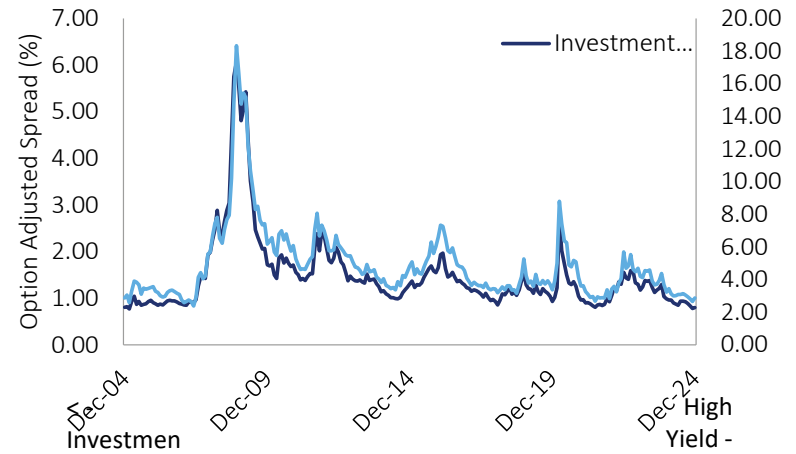
Data Sources: Wilshire Web, Bloomberg

Risk Monitor

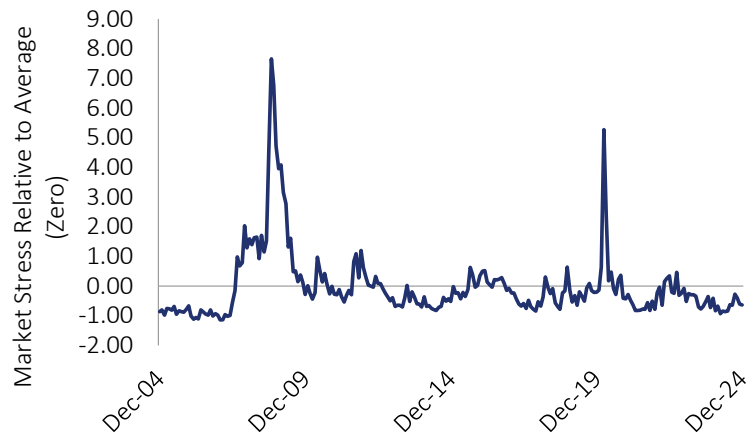
Yield Curve Slope vs Recessions (IN GRAY)



Bloomberg Credit Indexes

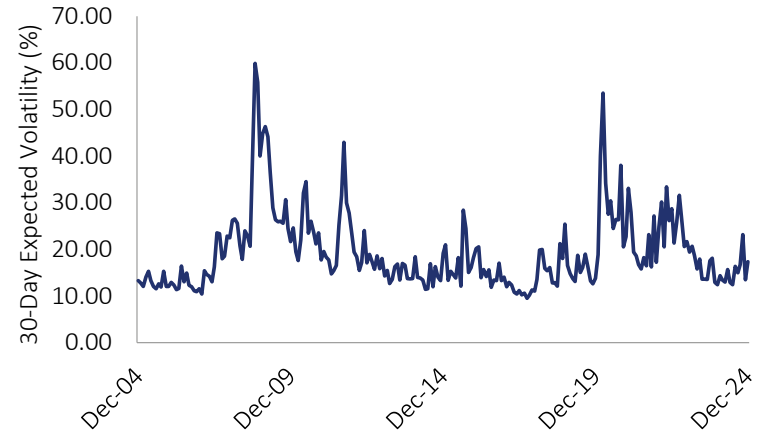


St. Louis Fed. Financial Stress Index



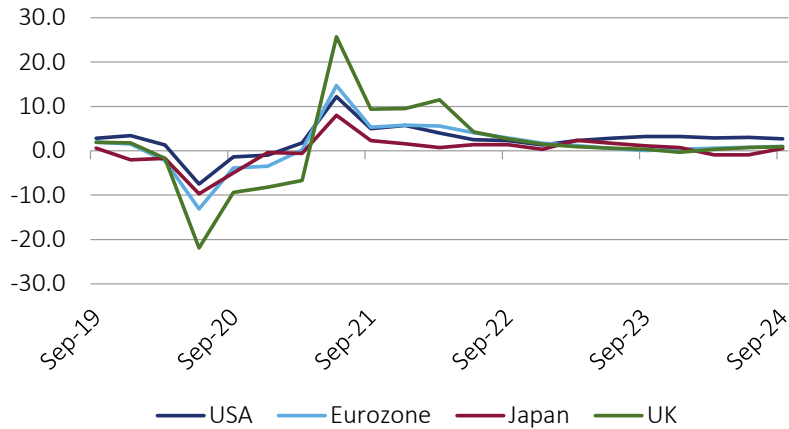
Data Source: Bloomberg

CBOE Volatility Index

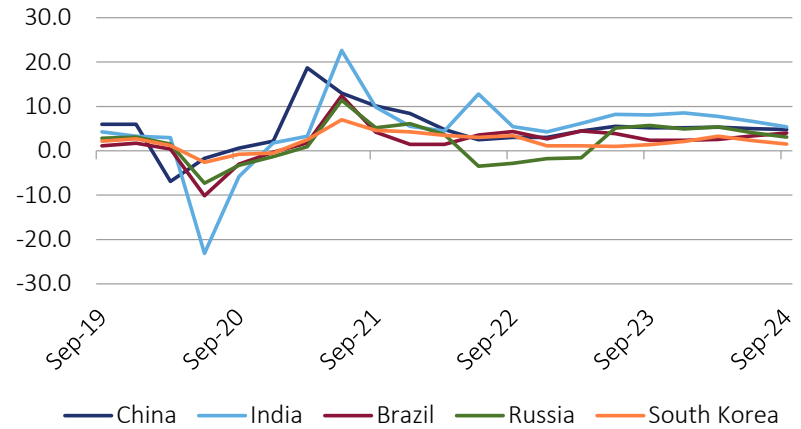


Non-U.S. Growth and Inflation

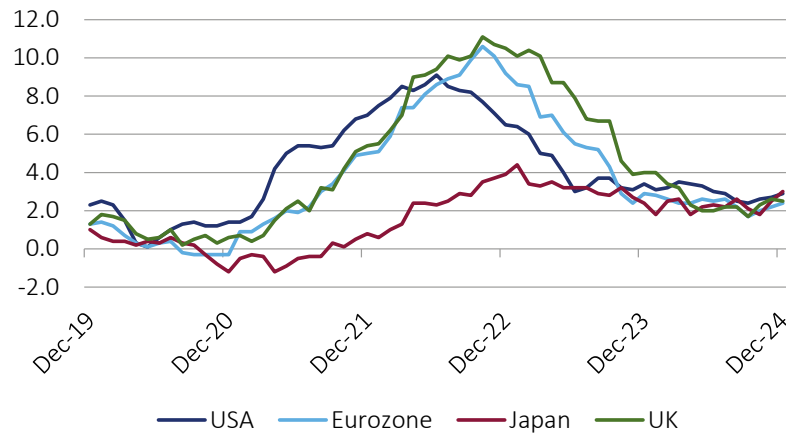
Developed Markets Real GDP Growth YoY (%)



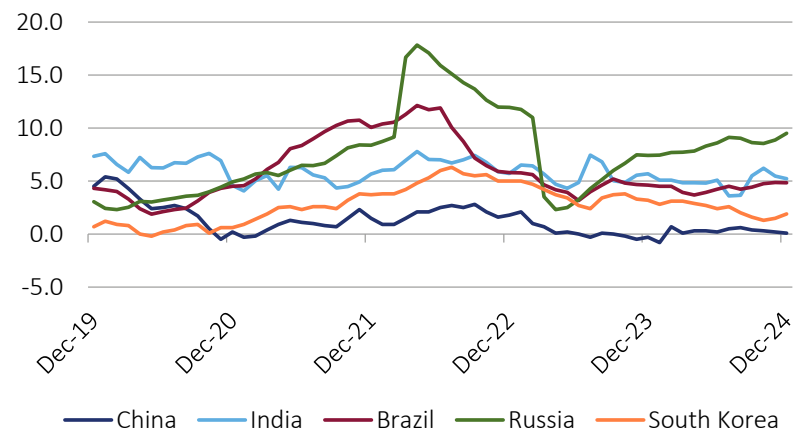
Emerging Markets Real GDP Growth YoY (%)



Developed Markets CPI Growth YoY (%)



Emerging Markets CPI Growth YoY (%)

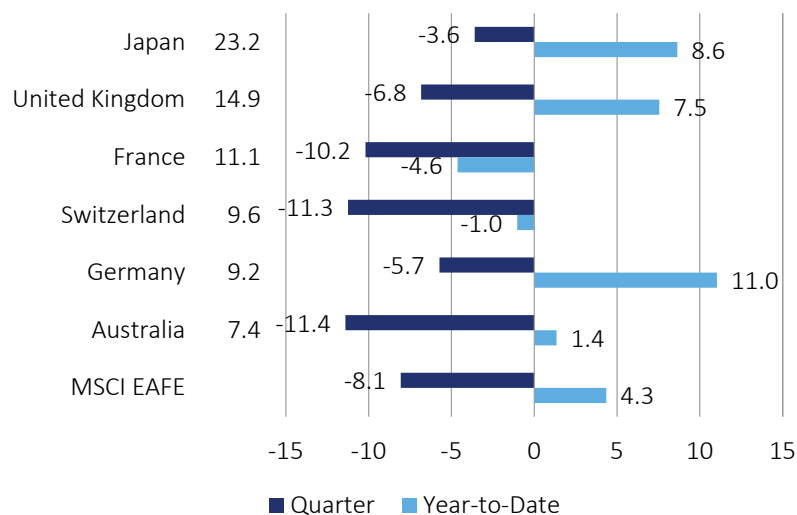


Data Source: Bloomberg

Non-U.S. Equity Market

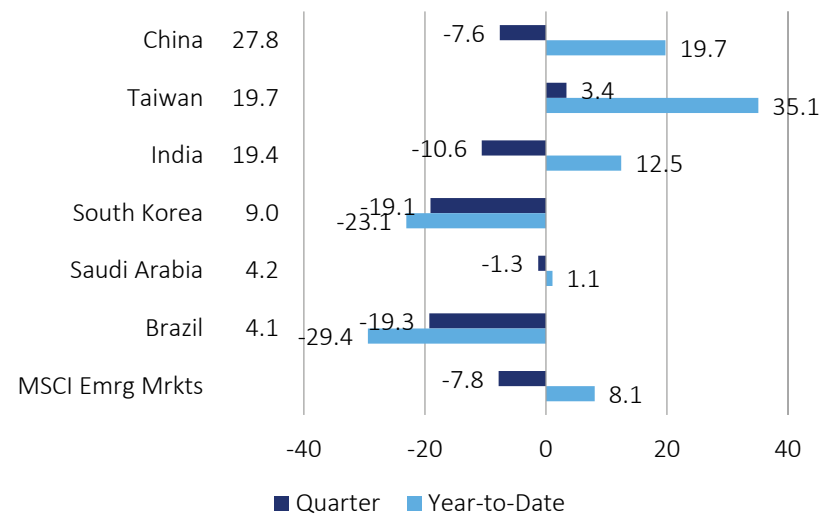
As of 12/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	-7.5	6.1	6.1	1.3	4.6	5.3
MSCI EAFE (\$G)	-8.1	4.3	4.3	2.2	5.2	5.7
MSCI Emerging Markets (\$G)	-7.8	8.1	8.1	-1.5	2.1	4.0
MSCI Frontier Markets (\$G)	-5.0	6.8	6.8	-0.4	0.2	0.8
MSCI ACWI ex-US Growth (\$G)	-7.8	5.4	5.4	-2.4	3.7	5.7
MSCI ACWI ex-US Value (\$G)	-7.3	6.5	6.5	4.7	5.2	4.9
MSCI ACWI ex-US Small (\$G)	-7.6	3.9	3.9	-1.0	4.8	6.1
MSCI ACWI Minimum Volatility	-3.4	12.0	12.0	3.1	5.3	7.6
MSCI EAFE Minimum Volatility	-6.8	6.0	6.0	0.6	2.0	4.8
FTSE RAFI Developed ex-US	-7.3	4.6	4.6	4.3	6.2	5.5
MSCI EAFE LC (G)	-0.6	11.8	11.8	6.9	8.1	7.7
MSCI Emerging Markets LC (G)	-4.2	13.7	13.7	2.1	4.9	6.4

Developed Markets Weight and Return (%)



Data Source: Bloomberg

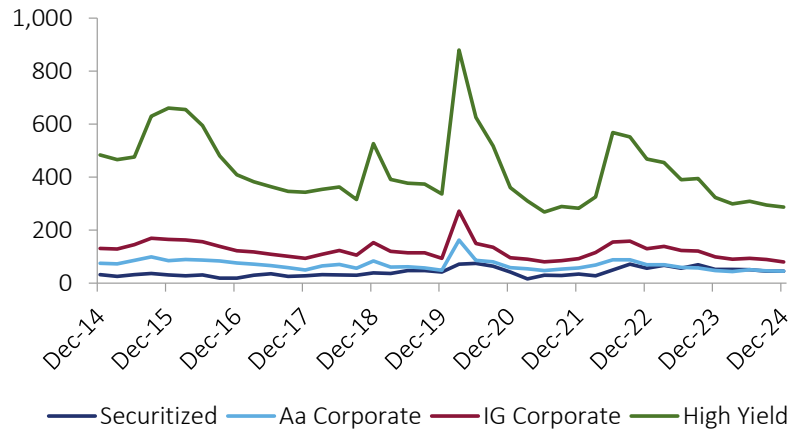
Emerging Markets Weight and Return (%)



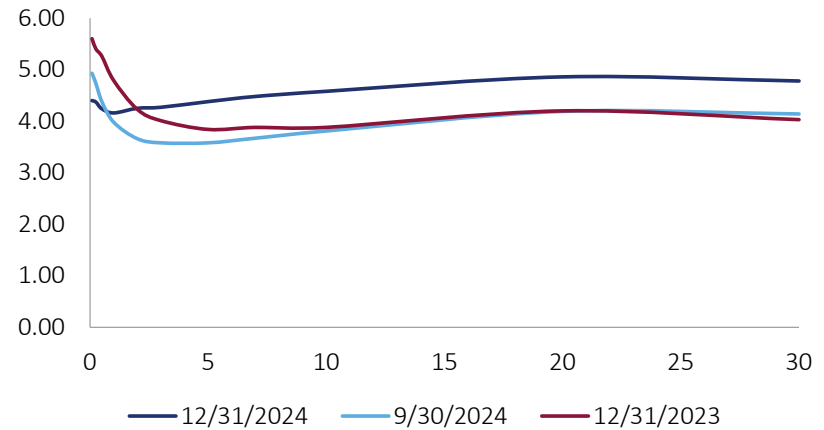
U.S. Fixed Income

As of 12/31/2024	YTW	Dur.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.9	6.1	-3.1	1.3	1.3	-2.4	-0.3	1.3
Bloomberg Treasury	4.5	5.8	-3.1	0.6	0.6	-2.9	-0.7	0.8
Bloomberg Gov't-Rel.	4.9	5.2	-2.7	1.7	1.7	-1.5	0.0	1.5
Bloomberg Securitized	5.3	6.0	-3.0	1.5	1.5	-2.0	-0.6	1.0
Bloomberg Corporate	5.3	6.8	-3.0	2.1	2.1	-2.3	0.3	2.4
Bloomberg LT Gov't/Credit	5.3	13.6	-7.4	-4.2	-4.2	-9.2	-3.3	1.0
Bloomberg LT Treasury	4.9	14.7	-8.6	-6.4	-6.4	-12.0	-5.2	-0.6
Bloomberg LT Gov't-Rel.	5.9	11.4	-6.7	-2.5	-2.5	-6.4	-2.4	1.5
Bloomberg LT Corporate	5.8	12.5	-6.2	-1.9	-1.9	-6.8	-1.8	2.2
Bloomberg U.S. TIPS*	4.5	7.1	-2.9	1.8	1.8	-2.3	1.9	2.2
Bloomberg High Yield	7.5	3.1	0.2	8.2	8.2	2.9	4.2	5.2
S&P/LSTA Leveraged Loan	8.0	0.3	2.3	9.0	9.0	7.0	5.9	5.1
Treasury Bills	4.3	0.3	1.2	5.3	5.3	3.9	2.5	1.8

Fixed Income Option Adjusted Spread (bps)



Treasury Yield Curve (%)



*Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index.

Data Source: Bloomberg

Federal Reserve

The Federal Open Market Committee decreased their overnight rate by 0.50% during Q4 and 1% in six months

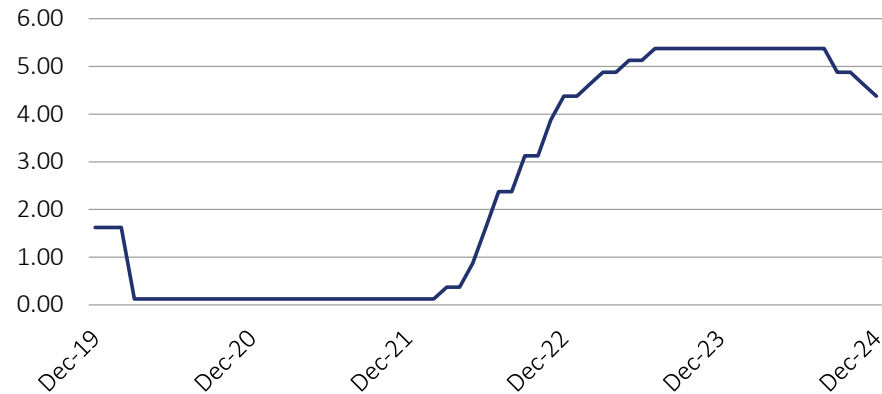
QE4 was larger than the 3 phases of quantitative easing – combined – following the global financial crisis

The Fed’s balance sheet is roughly equal to its level following the COVID spike

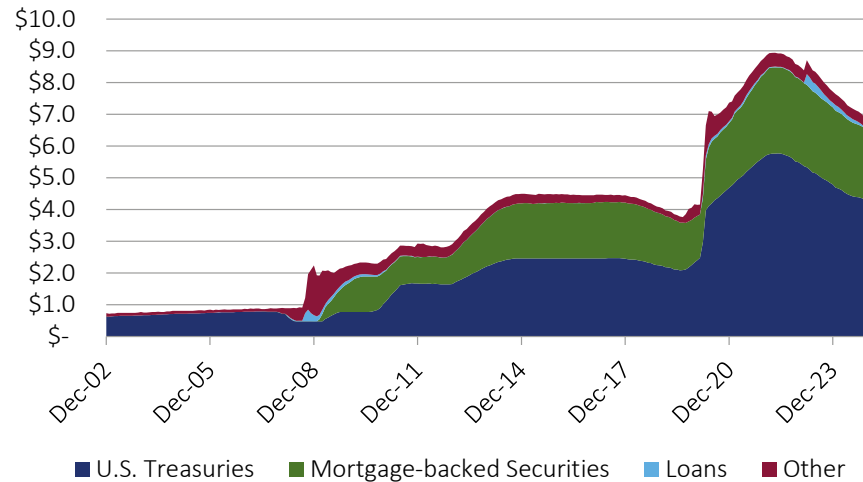
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779

Data Source: Bloomberg

Federal Funds Rate (Mid %)

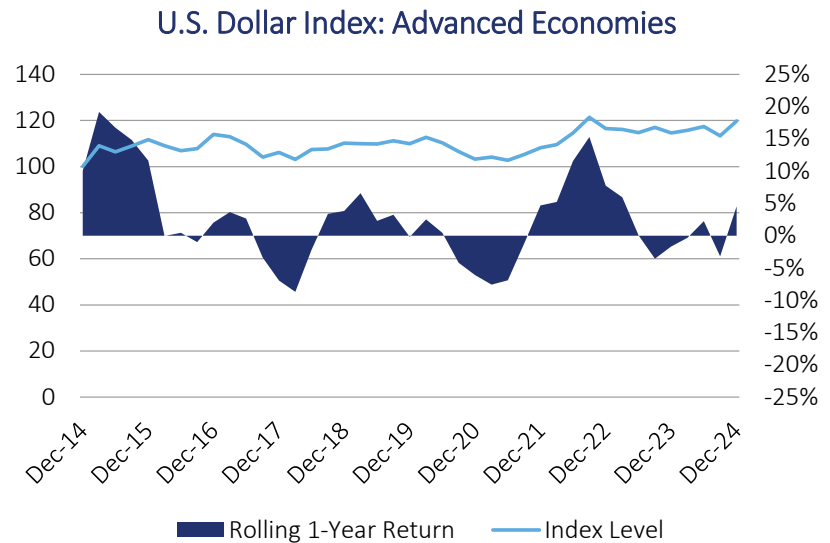
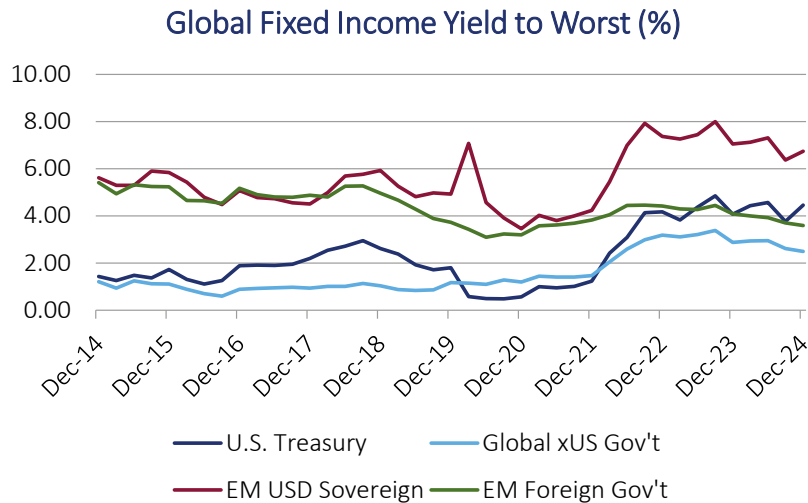


Federal Reserve Balance Sheet (\$T)



Non-U.S. Fixed Income

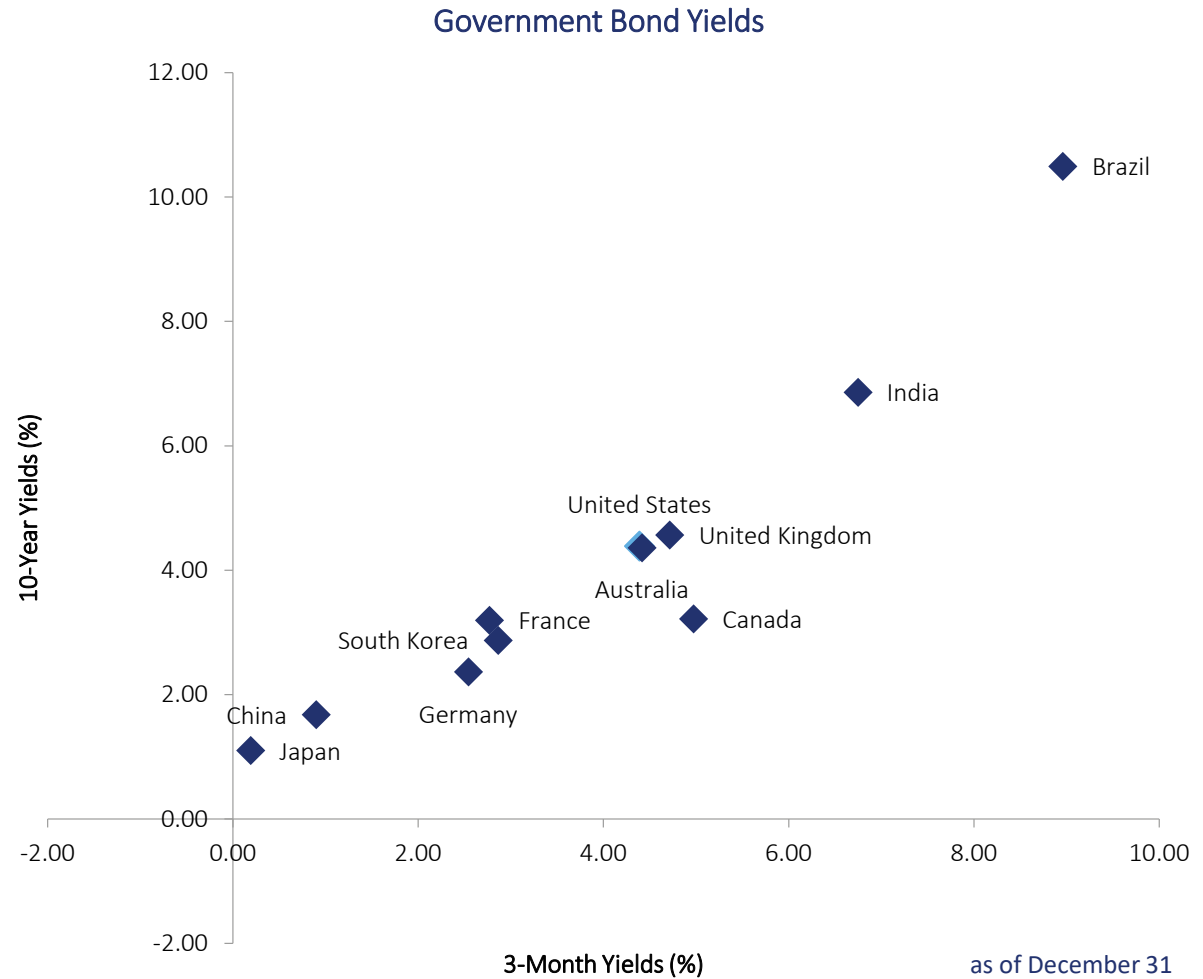
As of 12/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	-6.8	-4.2	-4.2	-6.3	-3.4	-0.9
Bloomberg Global Aggregate xUS*	0.7	5.0	5.0	0.9	1.0	2.4
Bloomberg Global Inflation Linked xUS	-9.9	-8.3	-8.3	-11.5	-4.6	-1.4
Bloomberg Global Inflation Linked xUS*	-2.6	-2.6	-2.6	-6.8	-1.6	1.8
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	-1.5	6.6	6.6	-0.5	0.6	3.2
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	-3.8	1.7	1.7	-0.2	0.6	1.7
Bloomberg EM Local Currency Gov't*	2.2	9.3	9.3	4.9	3.3	3.4
Euro vs. Dollar	-7.0	-6.2	-6.2	-3.1	-1.6	-1.5
Yen vs. Dollar	-8.6	-10.3	-10.3	-9.9	-7.1	-2.7
Pound vs. Dollar	-6.4	-1.7	-1.7	-2.6	-1.1	-2.2



*Returns are reported in terms of local market investors, which removes currency effects.
Data Source: Bloomberg

Global Interest Rates

Short-term rates have turned positive across the globe; longer-term rates above 4.0% in the U.S., U.K. and Australia

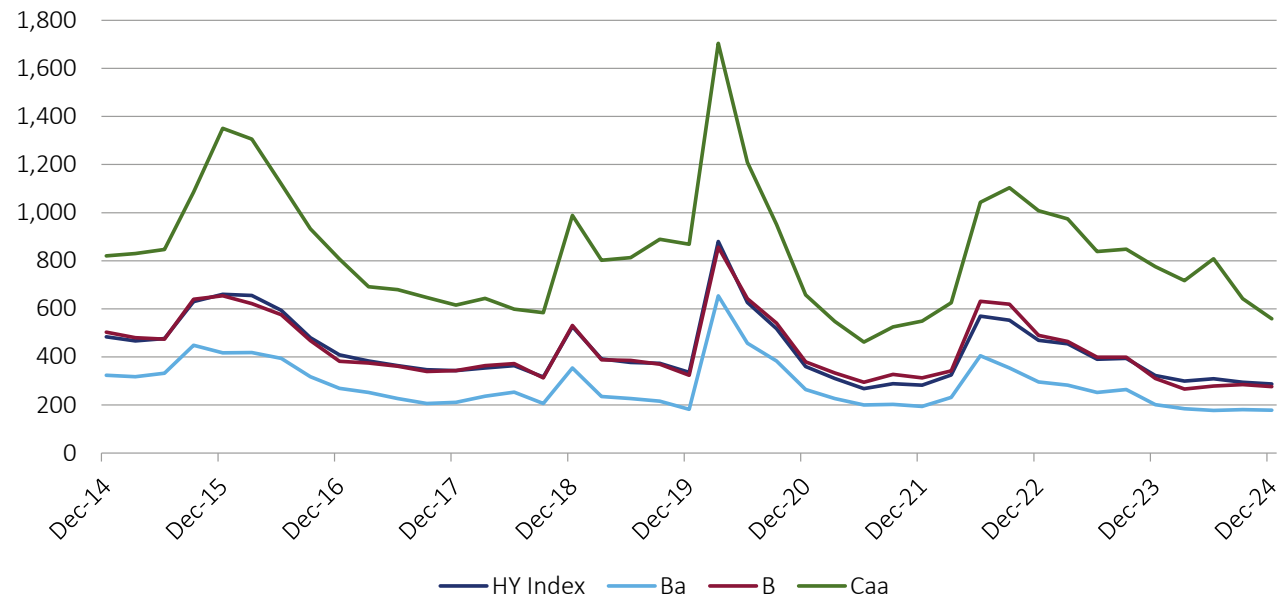


Data Source: Bloomberg

High Yield Bond Market

As of 12/31/2024	Weight	YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		7.5	0.2	8.2	8.2	2.9	4.2	5.2
S&P LSTA Leveraged Loan		8.0	2.5	8.7	8.7	6.9	5.4	4.8
High Yield Quality Distribution								
Ba U.S. High Yield	50.8%	6.4	-0.5	6.3	6.3	1.9	4.1	5.1
B U.S. High Yield	35.2%	7.4	0.3	7.4	7.4	3.1	3.8	4.8
Caa U.S. High Yield	12.1%	10.2	2.3	15.1	15.1	4.9	5.1	5.6
Ca to D U.S. High Yield	2.0%	20.2	2.2	48.3	48.3	15.6	12.3	4.9

Fixed Income Option Adjusted Spread (bps)



Data Source: Bloomberg

Asset Class Performance

Asset Class Returns - Best to Worst						Annualized 5-Year as of 12/24
2019	2020	2021	2022	2023	2024 YTD	
U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 16.1%	U.S. Equity 26.1%	U.S. Equity 23.8%	U.S. Equity 14.1%
REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 1.3%	Developed 18.9%	REITs 9.1%	Commodities 6.8%
Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	High Yield -11.2%	REITs 16.1%	High Yield 8.2%	Developed 5.2%
Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	U.S. TIPS -11.8%	High Yield 13.4%	Emrg Mrkts 8.1%	REITs 4.5%
High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	Core Bond -13.0%	Emrg Mrkts 10.3%	Commodities 5.4%	High Yield 4.2%
Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Developed -14.0%	Core Bond 5.5%	T-Bills 5.3%	T-Bills 2.5%
U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. Equity -19.0%	T-Bills 5.1%	Developed 4.3%	Emrg Mrkts 2.1%
Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -19.7%	U.S. TIPS 3.9%	U.S. TIPS 1.8%	U.S. TIPS 1.9%
T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -26.8%	Commodities -1.3%	Core Bond 1.3%	Core Bond -0.3%

Data Sources: Bloomberg

Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

Kentucky Retirement Systems

Performance and Asset Allocations

Quarter Ending: December 31, 2024


Pension Portfolios Performance

KERS, KERS-HAZ, & SPRS - PENSION FUND - PLAN NET RETURNS - 12/31/24											
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
KERS	4,563,848,403.73	-1.76	-0.88	4.30	9.08	3.85	6.71	6.59	6.23	7.83	8.71
KY Ret. KERS Plan IPS Index		-0.97	-0.34	4.10	9.59	3.91	6.34	6.48	6.23	7.80	8.77
KERS- H	1,072,630,641.59	-1.77	-0.51	4.65	10.49	4.64	7.47	7.32	6.57	8.06	8.88
KY Ret. KERS Haz Plan IPS Index		-0.88	0.27	4.75	11.94	4.92	7.68	7.28	6.64	8.08	8.97
SPRS	685,796,136.01	-1.82	-0.97	4.26	8.96	4.20	6.77	6.60	6.21	7.82	8.70
KY Ret. SPRS Plan IPS Index		-0.97	-0.34	4.10	9.59	3.91	6.34	6.43	6.21	7.79	8.76
KPPA PENSION FUND UNIT - NET RETURNS - 12/31/24 - PROXY PLAN ASSET PERFORMANCE											
Structure		Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
PUBLIC EQUITY		-3.09	-1.55	5.04	15.22	4.43	9.28	8.86	7.40	9.16	10.37
MSCI ACWI		-2.37	-0.99	5.56	17.49	5.41	9.71	9.00	7.37	9.02	10.28
PRIVATE EQUITY		0.88	1.02	3.23	4.07	3.83	11.58	11.61	10.26		11.33
Russell 3000 + 3%(Qtr Lag)		2.38	7.00	11.34	38.19	13.36	18.31	15.97	12.84		12.92
SPECIALTY CREDIT		1.01	2.23	5.39	11.06	7.30	7.12				6.86
50% BB US HY / 50% Morningstar LSTA Lev'd Ln		0.07	1.22	4.92	8.59	5.00	5.07				5.06
CORE FIXED INCOME		-1.62	-2.92	2.06	1.76	0.93	1.85	2.46			2.70
Bloomberg US Aggregate		-1.64	-3.06	1.98	1.25	-2.41	-0.33	1.35			1.72
CASH		0.39	1.20	2.55	5.33	3.82	2.41	1.92	1.98	2.76	3.39
FTSE Treasury Bill-3 Month		0.39	1.23	2.61	5.45	4.05	2.54	1.79	1.63	2.41	3.02
REAL ESTATE		-0.80	-0.89	0.81	-4.52	0.33	5.05	7.58	6.88	5.99	6.14
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^		0.02	0.02	-0.64	-8.04	-1.04	2.05	5.16	5.65	7.01	5.87
REAL RETURN		-2.81	3.73	10.67	18.90	12.20	9.90	6.79			6.11
US CPI +3%		0.19	0.95	1.94	5.75	6.61	6.58	4.63			4.28

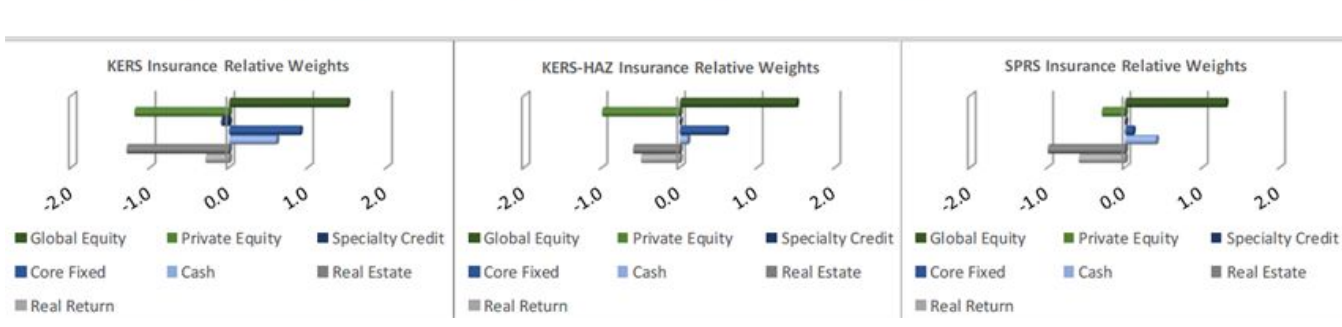
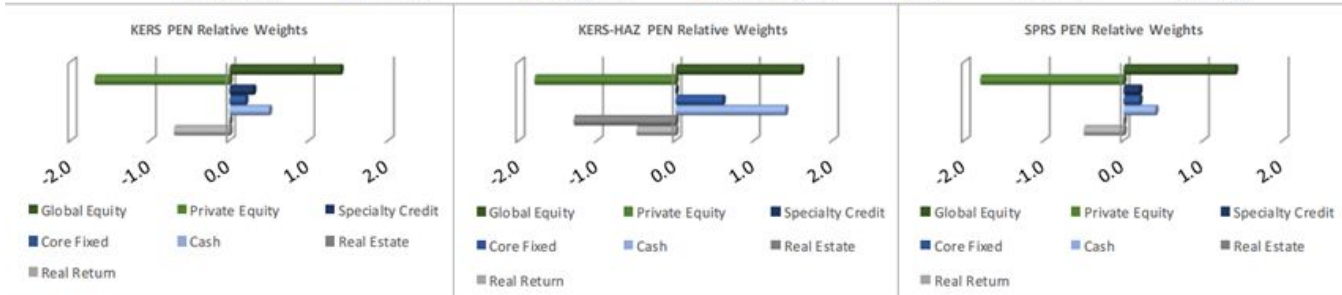
Insurance Portfolios Performance

KERS INS, KERS-HAZ INS, SPRS INS - INSURANCE FUND - PLAN NET RETURNS - 12/31/24											
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
KERS INS	1,741,265,302.36	-1.79	-0.62	4.76	10.70	4.85	7.56	7.15	6.16	7.17	7.39
KY Ins. KERS Plan IPS Index		-0.88	0.27	4.75	11.94	4.94	7.63	7.25	6.42	7.58	7.73
KERS - H INS	688,366,546.75	-1.48	-0.34	4.40	10.36	4.86	7.53	7.36	6.31	7.27	7.47
KY Ins. KERS Haz Plan IPS Index		-0.88	0.27	4.75	11.94	4.94	7.52	7.24	6.41	7.57	7.73
SPRS INS	277,536,565.26	-1.50	-0.41	4.38	10.22	4.84	7.69	7.54	6.39	7.33	7.52
KY Ins. SPRS Plan IPS Index		-0.88	0.27	4.75	11.94	4.94	7.52	7.26	6.42	7.58	7.73
KPPA INSURANCE FUND UNIT - NET RETURNS - 12/31/24 - PROXY PLAN ASSET PERFORMANCE											
Structure		Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
PUBLIC EQUITY		-3.10	-1.64	4.89	14.95	4.35	9.22	8.87	7.30	8.90	8.84
MSCI ACWI		-2.37	-0.99	5.56	17.49	5.41	9.69	9.00	7.23	8.81	8.74
PRIVATE EQUITY		0.72	0.87	2.52	5.16	6.80	11.85	12.70	10.62		10.63
Russell 3000 + 3%(Qtr Lag)		2.38	7.00	11.34	38.19	13.36	18.31	15.97	12.54		12.51
SPECIALTY CREDIT		1.01	2.26	5.39	11.22	7.56	7.18				6.78
50% BB US HY / 50% Morningstar LSTA Lev'd Ln		0.07	1.22	4.92	8.59	5.00	5.07				5.06
CORE FIXED INCOME		-1.63	-2.94	2.02	1.66	0.72	1.65	2.37			2.44
Bloomberg US Aggregate		-1.64	-3.06	1.98	1.25	-2.41	-0.33	1.35			1.72
CASH		0.39	1.20	2.54	5.34	3.81	2.39	1.78	1.82	2.51	2.58
FTSE Treasury Bill-3 Month		0.39	1.23	2.61	5.45	4.05	2.54	1.79	1.63	2.41	2.50
REAL ESTATE		-0.74	-0.83	0.84	-4.63	0.16	4.92	7.59			7.98
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^		0.02	0.02	-0.64	-8.04	-1.04	2.05	5.16			4.67
REAL RETURN		-2.02	3.59	10.48	17.24	10.70	9.25	6.34			5.73
US CPI +3%		0.19	0.95	1.94	5.75	6.19	6.55	4.67			4.33

Internal Portfolios Performance

 Kentucky Retirement Systems Pension Monthly Internally Managed Portfolio Performance (Net of Fee) As of Date: 12/31/2024												
Structure	Market Value	% of Total	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	ITD	Inception Date
PUBLIC EQUITY												
S&P 500 INDEX	3,430,106,718.16	17.28	-2.35	2.44	8.47	25.02	9.03	14.75	13.23	10.60	9.33	2001-07-01
KY Ret. S&P Blend			-2.38	2.41	8.44	25.02	8.94	14.53	13.10	10.52		
Internal US Mid Cap	240,955,123.41	1.21	-7.13	0.44	7.42	14.43	5.61	11.05	10.18		10.43	2014-08-01
S&P MidCap 400 Index			-7.12	0.34		13.93	4.87	10.34	9.68			
Scientific Beta	279,193,536.38	1.41	-5.78	-0.61	7.38	15.77	4.60	9.50			10.82	2016-07-01
S&P 500 Index			-2.38	2.41		25.02	8.94	14.53				
PRIVATE EQUITY												
INTERNAL PRIVATE EQ	89,385,893.97	0.45	-1.91	2.04	7.27	18.31					17.30	2023-12-01
CORE FI												
INTERNAL CORE FI	998,575,671.19	5.03	-1.68	-3.08	2.04	1.34					4.23	2023-09-01
Bloomberg US Aggregate Bond Index			-1.64	-3.06	1.98	1.25					4.03	
REAL ESTATE												
INTERNAL REAL ESTATE	47,021,710.79	0.24	-8.17	-8.36	7.32	4.69					5.35	2023-12-01
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^			0.02	0.02	-0.64	-8.04						
REAL RETURN												
INTERNAL REAL RETURN	241,695,452.41	1.22	-8.39	-4.90	7.40	13.11					11.60	2023-12-01
KRS CPI + 300 bpts			0.19	0.95	1.94	5.75					5.34	
INTERNAL TIPS	144,047.17	0.00	0.39	1.20	2.54	5.31	4.03	2.55	2.47	3.41	4.25	2002-05-01
KR2 Internal US TIPS Blend			-0.81	-1.60	1.77	3.25	-0.06	2.75	2.56	3.41	4.25	
CASH ACCOUNT	522,394,476.29	2.63	0.39	1.20	2.55	5.33	3.82	2.41	1.92	1.98	3.39	1988-01-01
FTSE Treasury Bill-3 Month			0.39	1.23		5.45	4.05	2.54	1.79	1.63	3.02	

Allocations

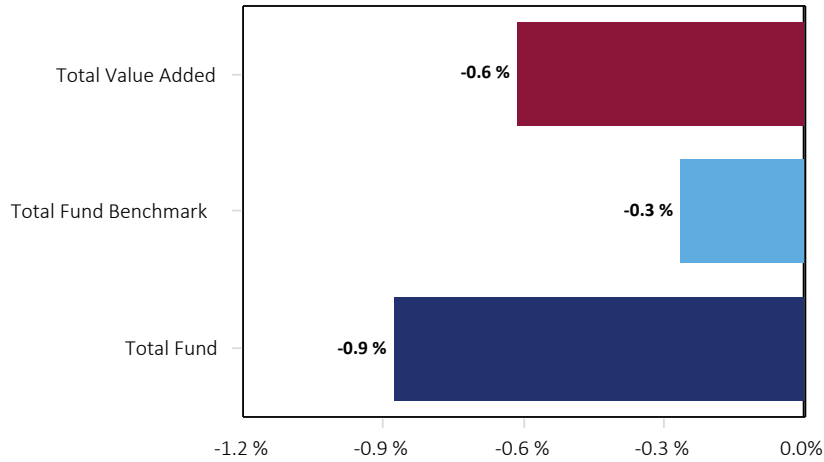


Total Fund Attribution

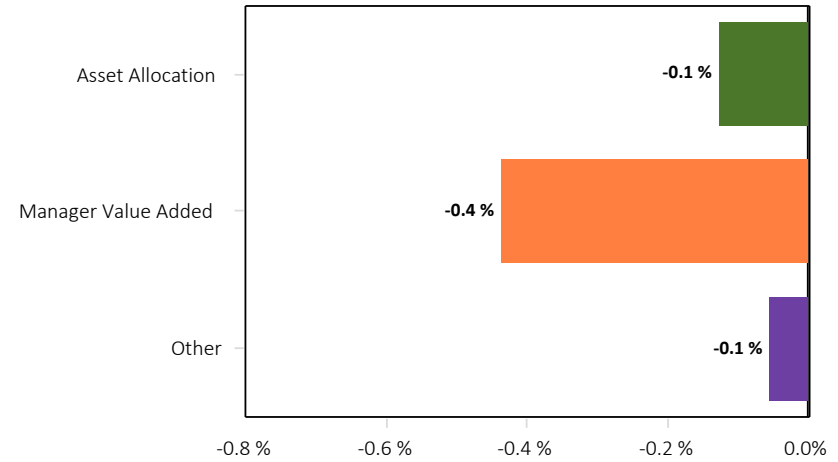
KERS Pension Plan

Periods Ended 1 Quarter Ending December 31, 2024

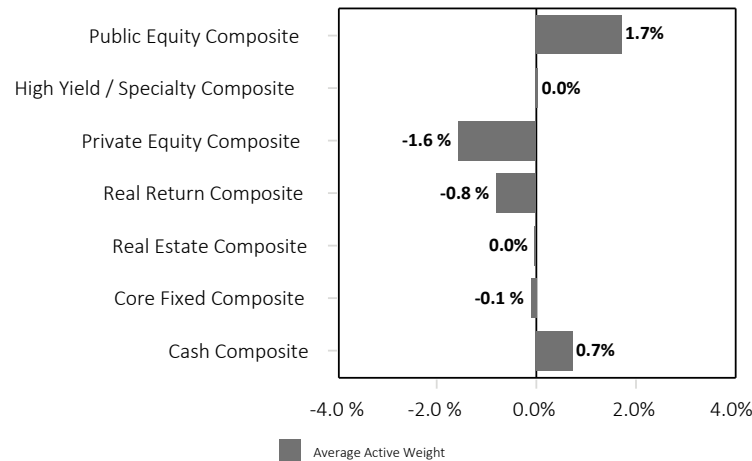
Total Fund Performance



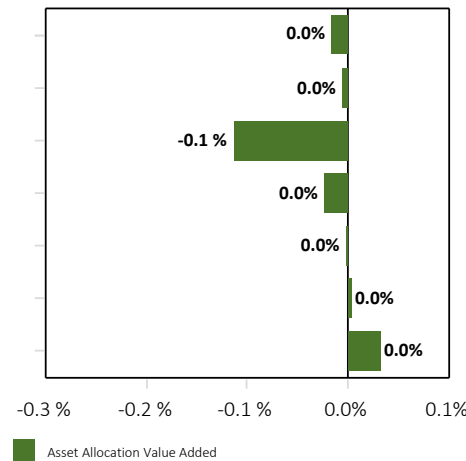
Total Value Added:-0.6 %



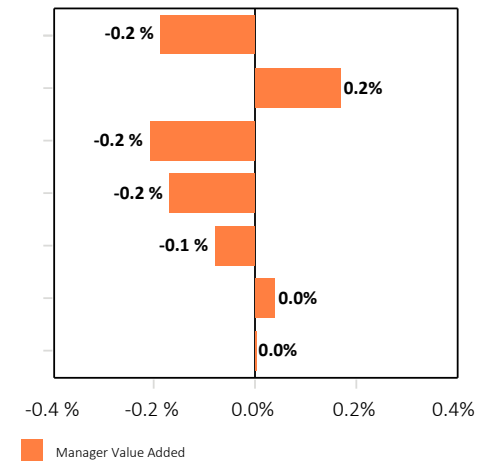
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:-0.4 %

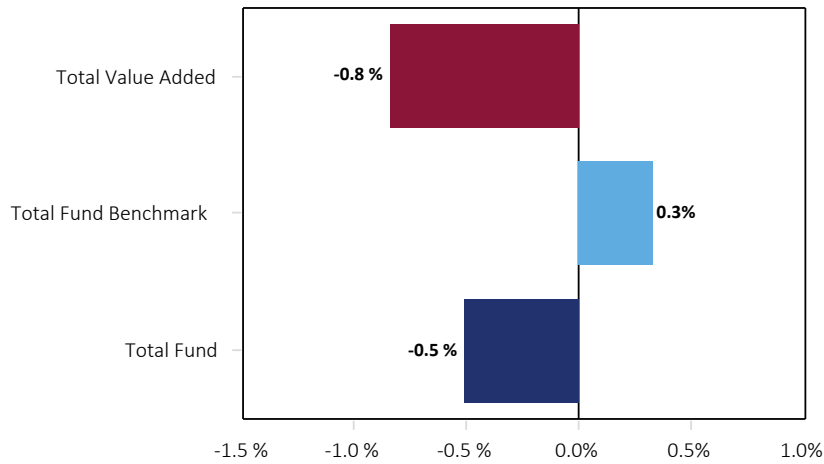


Total Fund Attribution

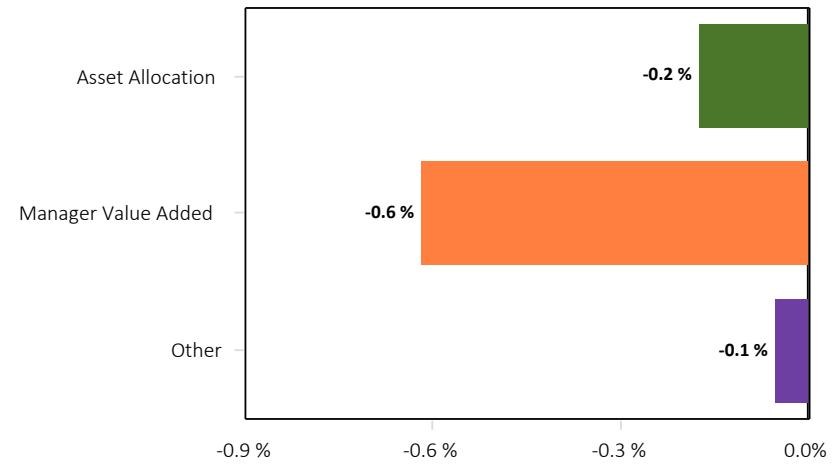
KERS (H) Pension Plan

Periods Ended 1 Quarter Ending December 31, 2024

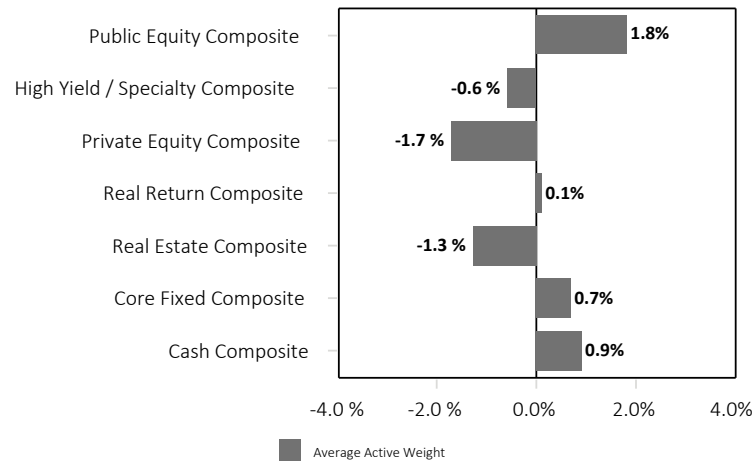
Total Fund Performance



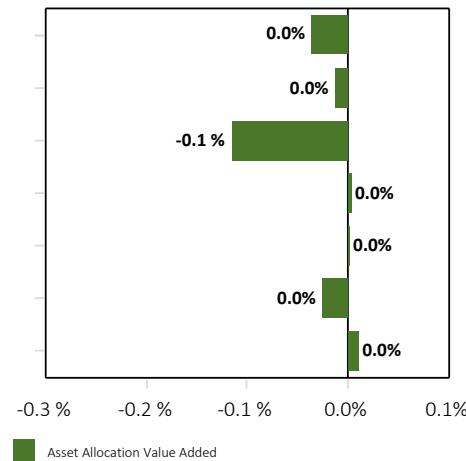
Total Value Added:-0.8 %



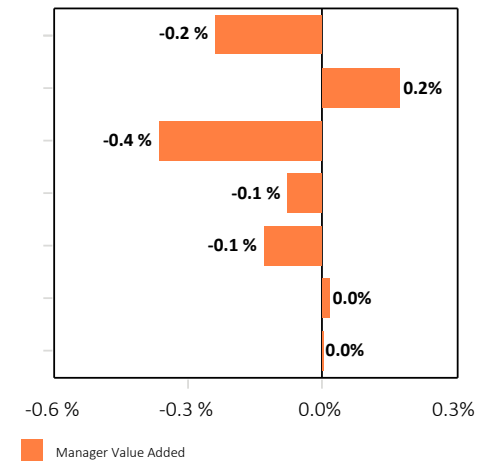
Total Asset Allocation:-0.2 %



Asset Allocation Value Added:-0.2 %



Total Manager Value Added:-0.6 %

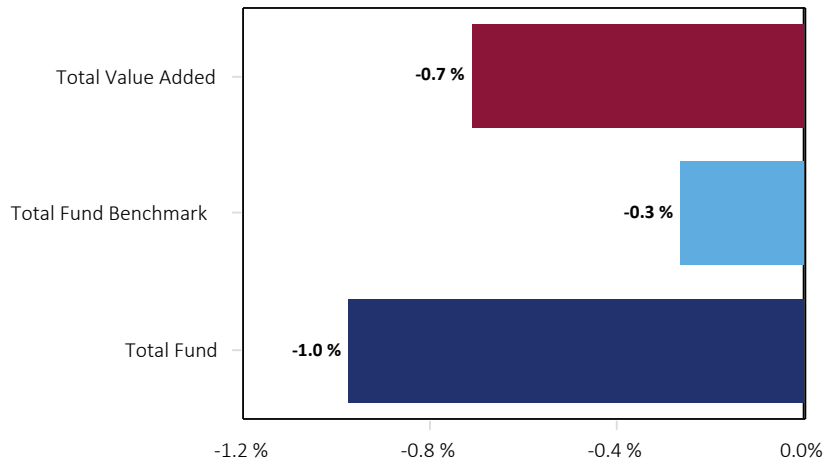


Total Fund Attribution

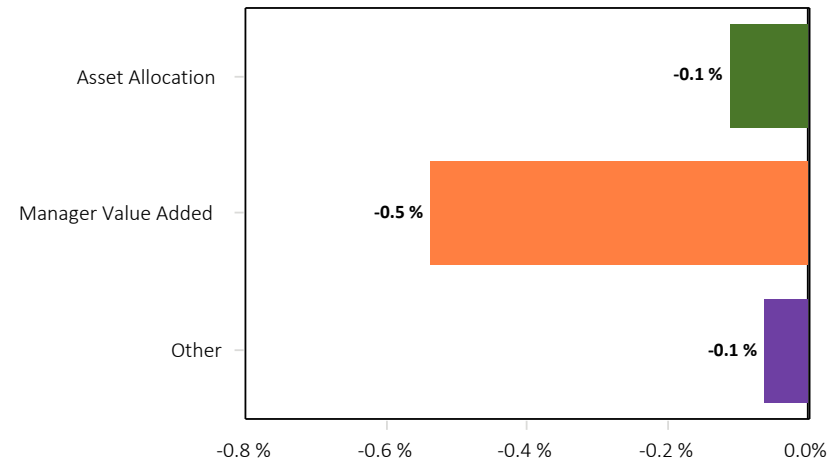
SPRS Pension Plan

Periods Ended 1 Quarter Ending December 31, 2024

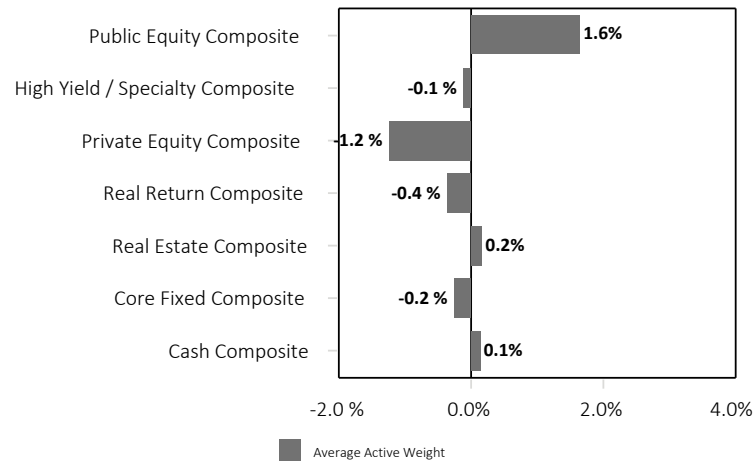
Total Fund Performance



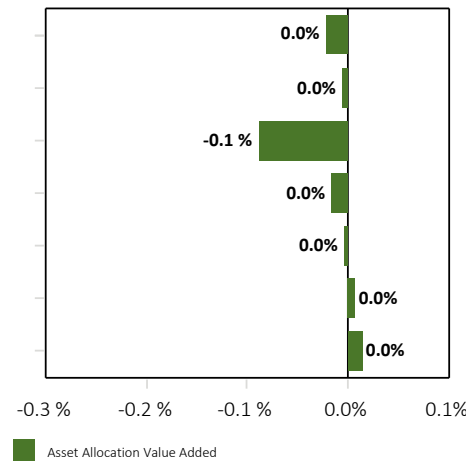
Total Value Added:-0.7 %



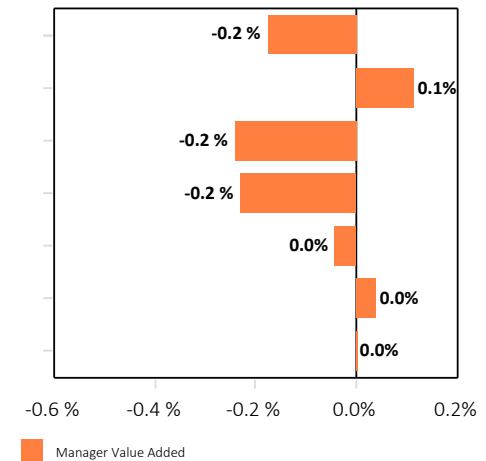
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:-0.5 %

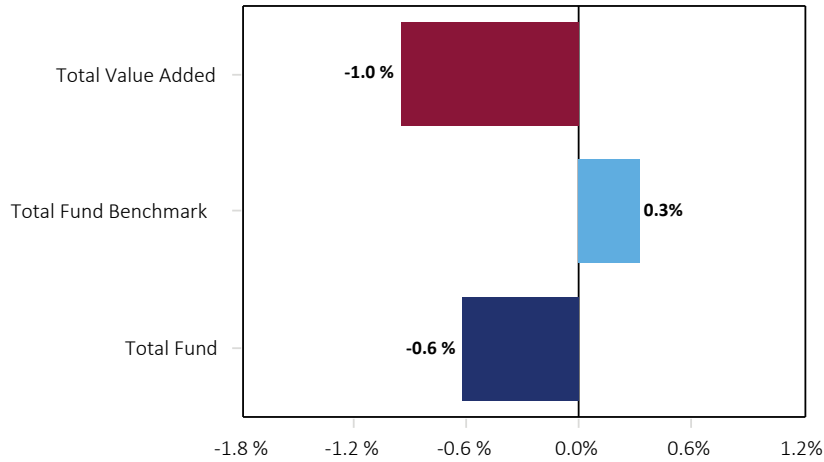


Total Fund Attribution

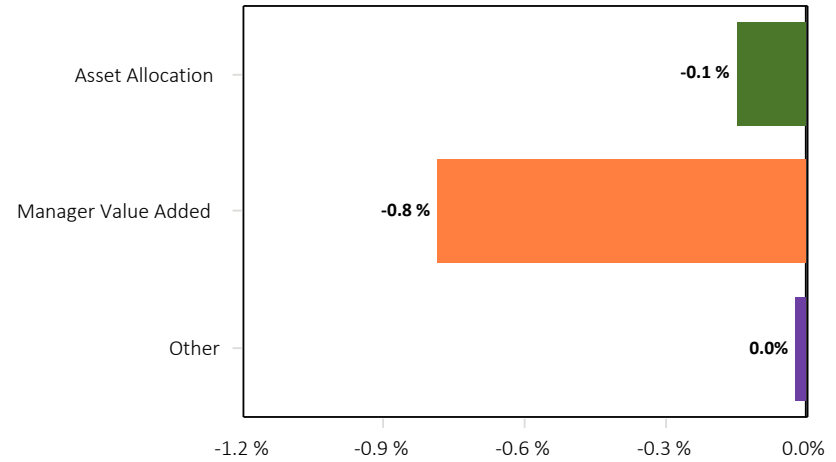
KERS Insurance Plan

Periods Ended 1 Quarter Ending December 31, 2024

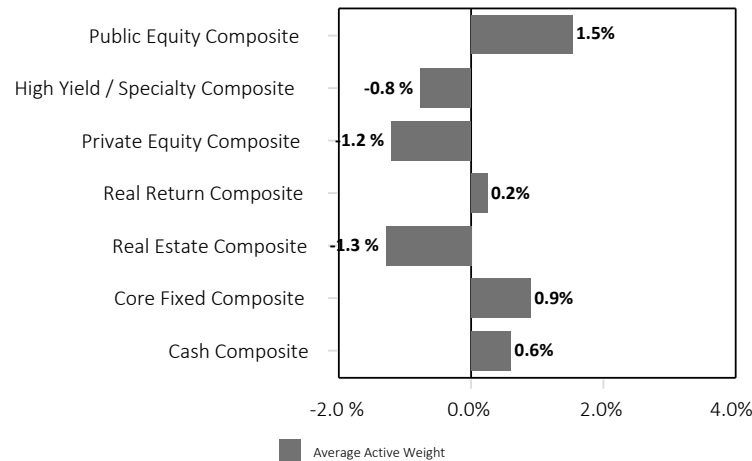
Total Fund Performance



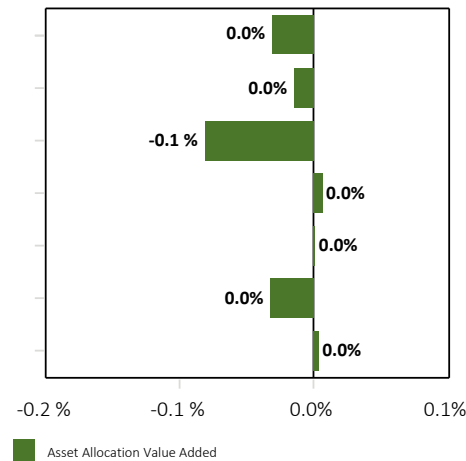
Total Value Added:-1.0 %



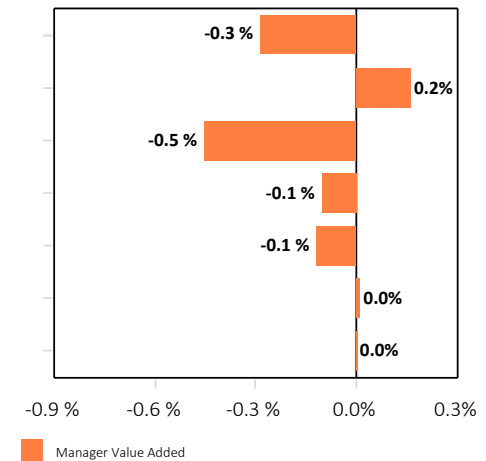
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:-0.8 %

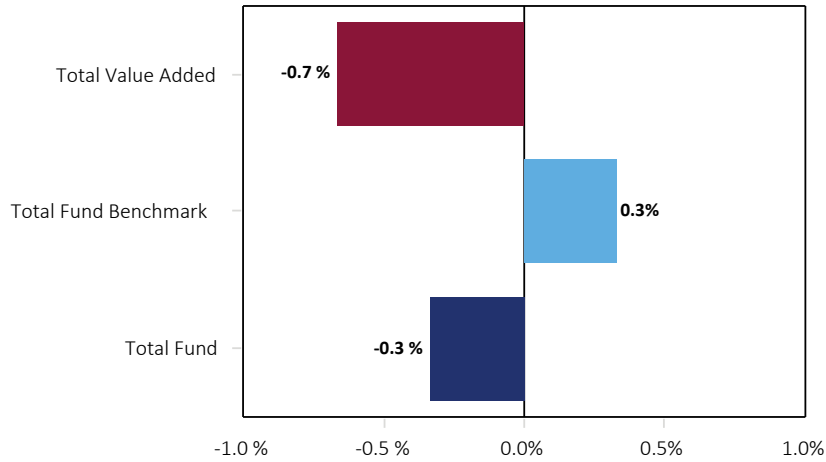


Total Fund Attribution

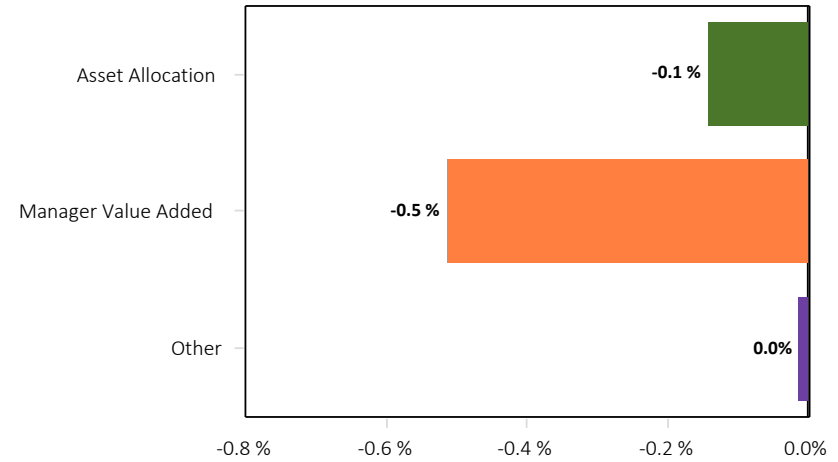
KERS (H) Insurance Plan

Periods Ended 1 Quarter Ending December 31, 2024

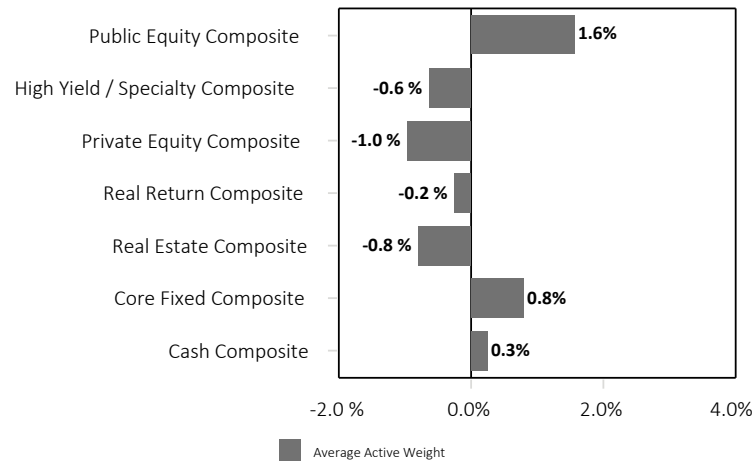
Total Fund Performance



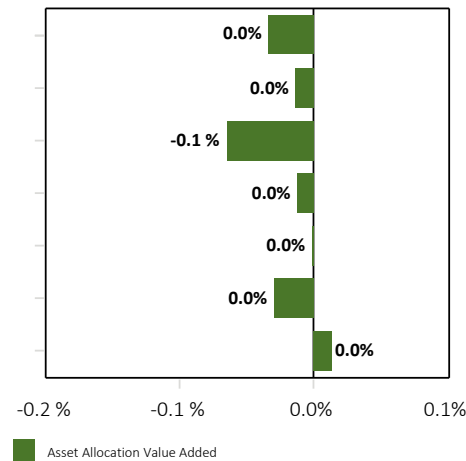
Total Value Added:-0.7 %



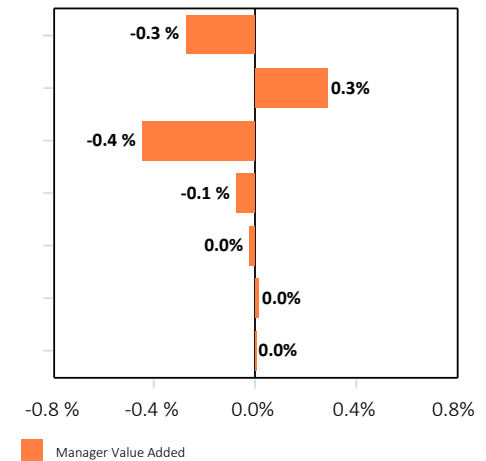
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:-0.5 %

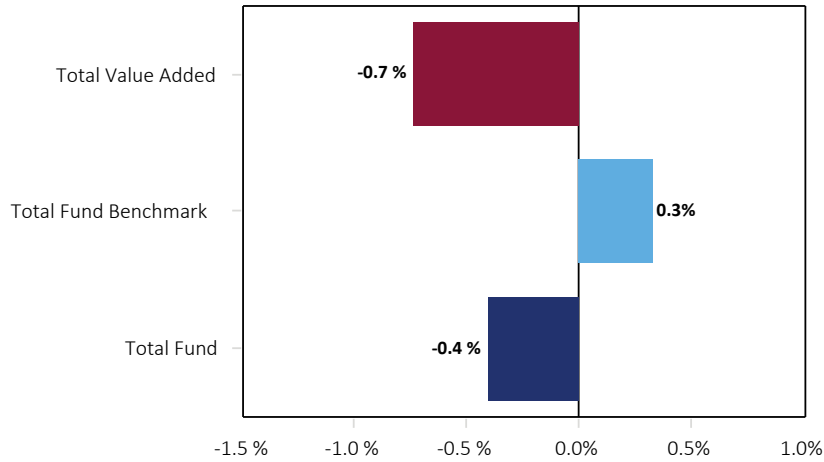


Total Fund Attribution

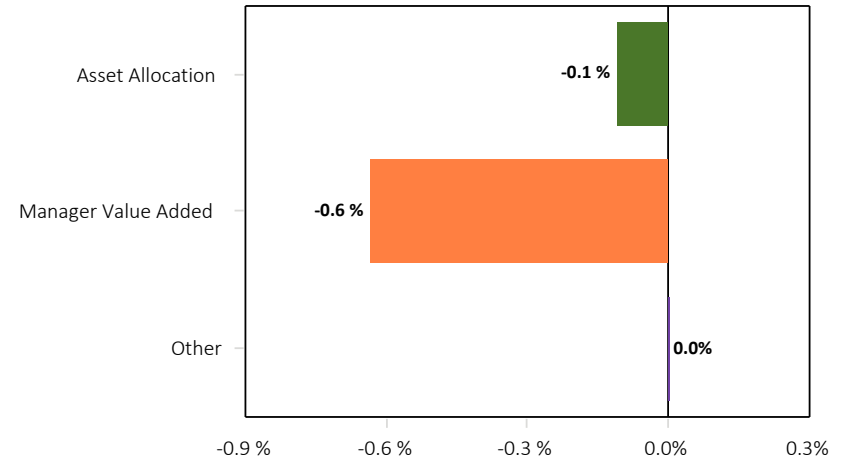
SPRS Insurance Plan

Periods Ended 1 Quarter Ending December 31, 2024

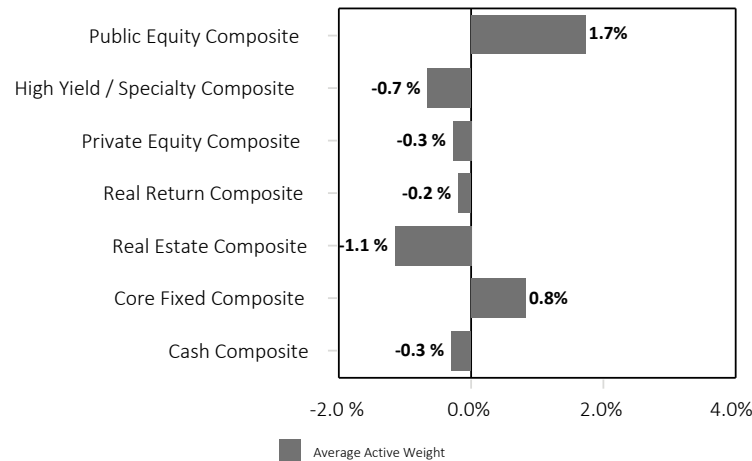
Total Fund Performance



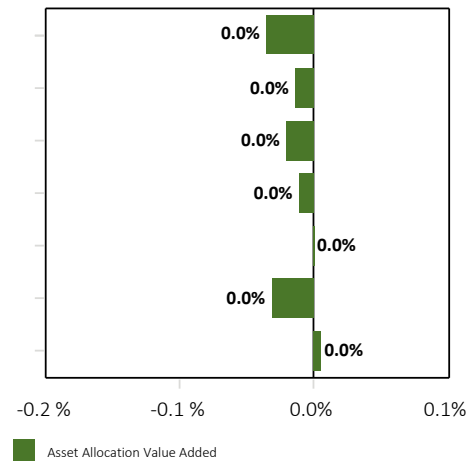
Total Value Added:-0.7 %



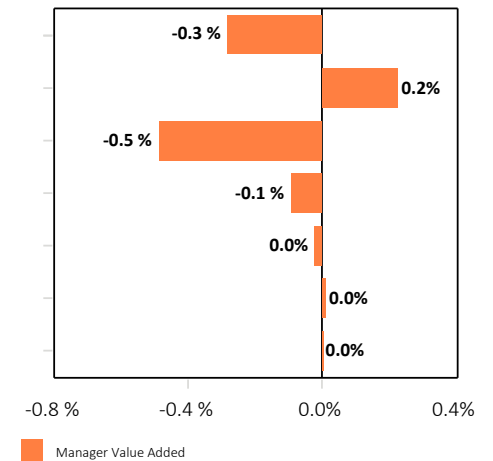
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:-0.6 %

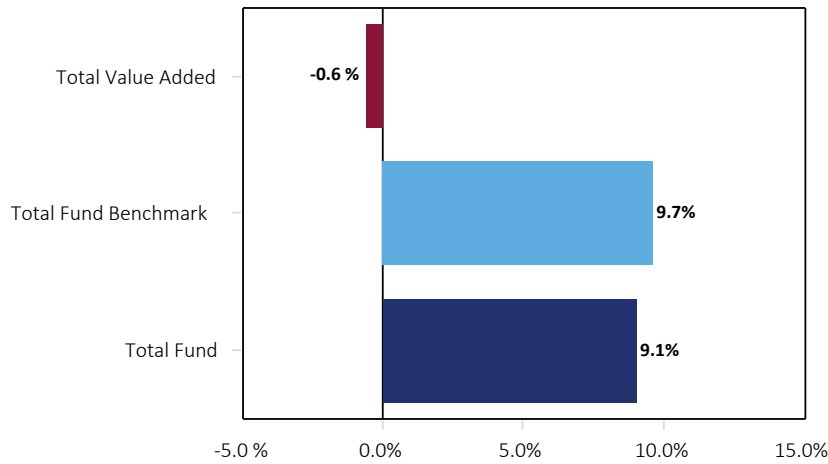


Total Fund Attribution

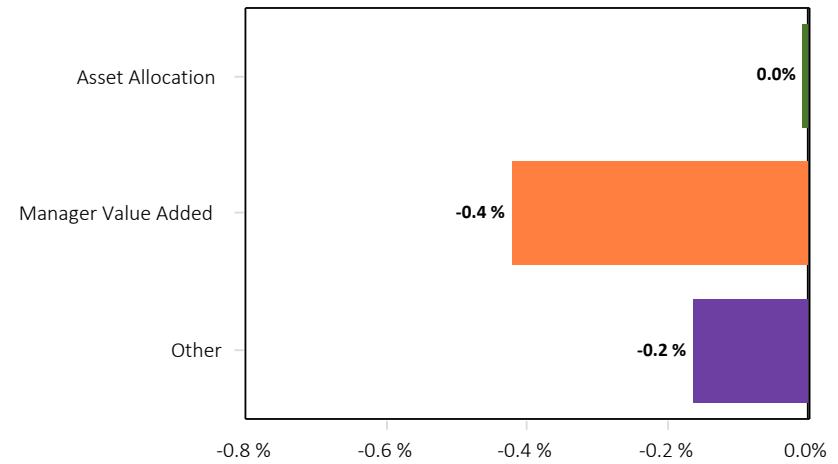
KERS Pension Plan

Periods Ended 1 Year Ending December 31, 2024

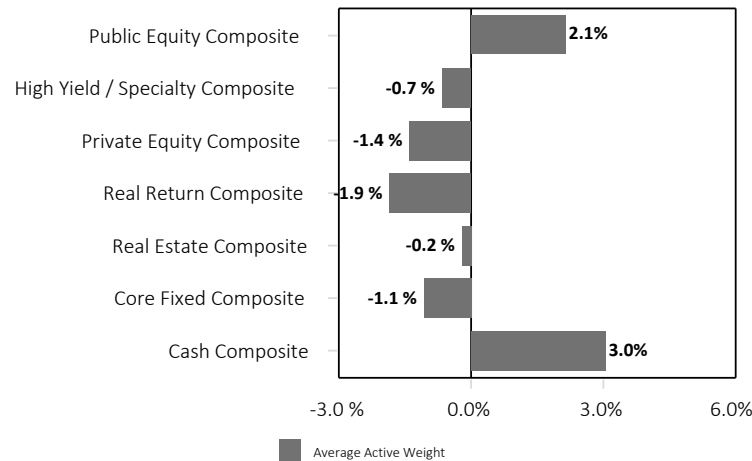
Total Fund Performance



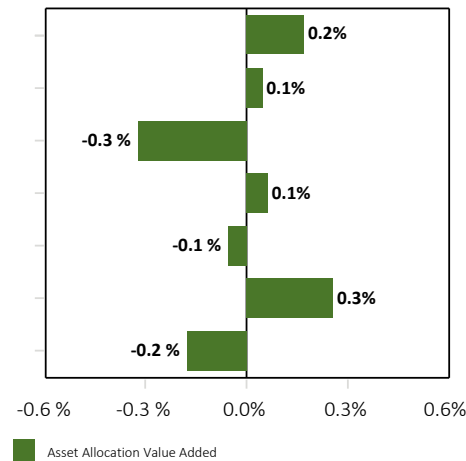
Total Value Added:-0.6 %



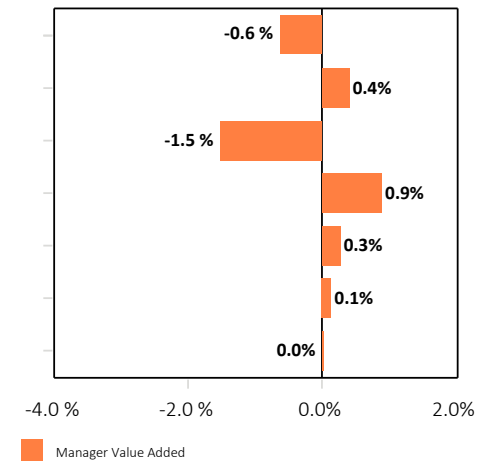
Total Asset Allocation:0.0%



Asset Allocation Value Added:0.0%



Total Manager Value Added:-0.4 %

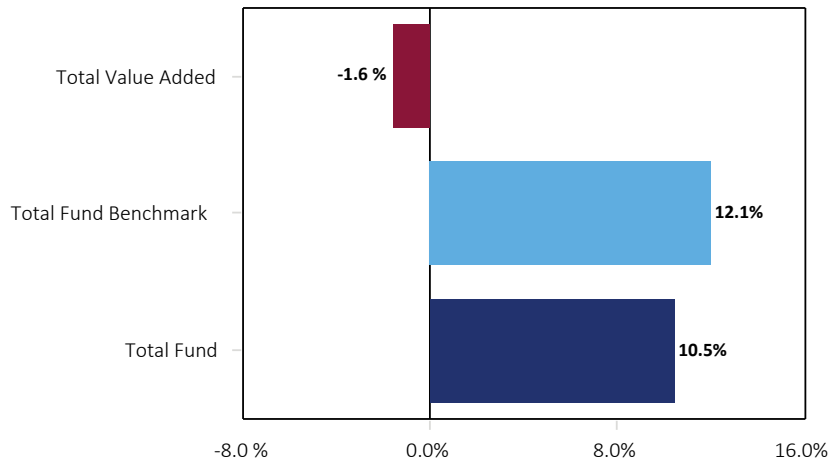


Total Fund Attribution

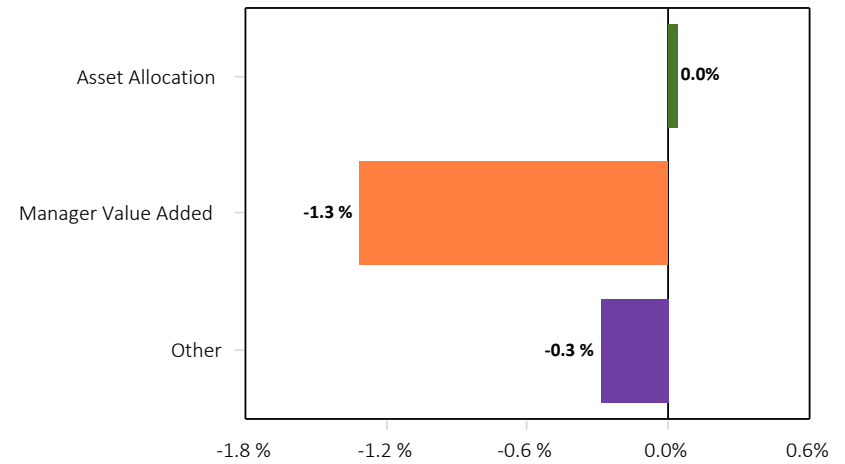
KERS (H) Pension Plan

Periods Ended 1 Year Ending December 31, 2024

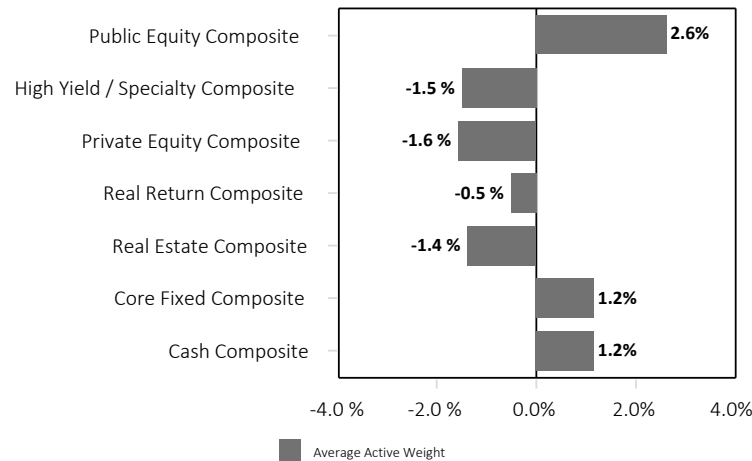
Total Fund Performance



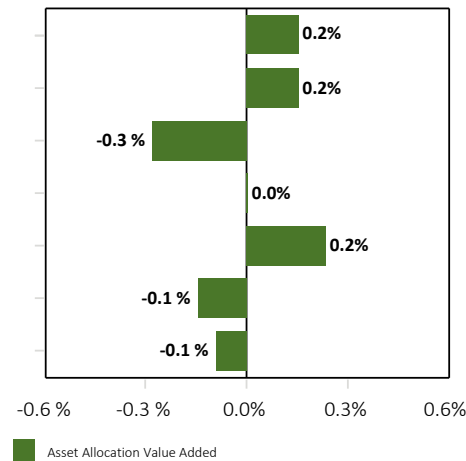
Total Value Added:-1.6 %



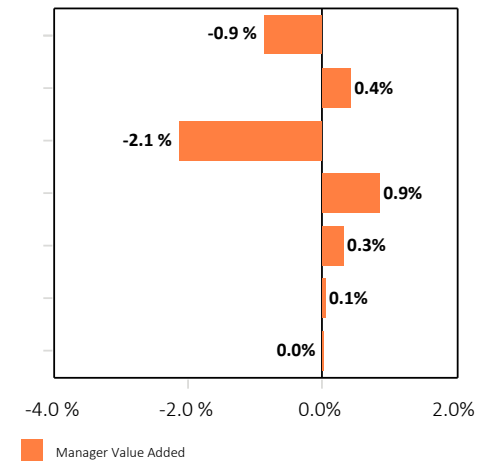
Total Asset Allocation:0.0%



Asset Allocation Value Added:0.0%



Total Manager Value Added:-1.3 %

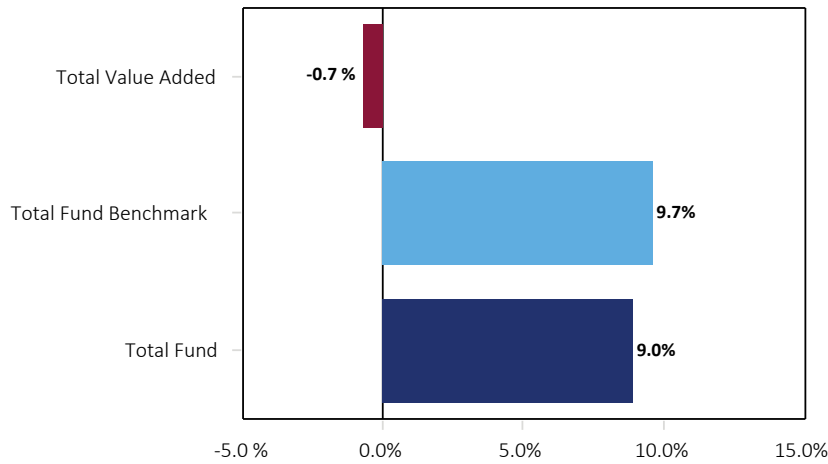


Total Fund Attribution

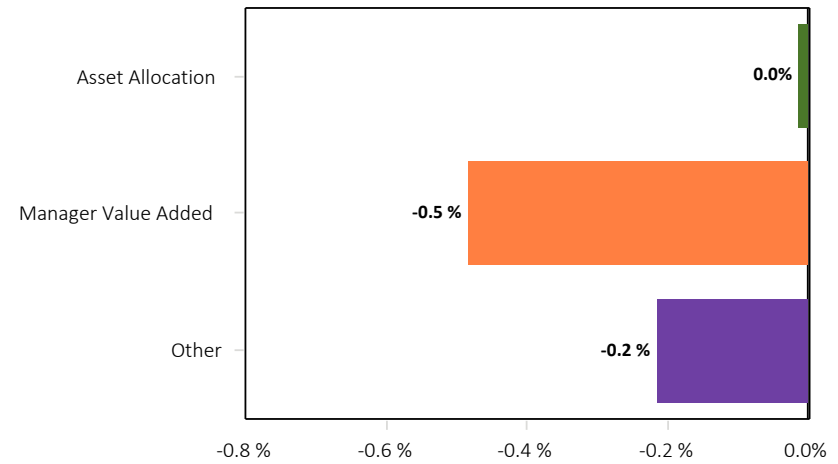
SPRS Pension Plan

Periods Ended 1 Year Ending December 31, 2024

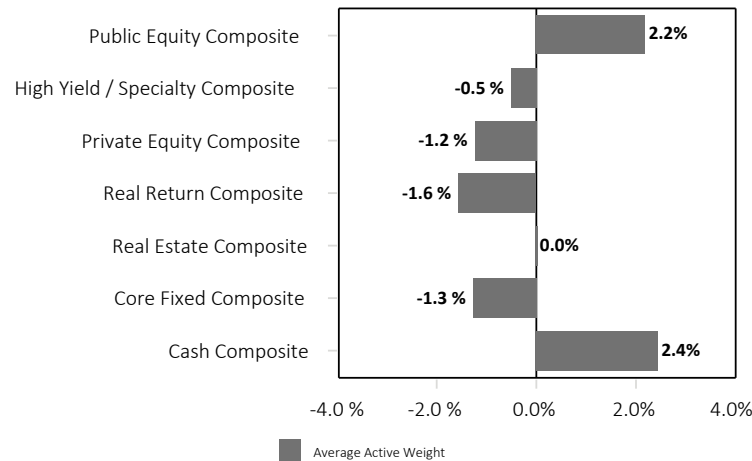
Total Fund Performance



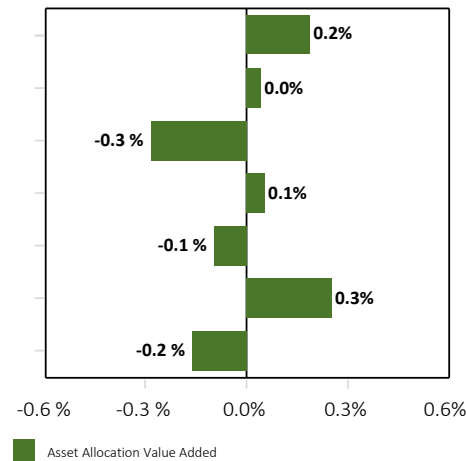
Total Value Added:-0.7 %



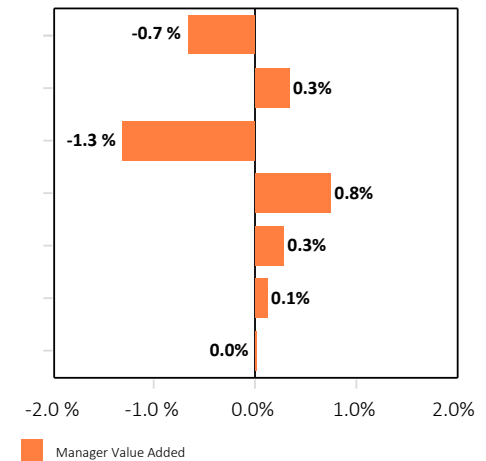
Total Asset Allocation:0.0%



Asset Allocation Value Added:0.0%



Total Manager Value Added:-0.5 %

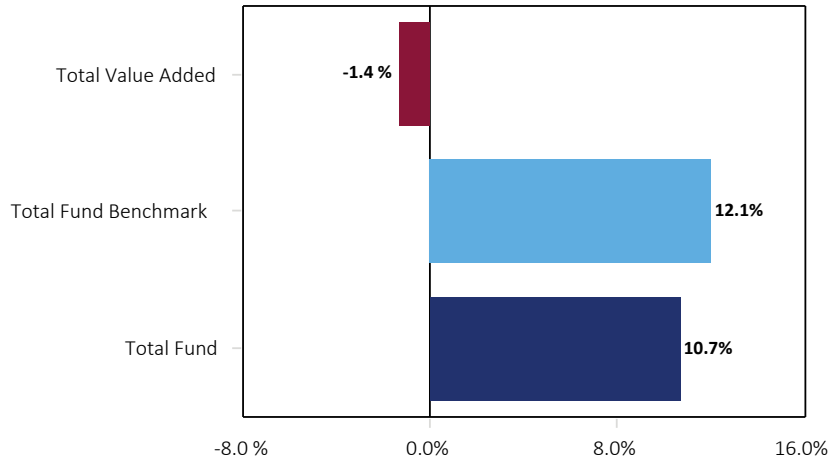


Total Fund Attribution

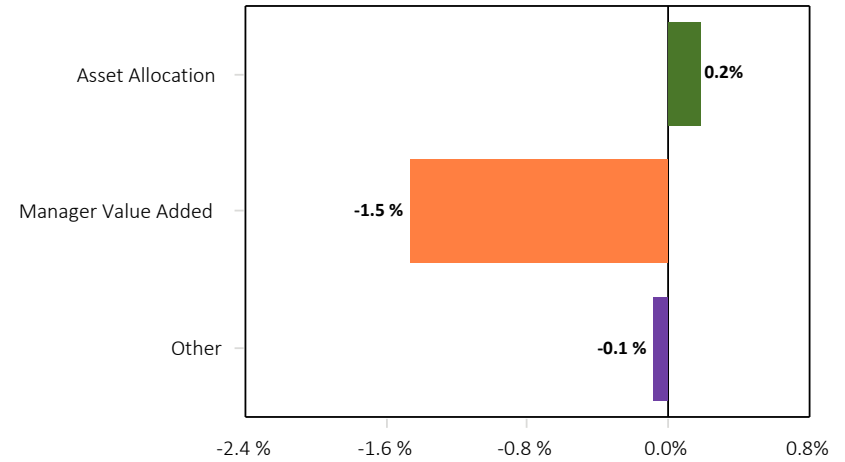
KERS Insurance Plan

Periods Ended 1 Year Ending December 31, 2024

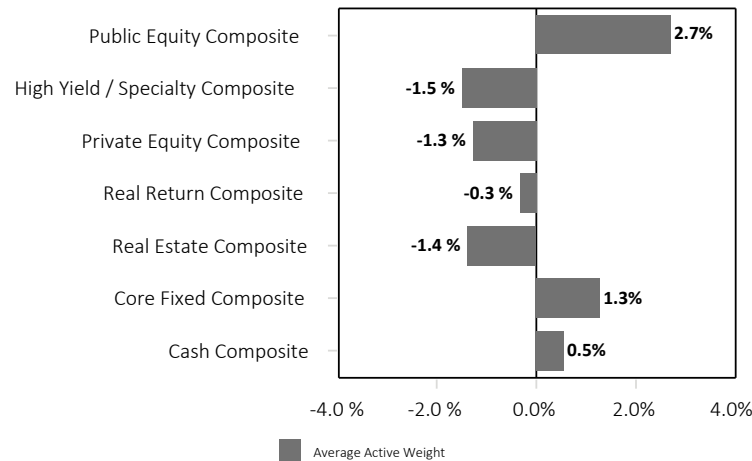
Total Fund Performance



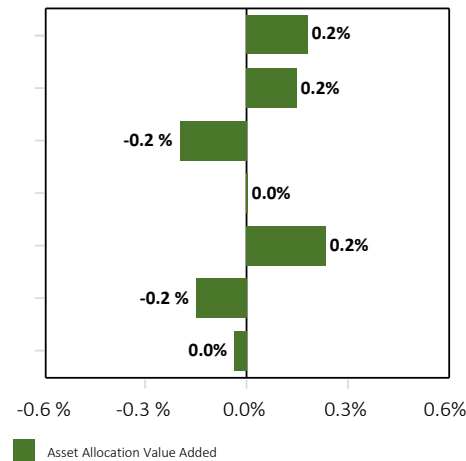
Total Value Added:-1.4 %



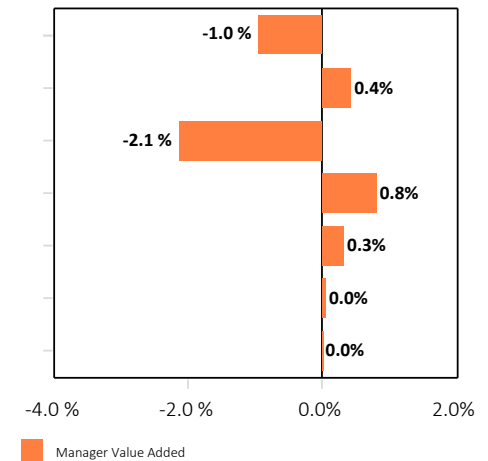
Total Asset Allocation:0.2%



Asset Allocation Value Added:0.2%



Total Manager Value Added:-1.5 %

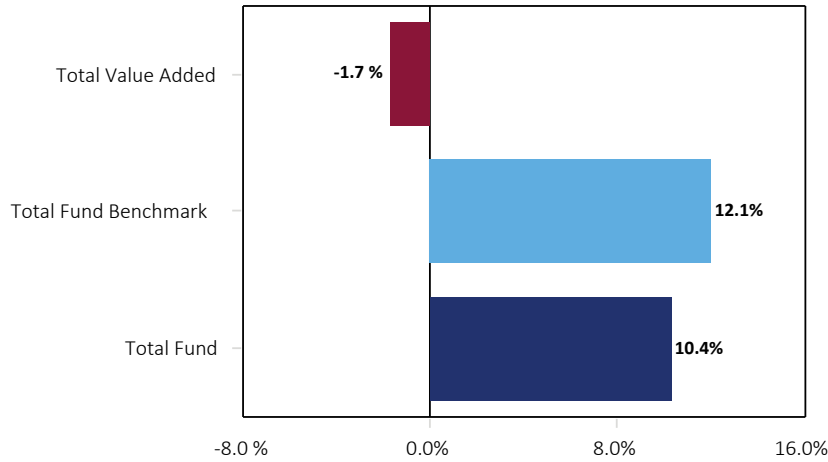


Total Fund Attribution

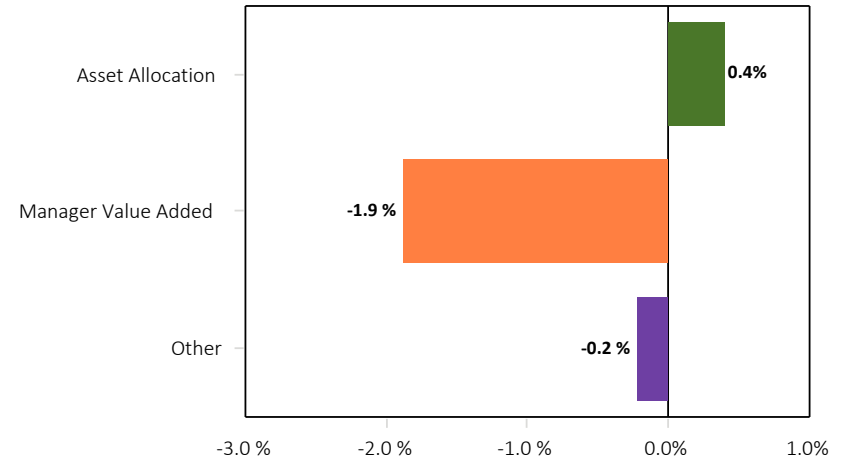
KERS (H) Insurance Plan

Periods Ended 1 Year Ending December 31, 2024

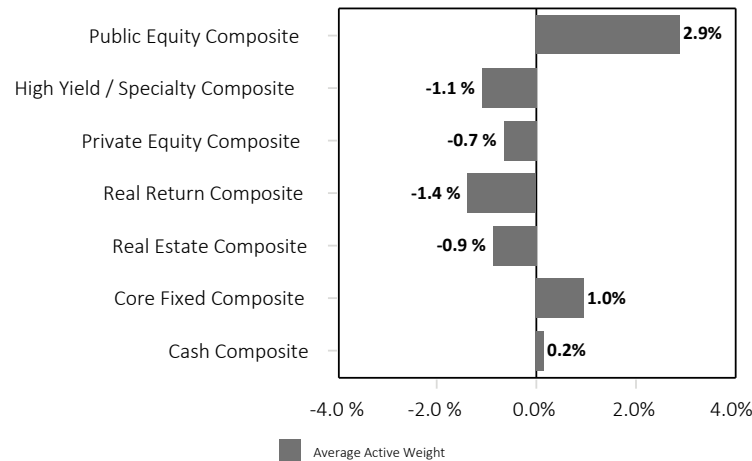
Total Fund Performance



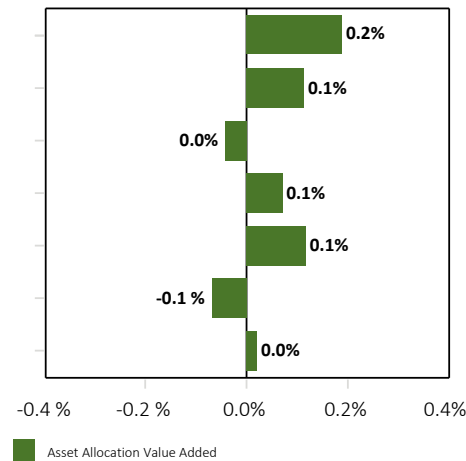
Total Value Added:-1.7 %



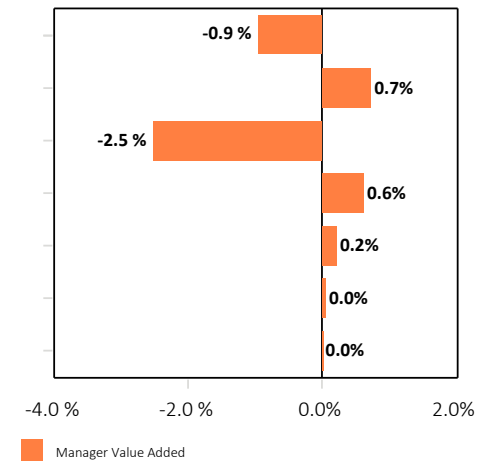
Total Asset Allocation:0.4%



Asset Allocation Value Added:0.4%



Total Manager Value Added:-1.9%

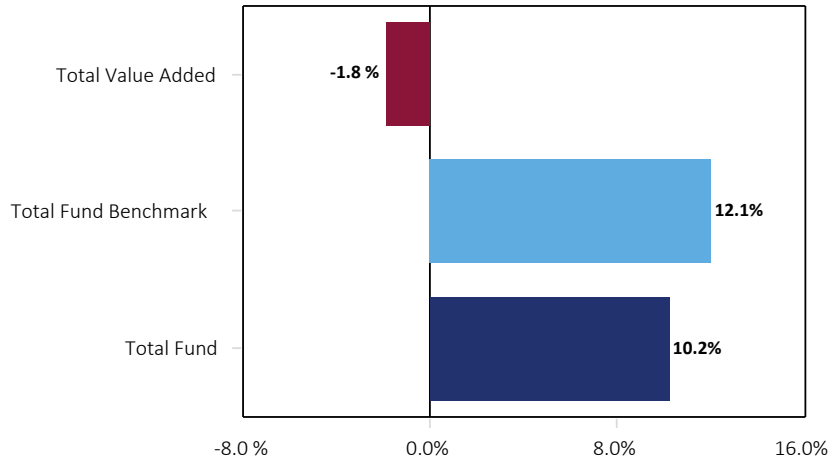


Total Fund Attribution

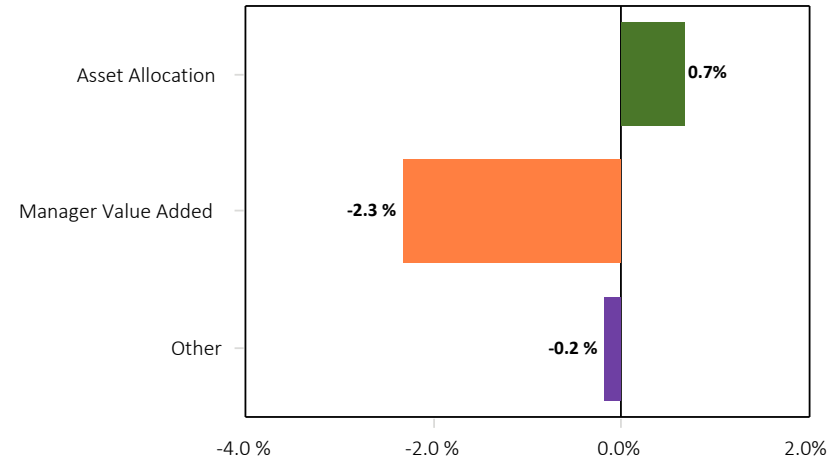
SPRS Insurance Plan

Periods Ended 1 Year Ending December 31, 2024

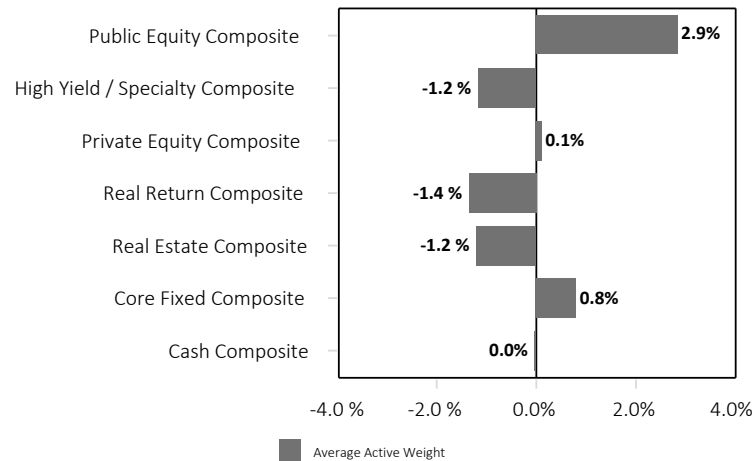
Total Fund Performance



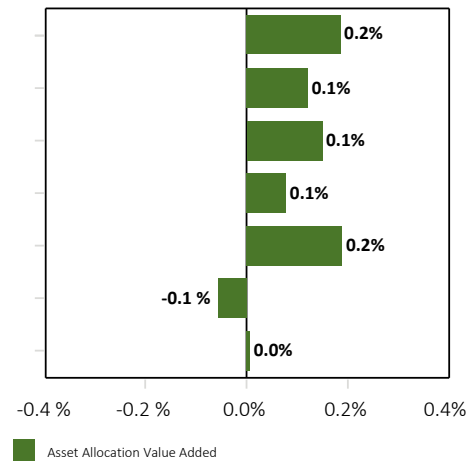
Total Value Added:-1.8 %



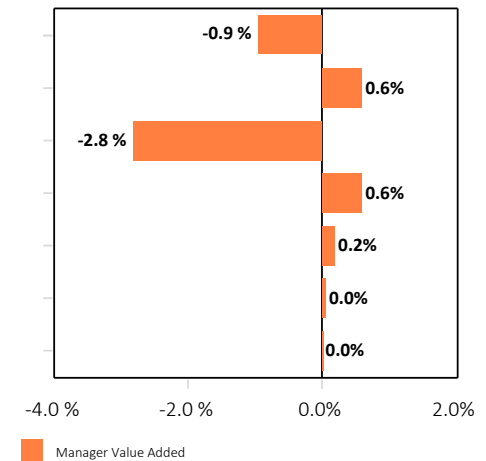
Total Asset Allocation:0.7%



Asset Allocation Value Added:0.7%



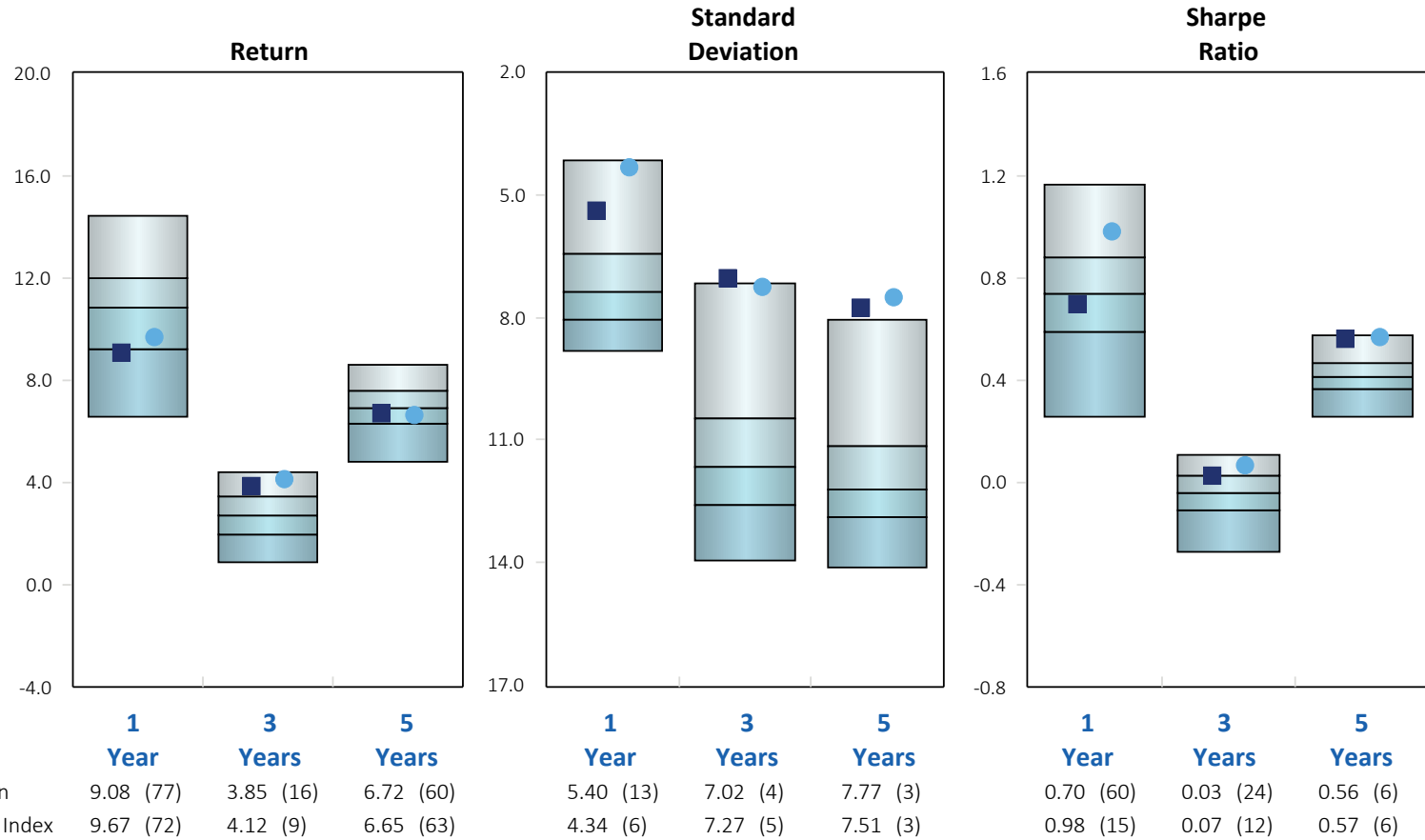
Total Manager Value Added:-2.3 %



Plan Sponsor Peer Group Analysis - Multi Statistics

KERS Pension Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



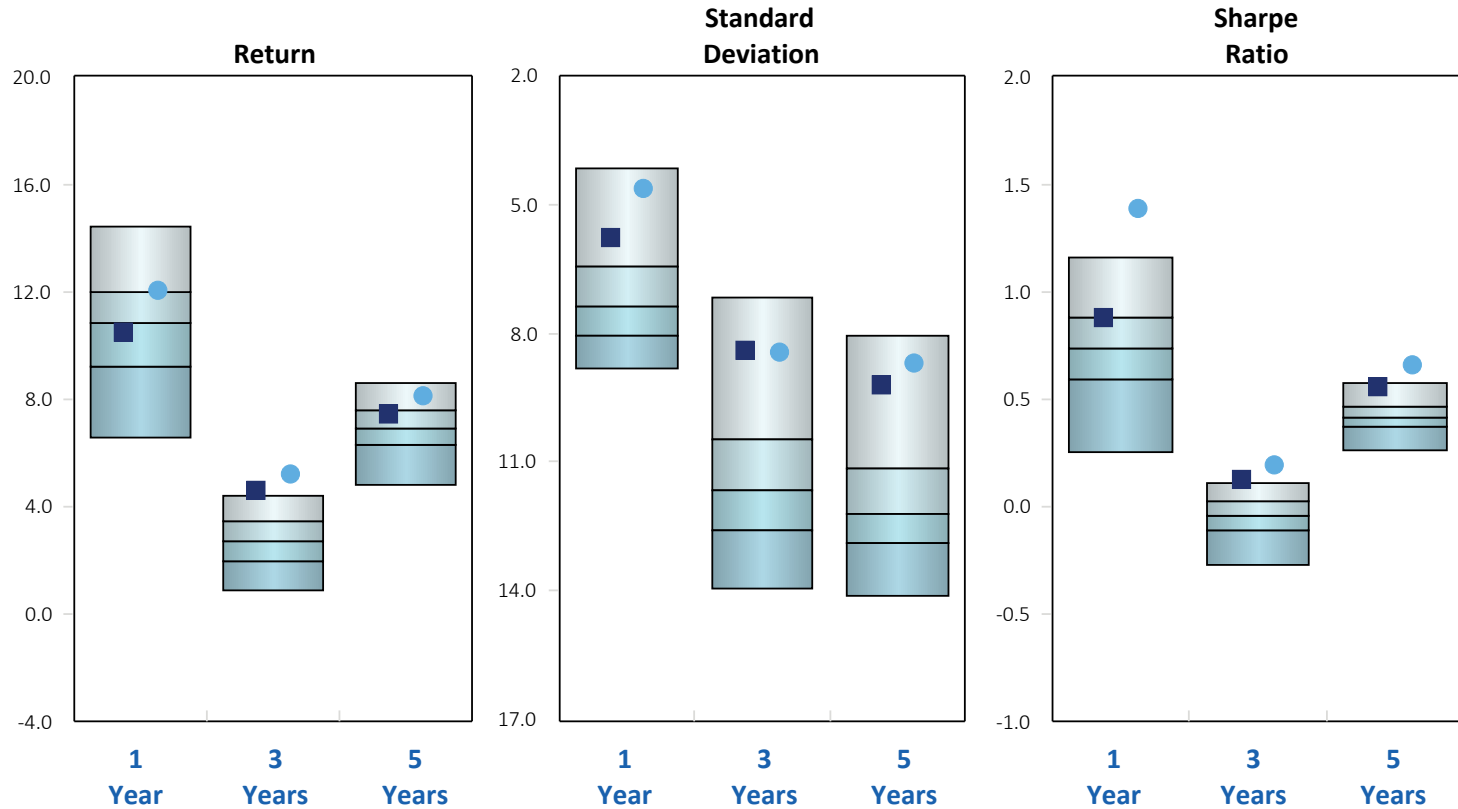
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS Pension Plan	9.08 (77)	3.85 (16)	6.72 (60)	5.40 (13)	7.02 (4)	7.77 (3)	0.70 (60)	0.03 (24)	0.56 (6)
● KERS Pension IPS Index	9.67 (72)	4.12 (9)	6.65 (63)	4.34 (6)	7.27 (5)	7.51 (3)	0.98 (15)	0.07 (12)	0.57 (6)
5th Percentile	14.47	4.41	8.61	4.17	7.15	8.05	1.16	0.11	0.58
1st Quartile	12.00	3.48	7.59	6.46	10.48	11.16	0.88	0.03	0.47
Median	10.88	2.70	6.95	7.37	11.68	12.22	0.74	-0.04	0.42
3rd Quartile	9.25	1.99	6.30	8.05	12.60	12.88	0.59	-0.11	0.37
95th Percentile	6.56	0.91	4.81	8.83	13.93	14.10	0.25	-0.27	0.26

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis - Multi Statistics

KERS (H) Pension Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



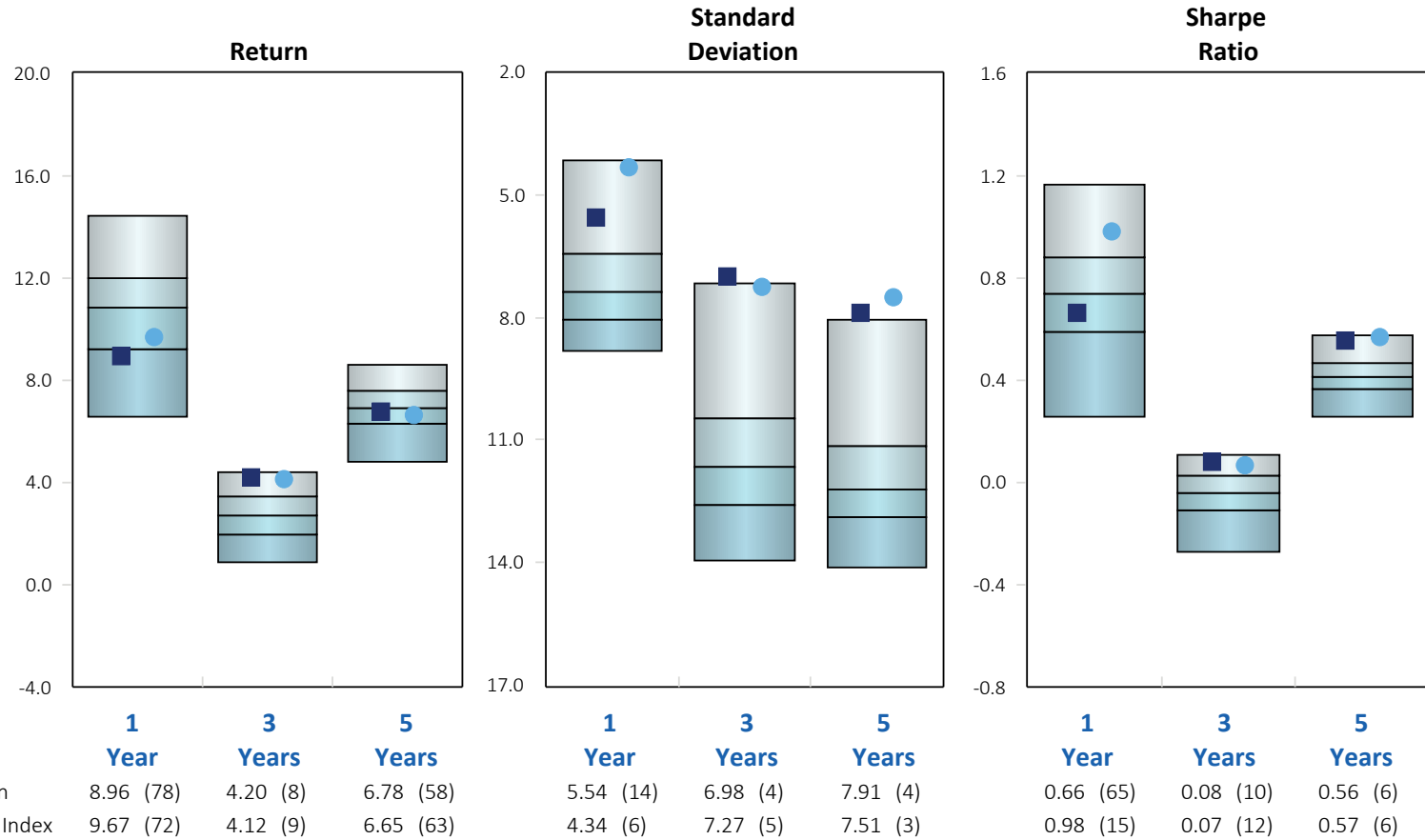
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS (H) Pension Plan	10.49 (57)	4.64 (5)	7.47 (30)	5.78 (16)	8.40 (10)	9.22 (9)	0.88 (25)	0.13 (5)	0.56 (6)
● KERS (H) Pension IPS Index	12.05 (25)	5.20 (3)	8.14 (13)	4.65 (7)	8.44 (10)	8.72 (7)	1.39 (1)	0.19 (3)	0.66 (2)
5th Percentile	14.47	4.41	8.61	4.17	7.15	8.05	1.16	0.11	0.58
1st Quartile	12.00	3.48	7.59	6.46	10.48	11.16	0.88	0.03	0.47
Median	10.88	2.70	6.95	7.37	11.68	12.22	0.74	-0.04	0.42
3rd Quartile	9.25	1.99	6.30	8.05	12.60	12.88	0.59	-0.11	0.37
95th Percentile	6.56	0.91	4.81	8.83	13.93	14.10	0.25	-0.27	0.26

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis - Multi Statistics

SPRS Pension Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



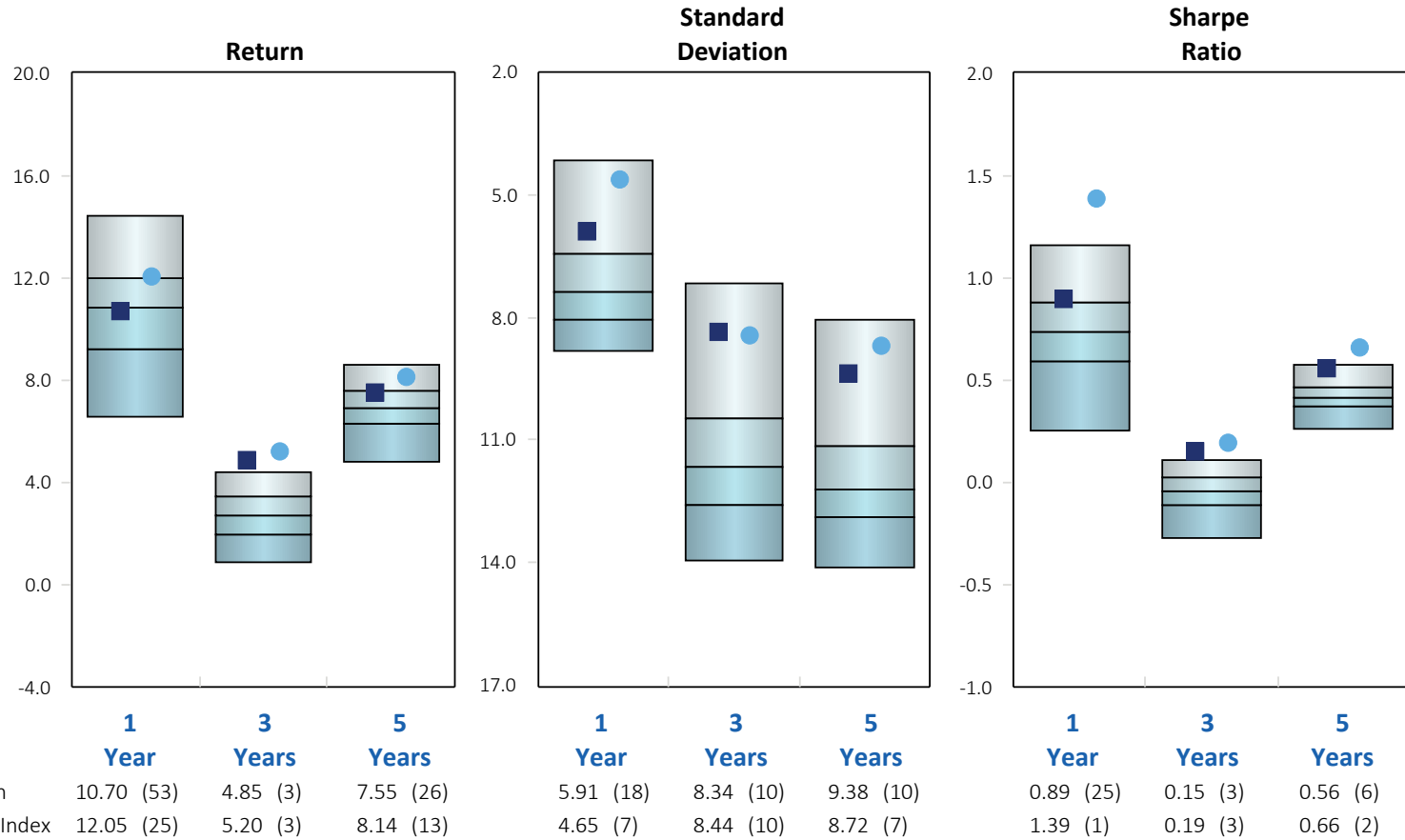
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ SPRS Pension Plan	8.96 (78)	4.20 (8)	6.78 (58)	5.54 (14)	6.98 (4)	7.91 (4)	0.66 (65)	0.08 (10)	0.56 (6)
● SPRS Pension IPS Index	9.67 (72)	4.12 (9)	6.65 (63)	4.34 (6)	7.27 (5)	7.51 (3)	0.98 (15)	0.07 (12)	0.57 (6)
5th Percentile	14.47	4.41	8.61	4.17	7.15	8.05	1.16	0.11	0.58
1st Quartile	12.00	3.48	7.59	6.46	10.48	11.16	0.88	0.03	0.47
Median	10.88	2.70	6.95	7.37	11.68	12.22	0.74	-0.04	0.42
3rd Quartile	9.25	1.99	6.30	8.05	12.60	12.88	0.59	-0.11	0.37
95th Percentile	6.56	0.91	4.81	8.83	13.93	14.10	0.25	-0.27	0.26

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis - Multi Statistics

KERS Insurance Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



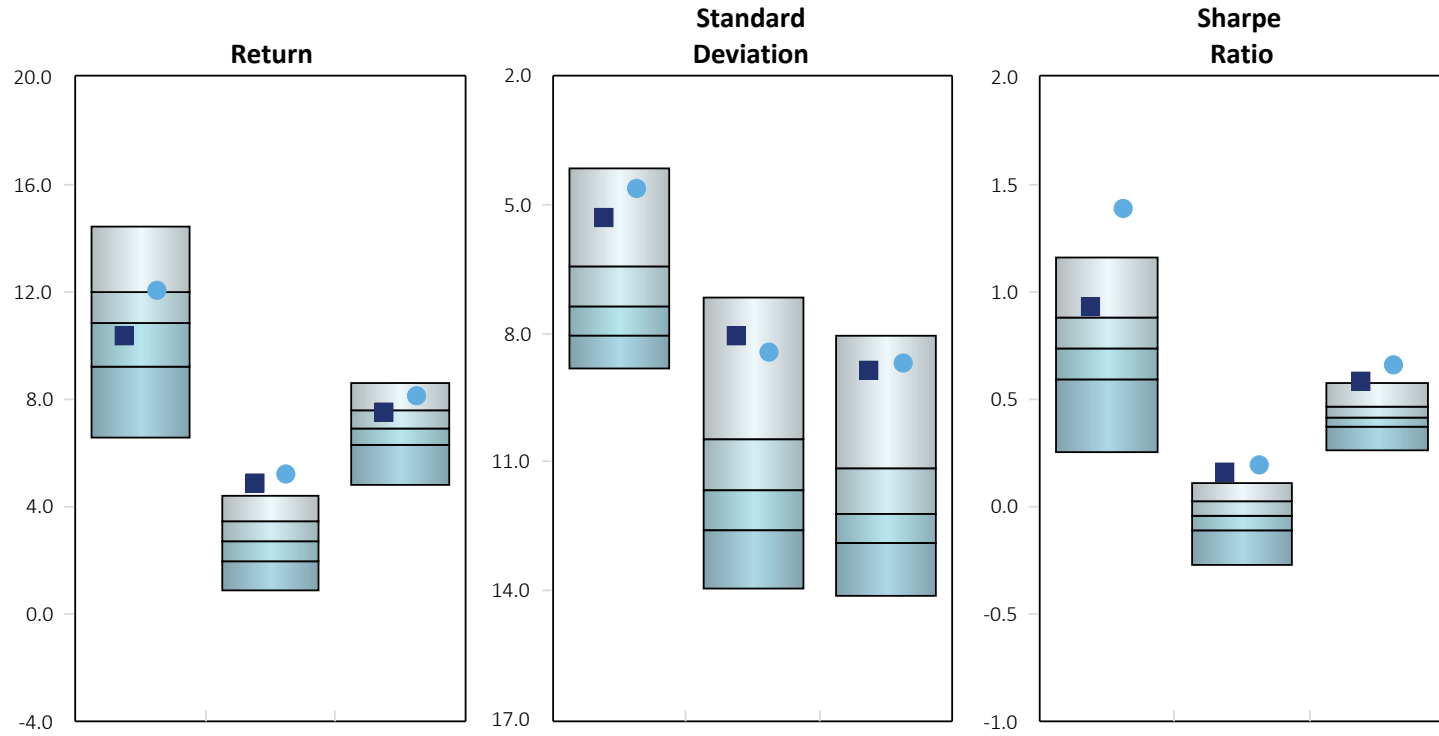
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS Insurance Plan	10.70 (53)	4.85 (3)	7.55 (26)	5.91 (18)	8.34 (10)	9.38 (10)	0.89 (25)	0.15 (3)	0.56 (6)
● KERS Insurance IPS Index	12.05 (25)	5.20 (3)	8.14 (13)	4.65 (7)	8.44 (10)	8.72 (7)	1.39 (1)	0.19 (3)	0.66 (2)
5th Percentile	14.47	4.41	8.61	4.17	7.15	8.05	1.16	0.11	0.58
1st Quartile	12.00	3.48	7.59	6.46	10.48	11.16	0.88	0.03	0.47
Median	10.88	2.70	6.95	7.37	11.68	12.22	0.74	-0.04	0.42
3rd Quartile	9.25	1.99	6.30	8.05	12.60	12.88	0.59	-0.11	0.37
95th Percentile	6.56	0.91	4.81	8.83	13.93	14.10	0.25	-0.27	0.26

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis - Multi Statistics

KERS (H) Insurance Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



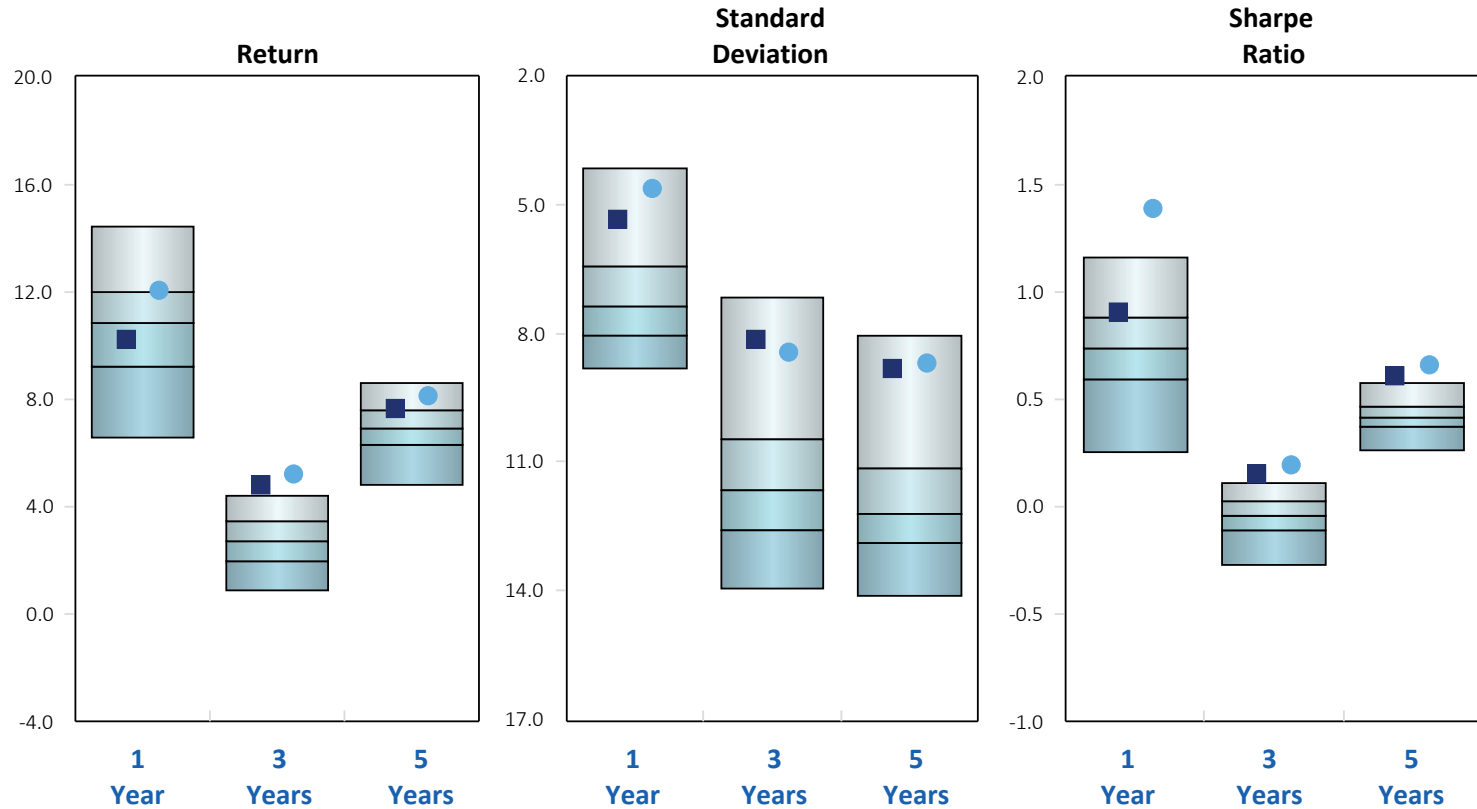
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS (H) Insurance Plan	10.36 (58)	4.86 (3)	7.52 (28)	5.29 (12)	8.06 (9)	8.84 (7)	0.94 (20)	0.16 (3)	0.59 (5)
● KERS (H) Insurance IPS Index	12.05 (25)	5.20 (3)	8.14 (13)	4.65 (7)	8.44 (10)	8.72 (7)	1.39 (1)	0.19 (3)	0.66 (2)
5th Percentile	14.47	4.41	8.61	4.17	7.15	8.05	1.16	0.11	0.58
1st Quartile	12.00	3.48	7.59	6.46	10.48	11.16	0.88	0.03	0.47
Median	10.88	2.70	6.95	7.37	11.68	12.22	0.74	-0.04	0.42
3rd Quartile	9.25	1.99	6.30	8.05	12.60	12.88	0.59	-0.11	0.37
95th Percentile	6.56	0.91	4.81	8.83	13.93	14.10	0.25	-0.27	0.26

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis - Multi Statistics

SPRS Insurance Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



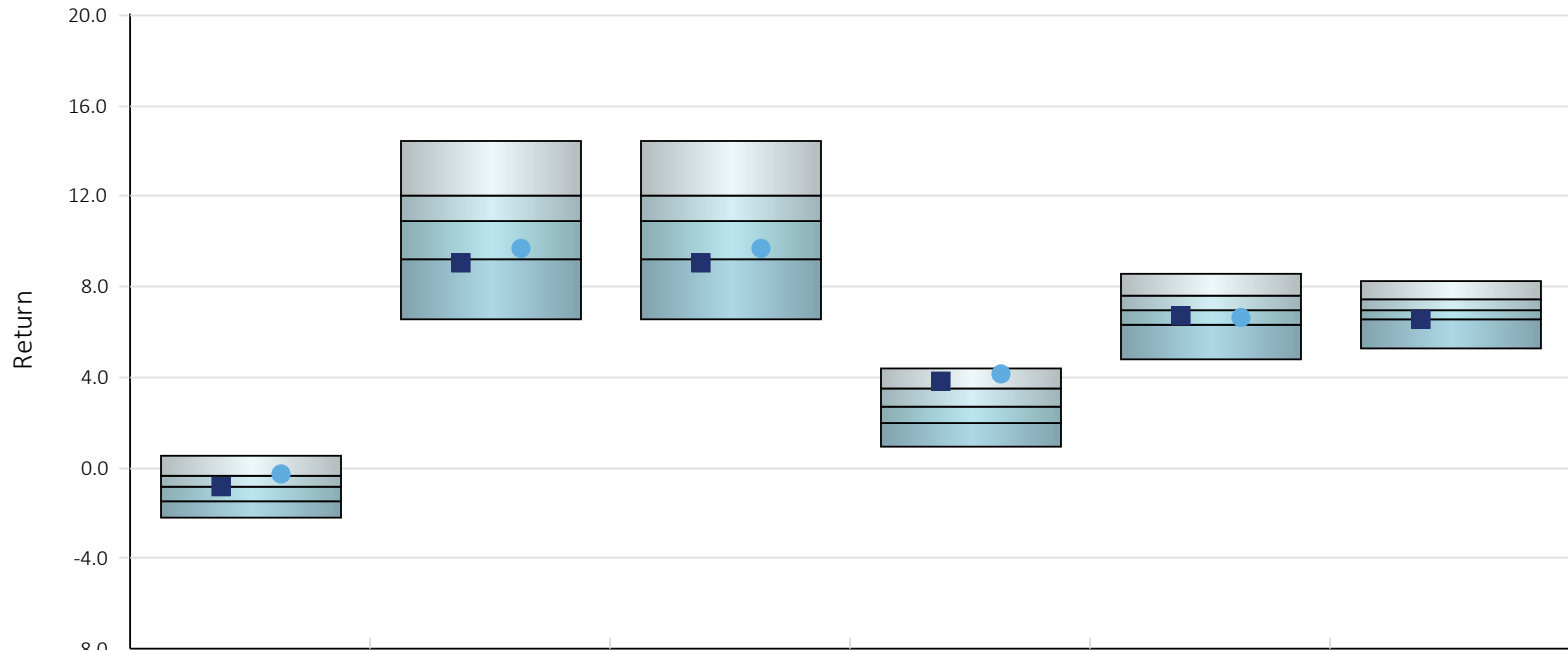
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ SPRS Insurance Plan	10.22 (61)	4.84 (4)	7.69 (22)	5.34 (13)	8.16 (9)	8.82 (7)	0.90 (23)	0.16 (3)	0.61 (4)
● SPRS Insurance IPS Index	12.05 (25)	5.20 (3)	8.14 (13)	4.65 (7)	8.44 (10)	8.72 (7)	1.39 (1)	0.19 (3)	0.66 (2)
5th Percentile	14.47	4.41	8.61	4.17	7.15	8.05	1.16	0.11	0.58
1st Quartile	12.00	3.48	7.59	6.46	10.48	11.16	0.88	0.03	0.47
Median	10.88	2.70	6.95	7.37	11.68	12.22	0.74	-0.04	0.42
3rd Quartile	9.25	1.99	6.30	8.05	12.60	12.88	0.59	-0.11	0.37
95th Percentile	6.56	0.91	4.81	8.83	13.93	14.10	0.25	-0.27	0.26

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis

KERS Pension Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



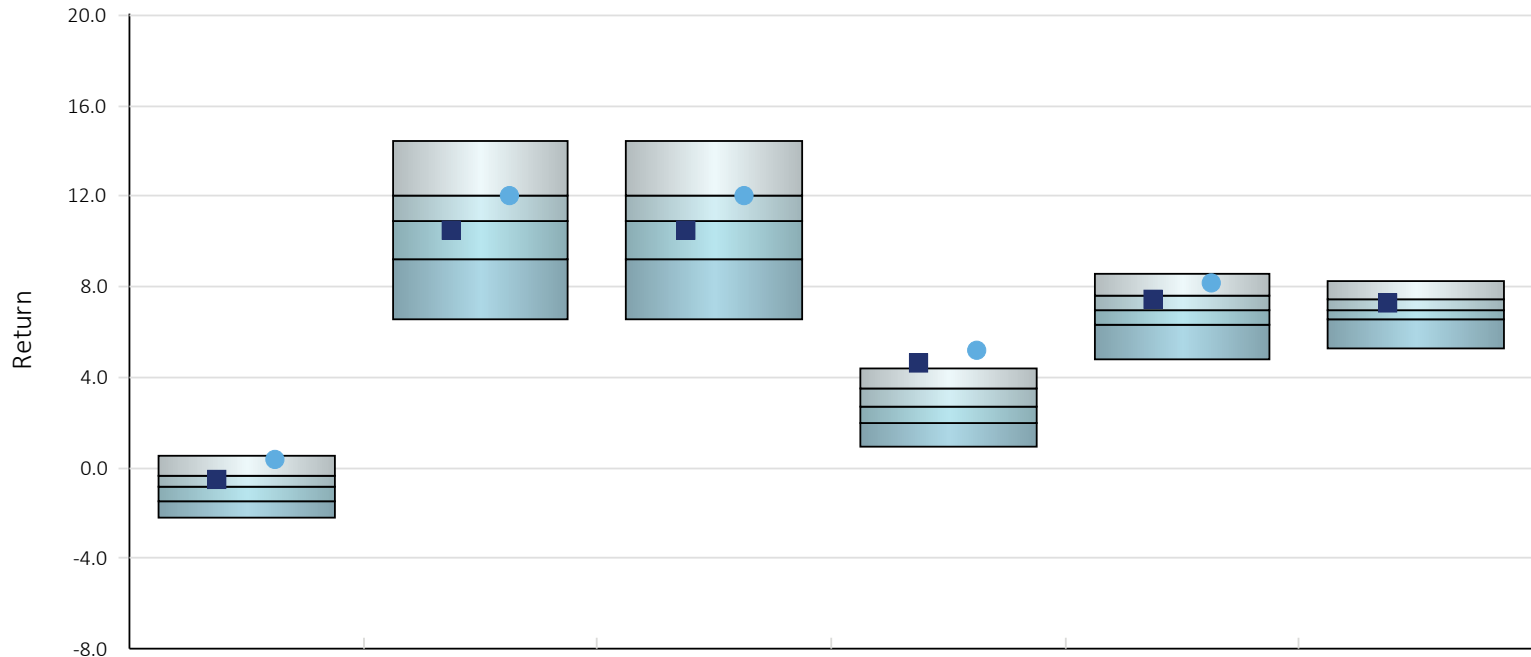
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS Pension Plan	-0.88 (51)	9.08 (77)	9.08 (77)	3.85 (16)	6.72 (60)	6.60 (73)
● KERS Pension IPS Index	-0.26 (23)	9.67 (72)	9.67 (72)	4.12 (9)	6.65 (63)	
5th Percentile	0.57	14.47	14.47	4.41	8.61	8.28
1st Quartile	-0.33	12.00	12.00	3.48	7.59	7.48
Median	-0.88	10.88	10.88	2.70	6.95	6.99
3rd Quartile	-1.45	9.25	9.25	1.99	6.30	6.54
95th Percentile	-2.24	6.56	6.56	0.91	4.81	5.29
Population	582	570	570	546	527	447

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis

KERS (H) Pension Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



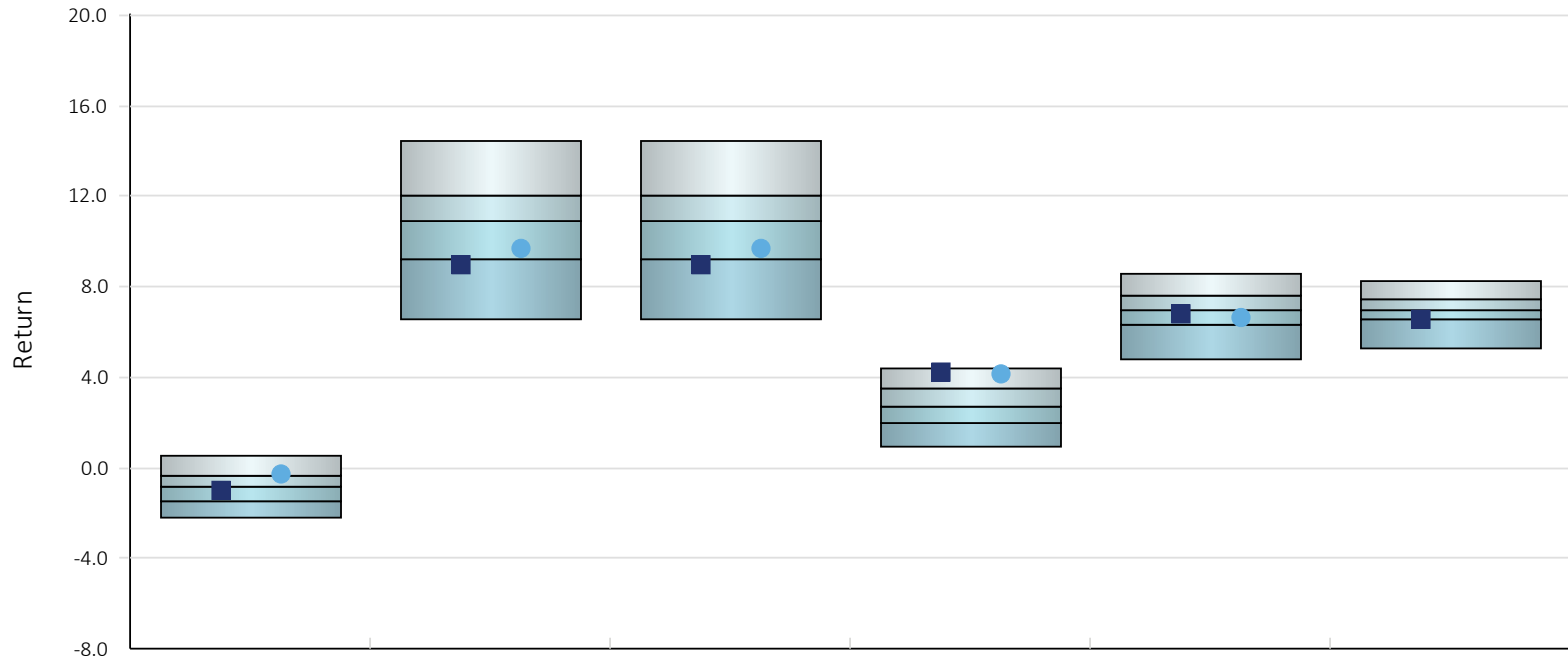
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS (H) Pension Plan	-0.51 (35)	10.49 (57)	10.49 (57)	4.64 (5)	7.47 (30)	7.32 (32)
● KERS (H) Pension IPS Index	0.33 (7)	12.05 (25)	12.05 (25)	5.20 (3)	8.14 (13)	
5th Percentile	0.57	14.47	14.47	4.41	8.61	8.28
1st Quartile	-0.33	12.00	12.00	3.48	7.59	7.48
Median	-0.88	10.88	10.88	2.70	6.95	6.99
3rd Quartile	-1.45	9.25	9.25	1.99	6.30	6.54
95th Percentile	-2.24	6.56	6.56	0.91	4.81	5.29
Population	582	570	570	546	527	447

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis

SPRS Pension Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



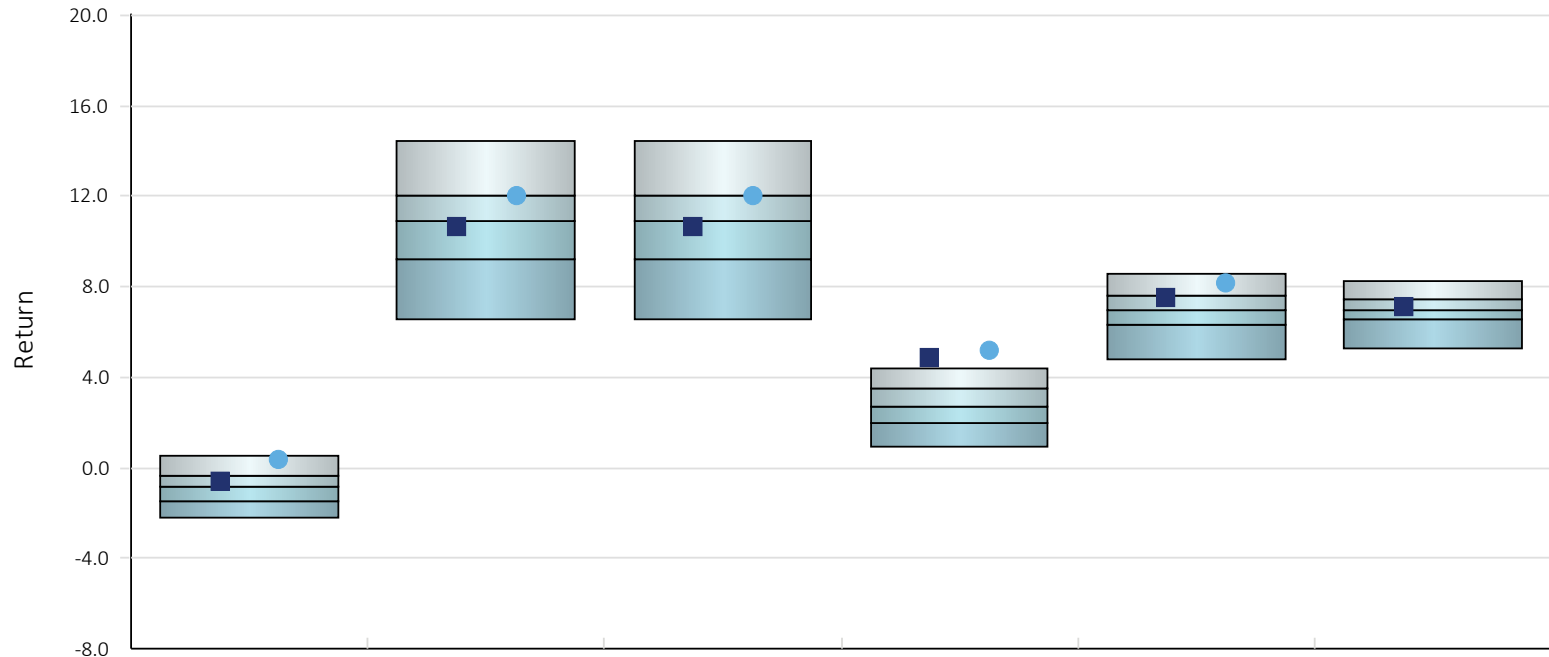
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ SPRS Pension Plan	-0.97 (54)	8.96 (78)	8.96 (78)	4.20 (8)	6.78 (58)	6.60 (73)
● SPRS Pension IPS Index	-0.26 (23)	9.67 (72)	9.67 (72)	4.12 (9)	6.65 (63)	
5th Percentile	0.57	14.47	14.47	4.41	8.61	8.28
1st Quartile	-0.33	12.00	12.00	3.48	7.59	7.48
Median	-0.88	10.88	10.88	2.70	6.95	6.99
3rd Quartile	-1.45	9.25	9.25	1.99	6.30	6.54
95th Percentile	-2.24	6.56	6.56	0.91	4.81	5.29
Population	582	570	570	546	527	447

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis

KERS Insurance Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



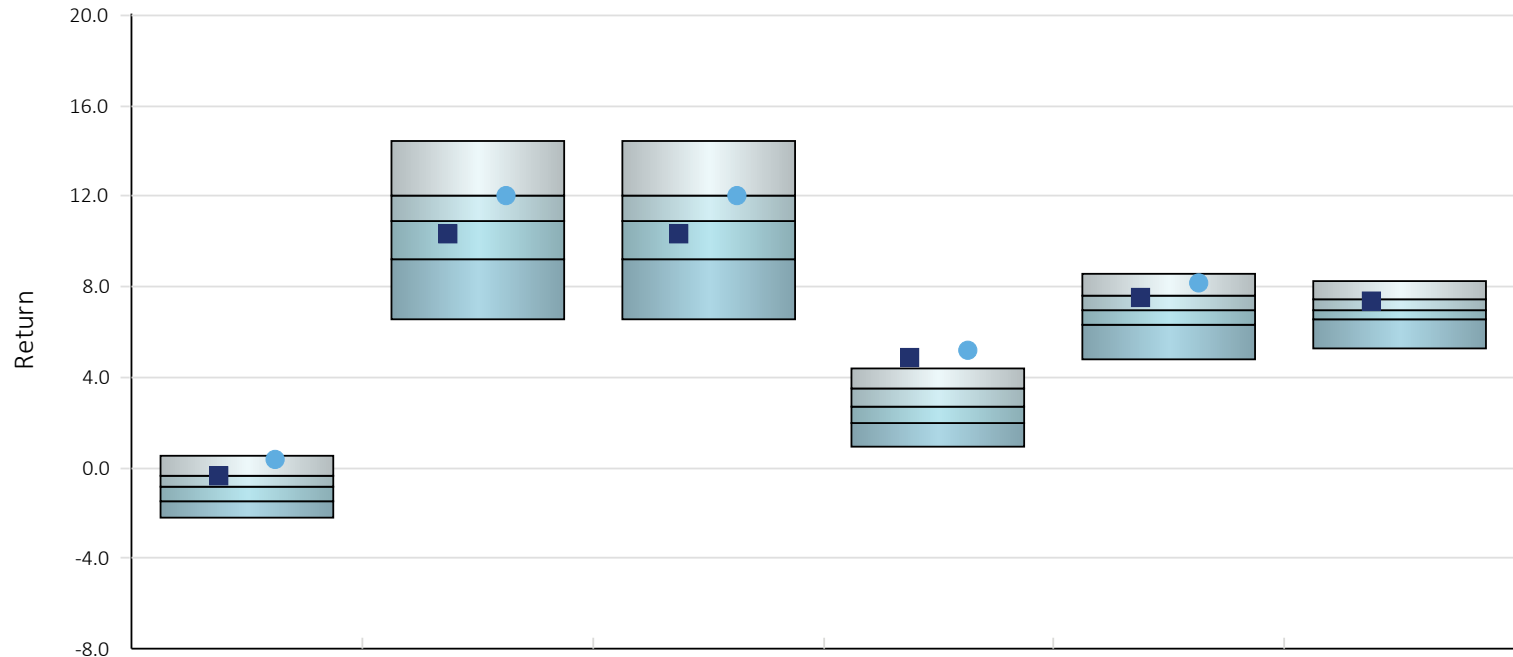
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS Insurance Plan	-0.62 (40)	10.70 (53)	10.70 (53)	4.85 (3)	7.55 (26)	7.14 (42)
● KERS Insurance IPS Index	0.33 (7)	12.05 (25)	12.05 (25)	5.20 (3)	8.14 (13)	
5th Percentile	0.57	14.47	14.47	4.41	8.61	8.28
1st Quartile	-0.33	12.00	12.00	3.48	7.59	7.48
Median	-0.88	10.88	10.88	2.70	6.95	6.99
3rd Quartile	-1.45	9.25	9.25	1.99	6.30	6.54
95th Percentile	-2.24	6.56	6.56	0.91	4.81	5.29
Population	582	570	570	546	527	447

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis

KERS (H) Insurance Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



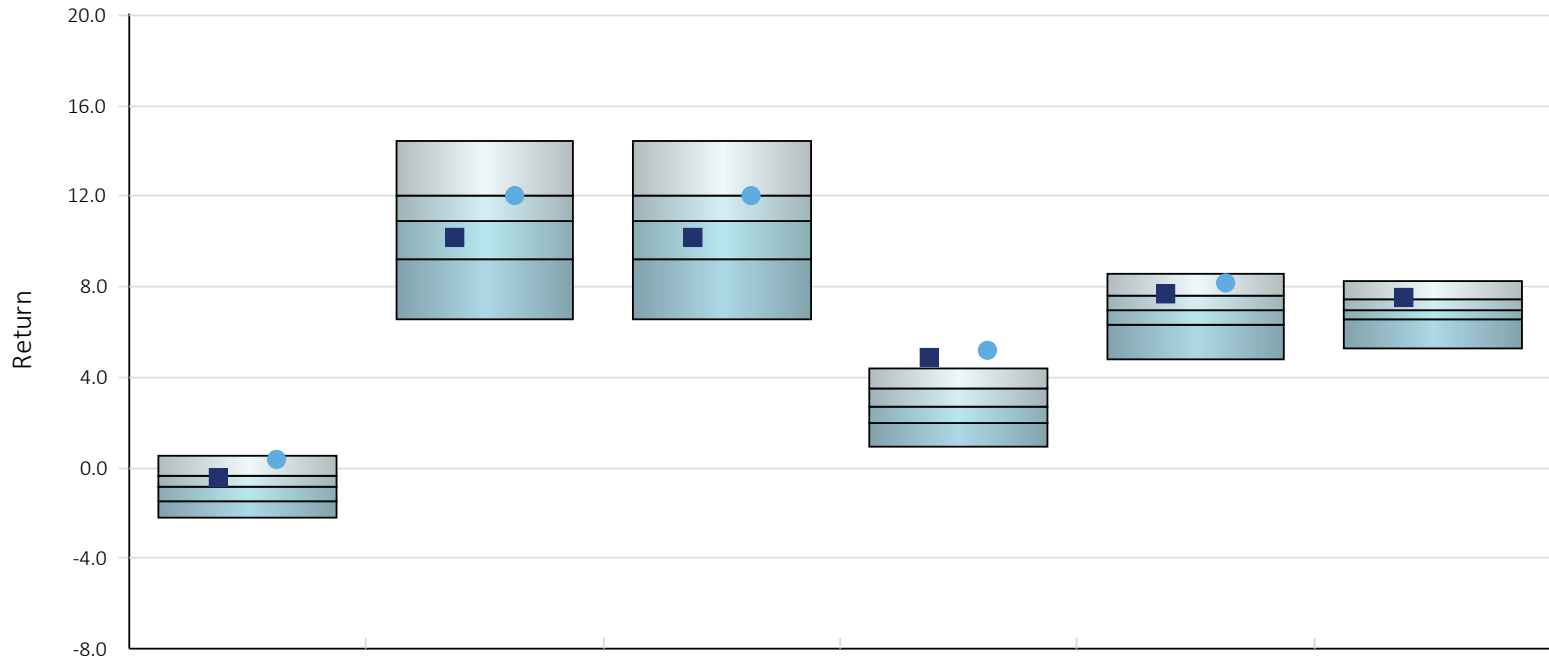
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS (H) Insurance Plan	-0.34 (26)	10.36 (58)	10.36 (58)	4.86 (3)	7.52 (28)	7.35 (30)
● KERS (H) Insurance IPS Index	0.33 (7)	12.05 (25)	12.05 (25)	5.20 (3)	8.14 (13)	
5th Percentile	0.57	14.47	14.47	4.41	8.61	8.28
1st Quartile	-0.33	12.00	12.00	3.48	7.59	7.48
Median	-0.88	10.88	10.88	2.70	6.95	6.99
3rd Quartile	-1.45	9.25	9.25	1.99	6.30	6.54
95th Percentile	-2.24	6.56	6.56	0.91	4.81	5.29
Population	582	570	570	546	527	447

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Peer Group Analysis

SPRS Insurance Plan vs All Public Plans-Total Fund

Periods Ended December 31, 2024



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ SPRS Insurance Plan	-0.41 (29)	10.22 (61)	10.22 (61)	4.84 (4)	7.69 (22)	7.53 (23)
● SPRS Insurance IPS Index	0.33 (7)	12.05 (25)	12.05 (25)	5.20 (3)	8.14 (13)	
5th Percentile	0.57	14.47	14.47	4.41	8.61	8.28
1st Quartile	-0.33	12.00	12.00	3.48	7.59	7.48
Median	-0.88	10.88	10.88	2.70	6.95	6.99
3rd Quartile	-1.45	9.25	9.25	1.99	6.30	6.54
95th Percentile	-2.24	6.56	6.56	0.91	4.81	5.29
Population	582	570	570	546	527	447

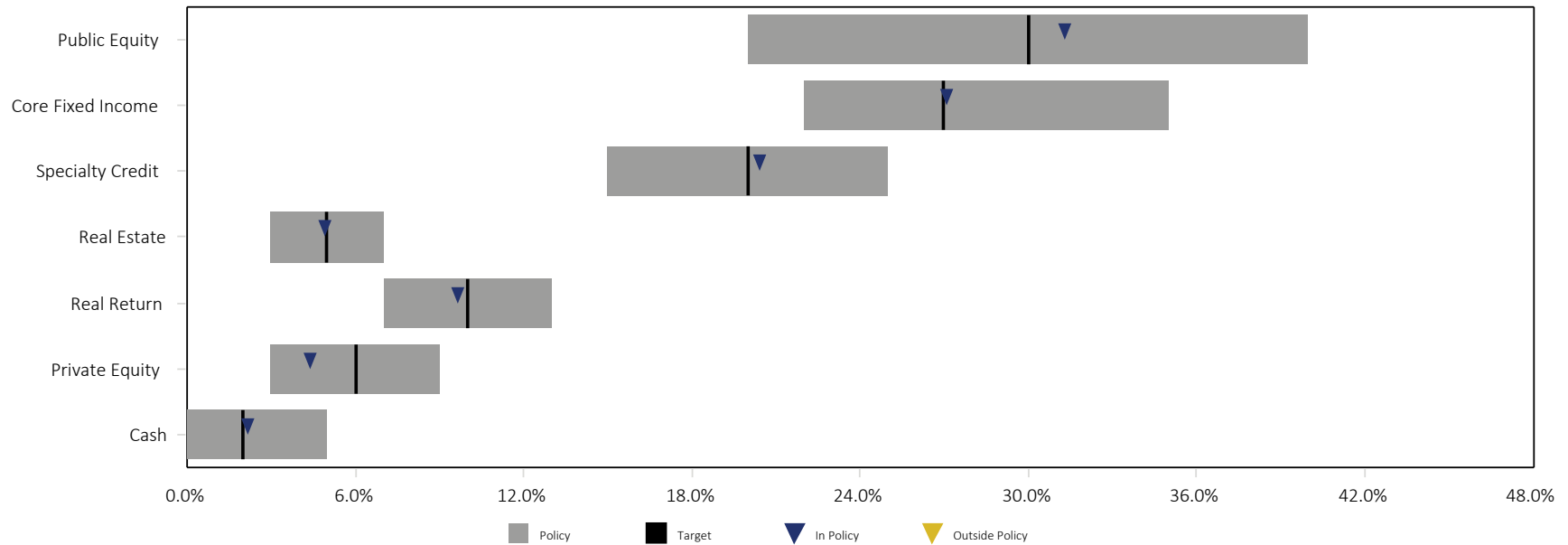
Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Asset Allocation Compliance

KERS Pension Plan

Periods Ended As of December 31, 2024

Executive Summary



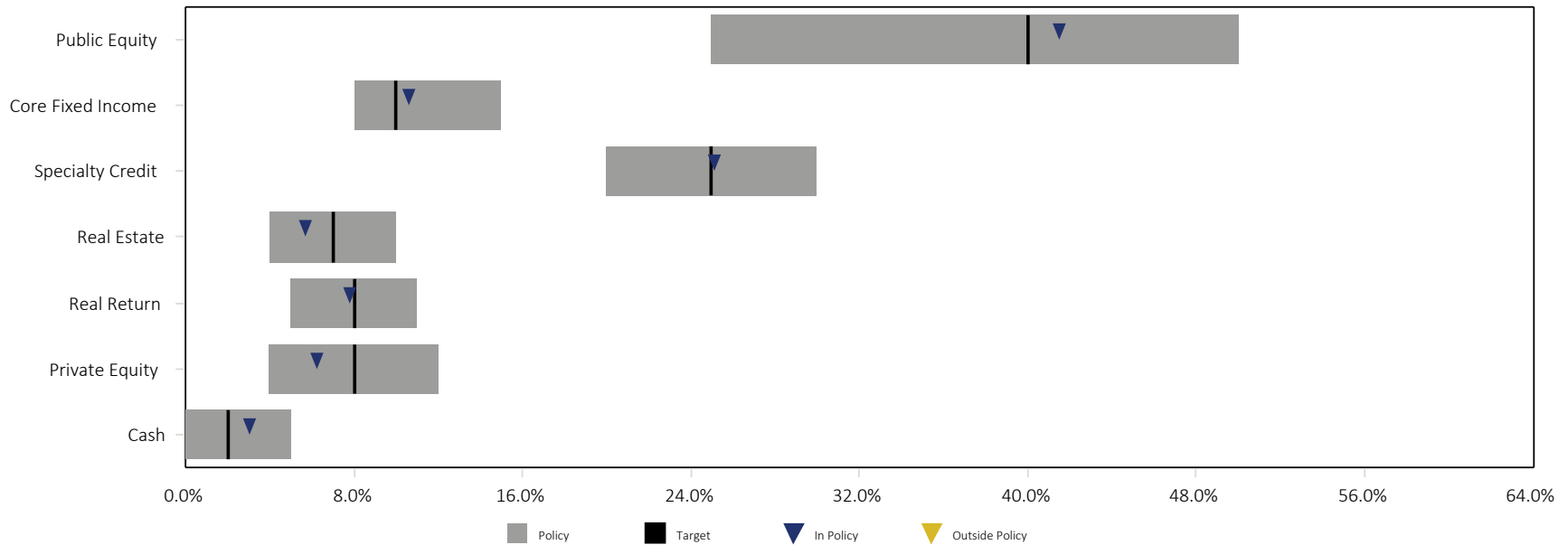
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	1,428,193,420	31.29	20.00	40.00	30.00	-59,038,899
Core Fixed Income	1,237,639,768	27.12	22.00	35.00	27.00	-5,400,699
Specialty Credit	932,686,930	20.44	15.00	25.00	20.00	-19,917,249
Real Estate	225,437,904	4.94	3.00	7.00	5.00	2,754,516
Real Return	439,863,142	9.64	7.00	13.00	10.00	16,521,698
Private Equity	200,813,308	4.40	3.00	9.00	6.00	73,017,596
Cash	99,213,932	2.17	0.00	5.00	2.00	-7,936,964
Total Fund	4,563,848,404	100.00			100.00	

Asset Allocation Compliance

KERS (H) Pension Plan

Periods Ended As of December 31, 2024

Executive Summary



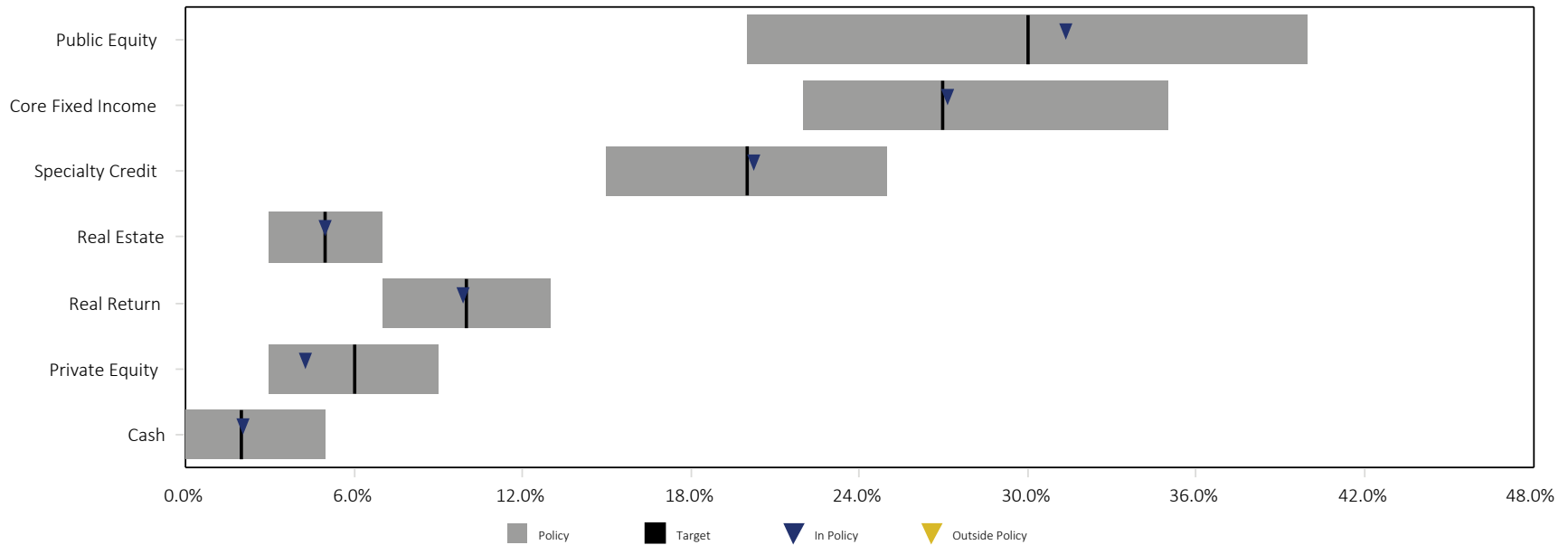
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	445,008,194	41.49	25.00	50.00	40.00	-15,955,938
Core Fixed Income	113,499,521	10.58	8.00	15.00	10.00	-6,236,457
Specialty Credit	269,279,072	25.10	20.00	30.00	25.00	-1,121,412
Real Estate	61,110,916	5.70	4.00	10.00	7.00	13,973,229
Real Return	83,855,669	7.82	5.00	11.00	8.00	1,954,782
Private Equity	67,087,442	6.25	4.00	12.00	8.00	18,723,010
Cash	32,789,828	3.06	0.00	5.00	2.00	-11,337,215
Total Fund	1,072,630,642	100.00			100.00	

Asset Allocation Compliance

SPRS Pension Plan

Periods Ended As of December 31, 2024

Executive Summary



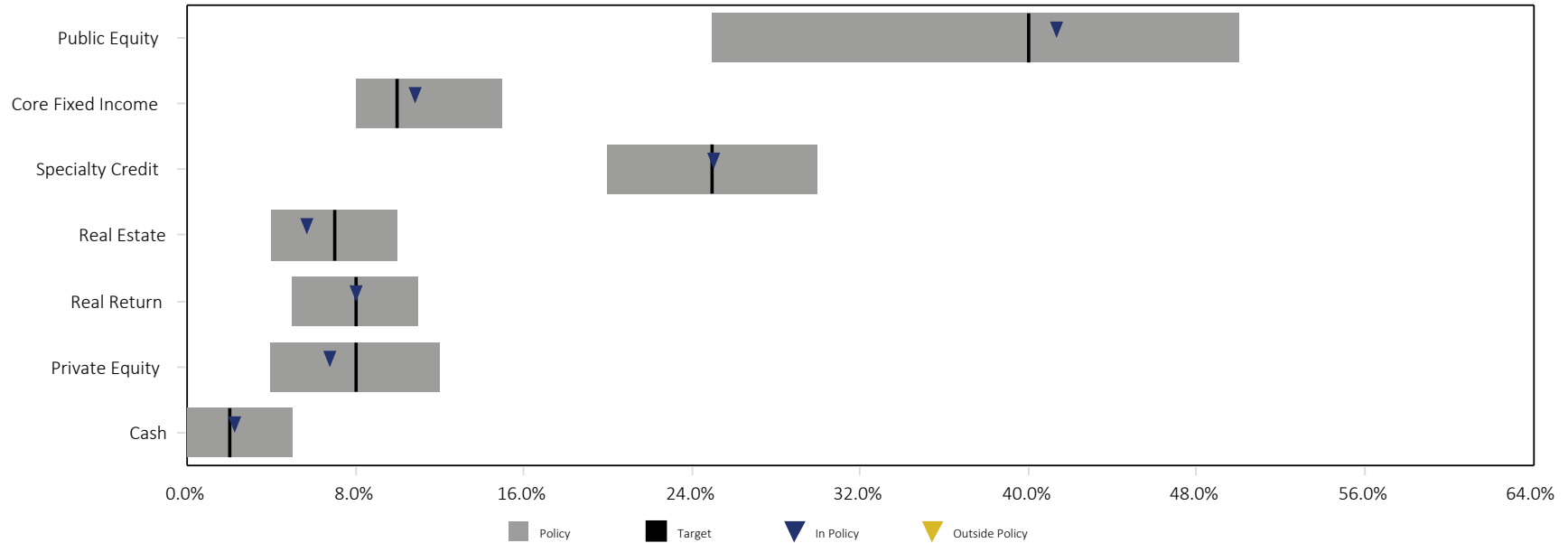
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	215,067,863	31.36	20.00	40.00	30.00	-9,329,022
Core Fixed Income	186,120,328	27.14	22.00	35.00	27.00	-955,372
Specialty Credit	139,012,659	20.27	15.00	25.00	20.00	-1,853,432
Real Estate	34,315,007	5.00	3.00	7.00	5.00	-25,200
Real Return	68,024,326	9.92	7.00	13.00	10.00	555,288
Private Equity	29,370,254	4.28	3.00	9.00	6.00	11,777,514
Cash	13,885,700	2.02	0.00	5.00	2.00	-169,777
Total Fund	685,796,136	100.00			100.00	

Asset Allocation Compliance

KERS Insurance Plan

Periods Ended As of December 31, 2024

Executive Summary



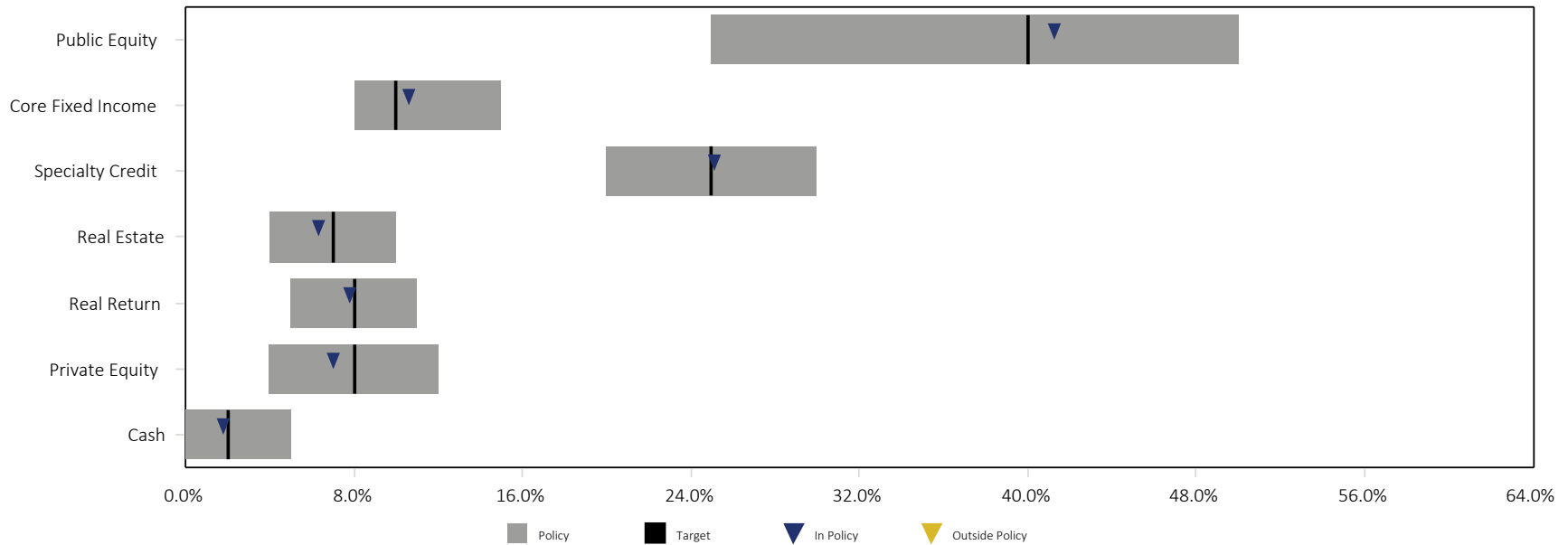
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	720,436,637	41.37	25.00	50.00	40.00	-23,930,516
Core Fixed Income	188,524,495	10.83	8.00	15.00	10.00	-14,397,965
Specialty Credit	435,653,717	25.02	20.00	30.00	25.00	-337,391
Real Estate	99,384,398	5.71	4.00	10.00	7.00	22,504,173
Real Return	139,589,089	8.02	5.00	11.00	8.00	-287,865
Private Equity	118,328,449	6.80	4.00	12.00	8.00	20,972,775
Cash	39,348,517	2.26	0.00	5.00	2.00	-4,523,211
Total Fund	1,741,265,302	100.00			100.00	

Asset Allocation Compliance

KERS (H) Insurance Plan

Periods Ended As of December 31, 2024

Executive Summary



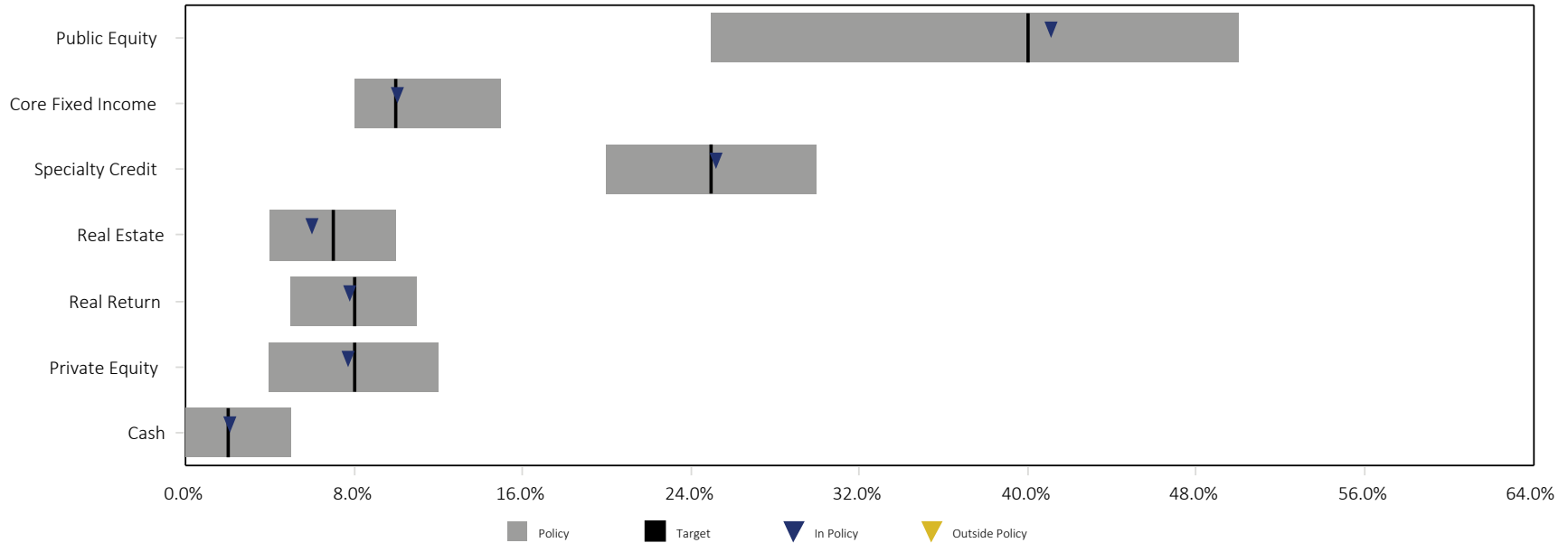
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	284,218,708	41.29	25.00	50.00	40.00	-8,872,089
Core Fixed Income	72,846,294	10.58	8.00	15.00	10.00	-4,009,639
Specialty Credit	173,029,178	25.14	20.00	30.00	25.00	-937,541
Real Estate	43,525,865	6.32	4.00	10.00	7.00	4,659,793
Real Return	53,817,086	7.82	5.00	11.00	8.00	1,252,238
Private Equity	48,479,671	7.04	4.00	12.00	8.00	6,589,653
Cash	12,449,746	1.81	0.00	5.00	2.00	1,317,585
Total Fund	688,366,547	100.00			100.00	

Asset Allocation Compliance

SPRS Insurance Plan

Periods Ended As of December 31, 2024

Executive Summary



	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	114,140,651	41.13	25.00	50.00	40.00	-3,126,025
Core Fixed Income	27,930,390	10.06	8.00	15.00	10.00	-176,734
Specialty Credit	69,916,325	25.19	20.00	30.00	25.00	-532,184
Real Estate	16,619,881	5.99	4.00	10.00	7.00	2,807,679
Real Return	21,608,455	7.79	5.00	11.00	8.00	594,470
Private Equity	21,545,147	7.76	4.00	12.00	8.00	657,779
Cash	5,775,717	2.08	0.00	5.00	2.00	-224,985
Total Fund	277,536,565	100.00			100.00	

Asset Allocation & Performance

Total Fund

Periods Ended December 31, 2024

	Market Value \$	Performance (%) net of fees										
		QTD	YTD	FYTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
KERS Pension Plan	4,563,848,404	-0.88	9.08	4.30	9.08	3.85	6.72	6.60	6.23	7.83	8.71	4/1/1984
KERS Pension IPS Index		-0.26	9.67	4.20	9.67	4.12	6.65					
Value Added		-0.61	-0.59	0.10	-0.59	-0.27	0.07					
Assumed Rate 5.25%		1.29	5.25	2.59	5.25	5.25	5.25					
Value Added		-2.17	3.83	1.71	3.83	-1.40	1.47					
KERS Insurance Plan	1,741,265,302	-0.62	10.70	4.76	10.70	4.85	7.55	7.14	6.16	7.17	7.39	4/1/1987
KERS Insurance IPS Index		0.33	12.05	4.83	12.05	5.20	8.14					
Value Added		-0.95	-1.36	-0.07	-1.36	-0.35	-0.59					
Assumed Rate 6.50%		1.59	6.50	3.20	6.50	6.50	6.50					
Value Added		-2.21	4.20	1.56	4.20	-1.65	1.05					
KERS (H) Pension Plan	1,072,630,642	-0.51	10.49	4.65	10.49	4.64	7.47	7.32	6.56	8.06	8.88	4/1/1984
KERS (H) Pension IPS Index		0.33	12.05	4.83	12.05	5.20	8.14					
Value Added		-0.84	-1.56	-0.18	-1.56	-0.56	-0.67					
Assumed Rate 6.25%		1.53	6.25	3.08	6.25	6.25	6.25					
Value Added		-2.04	4.24	1.57	4.24	-1.61	1.22					
KERS (H) Insurance Plan	688,366,547	-0.34	10.36	4.40	10.36	4.86	7.52	7.35	6.30	7.27	7.47	4/1/1987
KERS (H) Insurance IPS Index		0.33	12.05	4.83	12.05	5.20	8.14					
Value Added		-0.67	-1.69	-0.43	-1.69	-0.34	-0.62					
Assumed Rate 6.50%		1.59	6.50	3.20	6.50	6.50	6.50					
Value Added		-1.92	3.86	1.20	3.86	-1.64	1.02					

Asset Allocation & Performance

Total Fund

Periods Ended December 31, 2024

	Market Value \$	Performance (%) net of fees										
		QTD	YTD	FYTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
SPRS Pension Plan	685,796,136	-0.97	8.96	4.26	8.96	4.20	6.78	6.60	6.21	7.82	8.70	4/1/1984
SPRS Pension IPS Index		-0.26	9.67	4.20	9.67	4.12	6.65					
Value Added		-0.71	-0.71	0.06	-0.71	0.08	0.12					
Assumed Rate 5.25%		1.29	5.25	2.59	5.25	5.25	5.25					
Value Added		-2.26	3.71	1.67	3.71	-1.05	1.53					
SPRS Insurance Plan	277,536,565	-0.41	10.22	4.38	10.22	4.84	7.69	7.53	6.39	7.33	7.51	4/1/1987
SPRS Insurance IPS Index		0.33	12.05	4.83	12.05	5.20	8.14					
Value Added		-0.74	-1.83	-0.45	-1.83	-0.36	-0.45					
Assumed Rate 6.50%		1.59	6.50	3.20	6.50	6.50	6.50					
Value Added		-1.99	3.72	1.18	3.72	-1.66	1.19					

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Public Equity	-3.10	-1.55	15.21	5.03	15.21	4.41		5.65	12/1/2021
Public Equity Policy Index	-2.37	-0.99	17.49	5.56	17.49	5.44		6.63	
Value Added	-0.73	-0.56	-2.27	-0.53	-2.27	-1.03		-0.98	
US Equity Composite	-3.30	2.51	23.01	8.85	23.01	7.70	13.40	11.64	4/1/1984
Russell 3000 Index	-3.06	2.63	23.81	9.03	23.81	8.01	13.86	11.59	
Value Added	-0.24	-0.13	-0.80	-0.18	-0.80	-0.30	-0.46	0.05	
S&P 500 Index	-2.35	2.44	25.02	8.47	25.02	9.03	14.76	9.33	7/1/2001
S&P 500 Index	-2.38	2.41	25.02	8.44	25.02	8.94	14.53	8.97	
Value Added	0.03	0.03	0.00	0.03	0.00	0.09	0.23	0.36	
Scientific Beta	-5.78	-0.61	15.77	7.38	15.77	4.60	9.50	10.82	7/1/2016
S&P 500 Index	-2.38	2.41	25.02	8.44	25.02	8.94	14.53	14.89	
Value Added	-3.40	-3.02	-9.25	-1.06	-9.25	-4.34	-5.02	-4.07	
River Road FAV	-5.44	0.33	18.69	11.89	18.69	3.54	5.15	10.03	7/1/2016
Russell 3000 Value Index	-6.91	-1.94	13.98	7.35	13.98	5.41	8.60	9.71	
Value Added	1.48	2.27	4.71	4.54	4.71	-1.87	-3.45	0.32	
Westfield Capital	0.48	7.64	33.82	10.93	33.82	11.61	18.31	15.55	7/1/2011
Russell 3000 Growth Index	0.45	6.82	32.46	10.48	32.46	9.93	18.25	16.06	
Value Added	0.03	0.82	1.36	0.45	1.36	1.68	0.06	-0.51	
Internal US Mid Cap	-7.13	0.44	14.43	7.42	14.43	5.61	11.05	10.43	8/1/2014
S&P MidCap 400 Index	-7.12	0.34	13.93	7.31	13.93	4.87	10.34	9.96	
Value Added	-0.01	0.09	0.51	0.10	0.51	0.74	0.71	0.48	
NTGI Structured	-8.05	-1.02	12.07	8.15	12.07	3.66	9.41	9.98	10/1/1999
Russell 2000 Index	-8.26	0.33	11.54	9.64	11.54	1.24	7.40	8.20	
Value Added	0.21	-1.35	0.53	-1.49	0.53	2.42	2.01	1.78	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Next Century Growth	-6.33	13.08	24.98	17.30	24.98	-0.44	20.91	21.97	11/1/2019
Russell Microcap Growth Index	-4.28	11.55	21.91	21.11	21.91	-2.24	5.72	8.41	
Value Added	-2.05	1.53	3.07	-3.81	3.07	1.80	15.19	13.56	
Non-US Equity Composite	-2.72	-7.80	3.77	-0.93	3.77	-0.48	4.08	3.72	7/1/2000
MSCI ACWI ex US IMI (10/17)	-1.97	-7.61	5.23	-0.05	5.23	0.50	4.12	3.75	
Value Added	-0.75	-0.19	-1.47	-0.88	-1.47	-0.98	-0.05	-0.03	
BlackRock World Ex US	-2.91	-7.61	4.78	-0.42	4.78	2.32	5.51	6.55	7/1/2009
MSCI World ex US (11/19)	-2.68	-7.43	4.70	-0.24	4.70	1.91	5.10	6.27	
Value Added	-0.22	-0.19	0.08	-0.18	0.08	0.41	0.41	0.28	
American Century	-2.92	-7.89	5.27	-1.45	5.27	-5.39	4.22	5.35	7/1/2014
MSCI ACWI ex US IMI (10/17)	-1.97	-7.61	5.23	-0.05	5.23	0.50	4.12	3.76	
Value Added	-0.95	-0.29	0.04	-1.40	0.04	-5.88	0.09	1.59	
Franklin Templeton	-4.44	-7.53	-1.40	-2.37	-1.40	-8.23	-0.67	3.70	7/1/2014
MSCI ACWI ex US IMI (10/17)	-1.97	-7.61	5.23	-0.05	5.23	0.50	4.12	3.76	
Value Added	-2.47	0.08	-6.63	-2.33	-6.63	-8.72	-4.79	-0.07	
Lazard Asset Mgmt	-3.14	-8.85	2.37	-2.49	2.37	0.85	3.81	4.27	7/1/2014
MSCI ACWI ex US IMI (10/17)	-1.97	-7.61	5.23	-0.05	5.23	0.50	4.12	3.76	
Value Added	-1.17	-1.25	-2.86	-2.44	-2.86	0.36	-0.31	0.51	
LSV Asset Mgmt	-2.00	-8.07	3.45	-0.59	3.45	4.25	4.81	4.18	7/1/2014
MSCI ACWI ex US IMI (10/17)	-1.97	-7.61	5.23	-0.05	5.23	0.50	4.12	3.76	
Value Added	-0.03	-0.46	-1.78	-0.55	-1.78	3.76	0.68	0.42	
Axiom	-0.64	-3.01	13.01	5.23	13.01	-5.89		-4.37	12/1/2021
MSCI AC World ex USA Small Cap (Net)	-2.13	-7.66	3.36	0.56	3.36	-1.47		-0.09	
Value Added	1.49	4.65	9.66	4.66	9.66	-4.43		-4.28	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
JP Morgan Emerging Markets	-0.83	-6.62	1.46	-1.54	1.46	-7.49	0.58	1.66	11/1/2019
MSCI Emerging Markets IMI Index	-0.22	-7.73	7.62	0.01	7.62	-0.95	2.93	4.22	
Value Added	-0.60	1.11	-6.16	-1.55	-6.16	-6.54	-2.35	-2.57	
Pzena Emerging Markets	-2.19	-9.63	6.95	0.59	6.95	7.11	7.26	8.34	11/1/2019
MSCI Emerging Markets (Net)	-0.14	-8.01	7.50	0.02	7.50	-1.92	1.70	3.04	
Value Added	-2.05	-1.62	-0.55	0.57	-0.55	9.03	5.56	5.30	
Private Equity Composite	0.88	1.02	4.07	3.22	4.07	3.84	11.61	11.34	7/1/2002
Russell 3000 +3% 1 Quarter Lag	2.32	7.02	39.25	11.28	39.25	13.60	18.72	12.83	
Value Added	-1.44	-6.00	-35.18	-8.05	-35.18	-9.76	-7.11	-1.49	
Core Fixed Composite	-1.62	-2.92	1.76	2.06	1.76	0.93	1.85	2.83	10/1/2018
Blmbg. U.S. Aggregate Index	-1.64	-3.06	1.25	1.98	1.25	-2.41	-0.33	1.34	
Value Added	0.02	0.14	0.51	0.09	0.51	3.34	2.17	1.48	
Loomis Sayles	-1.60	-2.79	1.99	2.18	1.99	-0.82	0.68	1.57	2/1/2019
Blmbg. U.S. Aggregate Index (Since 8/1/23)	-1.64	-3.06	1.25	1.98	1.25	-1.20	0.11	1.05	
Value Added	0.03	0.28	0.74	0.21	0.74	0.37	0.58	0.52	
Lord Abbett	0.56	1.58	8.30	3.48	8.30	2.67	2.39	2.95	10/1/2018
ICE BofA 1-3 Year U.S. Corporate Index	0.22	0.21	5.40	3.37	5.40	2.22	2.15	2.71	
Value Added	0.34	1.37	2.90	0.10	2.90	0.45	0.24	0.23	
NISA	-1.59	-2.92	1.66	1.96	1.66	-1.91	0.21	2.96	2/1/2009
Blmbg. U.S. Aggregate Index	-1.64	-3.06	1.25	1.98	1.25	-2.41	-0.33	2.66	
Value Added	0.05	0.15	0.41	-0.02	0.41	0.50	0.53	0.30	
Internal Core Fixed Income	-1.68	-3.08	1.34	2.04	1.34			4.23	9/1/2023
Blmbg. U.S. Aggregate Index	-1.64	-3.06	1.25	1.98	1.25			4.03	
Value Added	-0.04	-0.02	0.09	0.06	0.09			0.20	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Cash Composite	0.39	1.21	5.34	2.55	5.34	3.82	2.42	3.39	1/1/1988
FTSE 3 Month T-Bill	0.39	1.23	5.45	2.61	5.45	4.05	2.54	3.02	
Value Added	0.00	-0.02	-0.11	-0.07	-0.11	-0.23	-0.12	0.37	
High Yield / Specialty Credit Composite	1.01	2.23	11.05	5.39	11.05	7.30	7.12	7.04	10/1/2018
Policy Index	0.07	1.22	8.59	4.92	8.59	5.00	5.07	5.17	
Value Added	0.94	1.01	2.46	0.47	2.46	2.30	2.05	1.87	
Arrowmark	1.73	3.20	15.13	7.04	15.13	13.39	11.55	11.16	6/1/2018
Morningstar LSTA U.S. Leveraged Loan	0.57	2.27	8.96	4.36	8.96	7.00	5.86	5.49	
Value Added	1.16	0.93	6.18	2.68	6.18	6.38	5.69	5.68	
Cerberus Capital Mgmt	0.48	0.88	6.06	2.13	6.06	8.00	9.83	9.13	9/1/2014
Morningstar LSTA U.S. Leveraged Loan	0.57	2.27	8.96	4.36	8.96	7.00	5.86	4.87	
Value Added	-0.08	-1.39	-2.90	-2.23	-2.90	1.00	3.97	4.27	
Columbia	-0.37	0.13	7.86	4.72	7.86	3.29	4.10	6.04	11/1/2011
Blmbg. U.S. Corp: High Yield Index	-0.43	0.17	8.19	5.47	8.19	2.92	4.21	5.87	
Value Added	0.05	-0.05	-0.33	-0.75	-0.33	0.38	-0.12	0.17	
Manulife Asset Mgmt	-0.24	-0.25	5.76	4.17	5.76	2.03	3.80	4.10	12/1/2011
Policy Index	-1.51	-2.73	2.04	2.32	2.04	-1.95	0.06	1.32	
Value Added	1.27	2.48	3.72	1.85	3.72	3.98	3.74	2.78	
Marathon Bluegrass	0.51	3.65	12.95	6.74	12.95	3.54	6.12	6.23	1/1/2016
Blmbg. U.S. Corp: High Yield Index	-0.43	0.17	8.19	5.47	8.19	2.92	4.21	6.30	
Value Added	0.93	3.47	4.76	1.27	4.76	0.62	1.90	-0.07	
Shenkman Capital	-0.33	1.90	7.95	4.51	7.95	5.97	5.05	4.87	10/1/2010
Morningstar LSTA U.S. Leveraged Loan	0.57	2.27	8.96	4.36	8.96	7.00	5.86	5.09	
Value Added	-0.90	-0.36	-1.00	0.15	-1.00	-1.03	-0.81	-0.22	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Waterfall	0.94	2.65	12.77	4.35	12.77	7.41	5.82	9.50	2/1/2010
Policy Index	-0.10	0.79	8.05	4.67	8.05	4.04	4.19	4.89	
Value Added	1.03	1.85	4.72	-0.32	4.72	3.37	1.64	4.61	
Real Estate Composite	-0.80	-0.88	-4.51	0.81	-4.51	0.36	5.08	6.06	7/1/1984
NCREIF ODCE NOF 1 Quarter Lag	0.02	0.02	-8.04	-0.64	-8.04	-1.04	2.05		
Value Added	-0.82	-0.91	3.52	1.45	3.52	1.40	3.03		
Internal Real Estate	-8.17	-8.36	4.69	7.32	4.69			5.35	12/1/2023
Baring	1.19	-4.23	-25.40	-5.38	-25.40	-22.10	-8.20	-2.54	1/1/2019
Barings Euro RE II	-7.31	-12.22	-5.89	-1.37	-5.89	-18.19		-20.55	12/1/2020
Divcowest IV	-15.23	-15.23	-17.33	-13.57	-17.33	-0.87	3.28	12.72	3/1/2014
Fundamental Partners III	0.35	0.35	0.09	1.15	0.09	5.39	11.12	10.62	5/1/2017
Greenfield Acq VI									12/1/2012
Greenfield Acq VII	0.17	0.17	-0.67	7.87	-0.67	7.53	11.53	11.03	7/1/2013
Lubert Adler VII	-0.61	-0.61	-19.24	-1.73	-19.24	-10.70	-9.77	-4.49	7/1/2014
Lubert Adler VII B	4.41	4.41	4.00	-0.18	4.00	11.26	17.58	13.15	7/1/2017
Mesa West Core Lend	1.27	1.27	-6.31	2.20	-6.31	-2.00	0.90	4.34	5/1/2013
Mesa West IV	-1.32	-1.32	-13.85	-5.83	-13.85	-10.81	-3.57	-0.39	3/1/2017
Harrison Street	0.00	0.21	-4.40	0.66	-4.40	2.06	3.58	6.48	5/1/2012
Patron Capital	0.62	-4.81	-5.21	-1.12	-5.21	-3.68	0.48	1.66	8/1/2016
Perimeter Park	0.00	0.00	6.48	6.48	6.48	6.43	7.15	3.73	4/1/1999
Prologis Targeted US	0.00	1.49	-2.89	2.59	-2.89	4.95	11.62	13.59	10/1/2014

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Rubenstein PF II	-5.77	-5.77	-47.10	-18.53	-47.10	-40.08	-27.56	-7.14	7/1/2013
Stockbridge Sm/Mkts	0.17	0.17	0.01	0.80	0.01	1.60	4.75	6.99	5/1/2014
Walton St RE VI	0.20	0.20	-5.39	-4.16	-5.39	7.12	3.82	-9.93	5/1/2009
Walton St RE VII	0.13	0.13	-5.62	-6.87	-5.62	-6.72	-5.59	2.56	7/1/2013
Real Return Composite	-2.81	3.73	18.87	10.66	18.87	12.21	9.90	6.11	7/1/2011
US CPI + 3%	0.64	1.70	5.98	2.99	5.98	7.32	7.32	5.67	
Value Added	-3.46	2.03	12.88	7.67	12.88	4.89	2.57	0.44	
Internal Real Return	-8.39	-4.90	13.11	7.40	13.11			11.60	12/1/2023
Internal TIPS	0.39	1.20	5.31	2.54	5.31	4.03	2.55	4.25	5/1/2002
Blmbg. U.S. TIPS 1-10 Year	-0.88	-1.75	3.09	1.69	3.09	-0.10	2.69	3.82	
Value Added	1.27	2.95	2.21	0.85	2.21	4.14	-0.14	0.43	
Tortoise Capital	-6.71	13.67	46.78	20.48	46.78	33.16	18.83	12.13	8/1/2009
Alerian MLP Index	-7.19	4.94	24.41	5.70	24.41	27.27	15.56	8.81	
Value Added	0.47	8.73	22.37	14.79	22.37	5.90	3.28	3.32	
Arctos Sports II	1.34	1.34	0.13	28.03	0.13			39.67	5/1/2023
Arctos Sports II Co-Inv	5.46	5.46	32.94	23.64	32.94			27.64	11/1/2023
Amerra AGRI Fund II	0.19	0.19	-14.33	-2.78	-14.33	1.41	2.94	4.18	12/1/2012
Amerra AGRI Holdings	-1.40	-1.40	-7.34	-2.21	-7.34	-6.65	-5.03	-3.19	8/1/2015
Blackstone Strat Opp	0.03	-3.38	-1.70	-2.42	-1.70	-2.57	-4.37	-2.94	8/1/2017
BTG Pactual	35.73	35.73	28.69	25.59	28.69	20.13	12.36	2.23	12/1/2014
Ceres Farms	0.00	0.00						0.00	10/1/2024
IFM Infrastructure	3.98	3.98	3.27	3.98	3.27	5.92	5.15	5.21	7/1/2019

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended December 31, 2024

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Magnetar MTP EOF II	0.00	27.08	194.73	104.80	194.73	117.78	76.35	37.41	8/1/2015
Maritime Partners	1.04	1.04	9.04	4.57	9.04			7.17	10/1/2023
Luxor Capital	-0.02	1.05	3.79	1.00	3.79	1.54	-1.13	0.07	4/1/2014
Oberland Capital	4.06	4.06	58.36	50.89	58.36	24.33	21.35	17.03	10/1/2014
Pine River	0.00	0.00	21.93	9.48	21.93	0.63	1.94	3.30	5/1/2014
PRISMA Capital	0.37	1.19	5.13	2.49	5.13	2.85	1.81	2.71	9/1/2011
SABA Capital	-4.18	-2.19		4.73				11.59	4/1/2024
SVP Project Spurs	0.00							0.00	12/1/2024
Taurus Mine Finance	1.33	1.33	14.32	3.01	14.32	29.58	14.42	14.24	4/1/2015
Tricadia Select	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-3.43	9/1/2017
TPF II	-0.41	-0.41	26.90	-1.53	26.90	15.83	6.48	0.50	10/1/2008

Kentucky Retirement Systems

Capital Calls and Distributions

Quarter Ending: December 31, 2024

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority
Capital Calls and Distributions
For the period October 1, 2024 thru December 31, 2024

Pension Funds Managers	Total Pension Funds Commitments	Kentucky Employees Retirement System				Kentucky Employees Hazardous Retirement System				State Police Employees Retirement System						
		Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation
Adams Street SPC II A1	175,000,000	31,747,734	27,049,088	0	1,004,576	26,044,512	9,441,066	8,044,794	0	298,739	7,745,055	3,936,882	3,354,226	0	124,573	3,229,653
Adams Street SPC II B1	175,000,000	31,747,734	25,236,265	0	766,350	24,469,914	9,441,067	7,504,701	0	227,895	7,276,806	3,936,882	3,129,426	0	95,031	3,034,395
Adams Street SPC III A1	174,750,000	40,996,273	6,747,969	5,377,992	3,350,746	8,775,216	9,506,480	1,564,763	1,247,084	776,993	2,034,854	4,001,820	658,668	524,969	327,081	856,586
Adams Street SPC III B1	174,750,000	40,996,277	2,395,880	6,362,219	2,330,790	6,427,309	9,506,480	555,572	1,475,312	540,479	1,490,406	4,001,833	233,873	621,045	227,519	627,399
AMERRA Agri Fund II, LP	40,100,000	0	0	0	0	0	2,477,739	957,953	1,516	84,239	875,230	1,253,605	484,674	767	42,620	442,820
AMERRA-KRS Agri Holding Company, LP	65,000,000	0	0	0	0	0	4,016,284	2,026,230	0	199,815	1,826,415	2,032,029	1,025,166	0	101,096	924,070
Arcano KRS Fund I, L.P.	36,000,000	13,050,524	4,589,765	0	0	4,589,765	1,650,419	580,439	0	0	580,439	859,011	302,107	0	0	302,107
Arcos Sports Partners Fund II	85,000,000	19,500,000	2,649,802	250,840	6,935,877	500,000	116,331	67,944	6,432	177,843	5,000,000	1,163,311	679,437	64,318	1,778,430	
Arcos Sports Partners Fund II Co-Investments LP	85,000,000	19,500,000	12,634,174	0	14,855,687	500,000	323,953	56,962	0	380,915	5,000,000	3,239,532	569,619	0	3,809,151	
Ares Special Situations Fund IV, L.P.	26,192,000	0	0	0	0	0	1,622,790	1,239,419	0	119,637	1,119,782	511,579	390,723	0	37,715	353,008
Baring's Euro Real Estate II	154,030,625	28,772,923	8,467,043	4,885,632	0	12,607,551	7,870,967	2,316,199	1,336,487	0	3,448,854	3,327,062	979,059	564,934	0	1,457,832
Baring's Real Estate European Value Add I SGP	108,727,500	20,310,298	6,934,773	328,417	0	6,757,236	5,555,577	1,897,040	89,840	0	1,848,473	2,348,514	801,880	37,975	0	781,351
Bay Hills Capital I, L.P.	67,500,000	24,469,733	2,230,126	0	0	2,230,126	3,094,535	282,030	0	0	282,030	1,610,645	146,791	0	0	146,791
Bay Hills Capital III, L.P.	51,250,000	0	0	0	0	0	3,175,230	3,075,804	0	0	3,075,804	1,001,010	969,638	0	0	969,638
Bay Hills Emerging Partners II LP	45,000,000	16,313,156	32,275,045	0	0	32,275,045	2,063,023	4,081,624	0	0	4,081,624	1,073,764	2,124,406	0	0	2,124,406
Bay Hills Emerging Partners II-B LP	45,000,000	16,313,156	21,125,592	0	0	21,125,592	2,063,023	2,671,622	0	0	2,671,622	1,073,764	1,390,527	0	0	1,390,527
BDCM Opportunity Fund IV, L.P.	35,580,000	0	0	0	0	0	2,204,447	3,534,615	0	4,066	3,530,548	694,947	1,114,280	1,282	0	1,112,998
Blackstone Capital Partners V, L.P.	47,174,735	17,101,529	7,323	0	0	7,323	2,162,724	926	0	0	926	1,125,656	482	0	0	482
Blackstone Capital Partners VI, L.P.	60,000,000	0	0	0	0	0	3,299,994	787,725	0	12,722	775,004	0	0	0	0	0
Blue Torch Credit Opportunities Fund II LP	140,000,000	25,536,966	29,107,235	0	29,107,235	7,618,631	8,745,419	0	0	8,745,419	3,143,324	3,608,219	0	0	0	3,608,219
BSF Co-Invest Vehicle K LP	37,262,028	5,527,207	5,905,943	0	154,569	5,751,374	1,985,263	2,121,374	0	55,518	2,065,779	513,102	548,261	0	14,949	533,912
BSF Private Credit Fund	100,000,000	14,833,350	13,136,398	0	337,833	12,798,566	5,327,845	4,718,333	0	121,343	4,596,990	1,377,012	1,213,600	0	31,362	1,185,118
BTF Pactical Brazil Timberland Fund I	34,500,000	0	0	0	0	0	2,056,030	1,196,954	0	71,498	1,125,456	952,485	553,967	0	33,060	520,876
Cerberus KRS Levered Loan Opportunities Fund, L.P.	140,000,000	20,766,690	29,807,656	0	30,141,270	7,458,982	10,706,318	0	0	10,826,145	1,927,816	2,767,109	0	0	2,788,079	
Ceres Farms	100,000,000	72,000,000	0	36,000,000	0	36,000,000	17,000,000	0	8,500,000	0	8,500,000	11,000,000	0	5,500,000	0	5,500,000
Columbia Capital Equity Partners IV, L.P.	27,000,000	9,787,893	1,205,310	0	511,862	693,448	1,237,814	152,428	0	64,732	87,696	644,258	79,336	0	33,692	45,644
Crestview Partners II, L.P.	67,500,000	24,469,733	10,120,736	79,700	2,317,360	7,883,076	3,094,535	1,279,906	10,079	293,062	996,924	1,610,645	666,166	5,246	152,533	518,879
Crestview Partners III, L.P.	39,000,000	0	0	0	0	0	2,416,341	1,570,599	57,203	95,086	1,532,716	761,744	495,126	18,003	29,975	483,184
CS Adjacent Investment Partners Parallel LP	140,000,000	20,766,690	19,911,802	0	604,302	19,307,499	7,458,982	7,151,923	0	217,053	6,934,870	1,927,816	1,848,455	0	56,099	1,792,357
CVC European Equity Partners VI, L.P.	22,698,957	0	0	0	0	0	1,406,370	1,393,489	23,123	128,044	1,193,527	443,354	439,293	7,289	40,366	376,256
DAG Ventures II, L.P.	27,000,000	9,787,893	397,730	0	0	397,730	1,237,814	50,298	0	0	50,298	644,258	26,179	0	0	26,179
DAG Ventures III, L.P.	27,000,000	9,787,893	55,521	0	0	55,521	1,237,814	7,021	0	0	7,021	644,258	3,654	0	0	3,654
DAG Ventures IV, L.P.	90,000,000	32,626,311	9,848,092	0	9,848,092	4,126,046	1,245,427	0	0	1,245,427	2,147,527	648,220	0	0	0	648,220
DAG Ventures V, L.P.	8,000,000	0	0	0	0	0	439,999	1,285	0	920	365	0	0	0	0	0
DCM VI, L.P.	13,500,000	4,893,947	686,021	0	0	686,021	618,907	86,757	0	0	86,757	322,129	45,155	0	0	45,155
DivcoWest Fund IV	20,800,000	0	0	0	0	0	1,244,069	51,444	0	4,176	47,267	447,430	18,502	1,502	0	17,000
Elda River Opportunities Fund II	37,500,000	9,955,275	59,419	0	56,984	2,435	1,710,484	10,592	0	10,158	434	848,988	5,257	0	5,042	215
Fundamental Partners III LP	70,000,000	13,076,001	9,268,335	0	460,887	8,807,448	3,577,001	2,535,396	0	126,078	2,409,319	1,512,000	1,071,131	53,293	1,018,420	
Green Equity Investors V, L.P.	90,000,000	32,626,311	121,340	0	0	121,340	4,126,046	15,345	0	0	15,345	2,147,527	7,987	0	0	7,987
Green Equity Investors VI, L.P.	32,000,000	0	0	0	0	0	1,759,997	1,816,203	0	134,807	1,681,396	0	0	0	0	0
Green Equity Investors VII LP	25,000,000	0	0	0	0	0	1,525,000	1,074,044	0	43,595	1,030,450	0	0	0	0	0
Greenfield Acquisition Partners VII, L.P.	27,800,000	0	0	0	0	0	1,662,744	92,883	0	0	92,883	598,005	33,405	0	0	33,405
H.I.G. HealthBridge Capital Partners I, L.P.	13,500,000	0	0	0	0	0	742,499	374,589	0	0	374,589	0	0	0	0	0
H.I.G. Capital Partner V, L.P.	13,100,000	0	0	0	0	0	811,643	446,448	4,016	121,162	329,302	255,868	140,742	1,266	38,196	103,812
H.I.G. Ventures II, L.P.	18,000,000	6,525,262	408,158	0	0	408,158	825,209	51,617	0	0	51,617	429,505	26,866	0	0	26,866
H&F Spock II LP	3,250,153	1,178,228	3,509,293	0	0	3,509,293	149,003	443,798	0	0	443,798	77,553	230,988	0	0	230,988
Harvest Partners VI, L.P.	28,400,000	0	0	0	0	0	1,607,440	176,525	0	0	176,525	241,400	26,510	0	0	26,510
Harvest Partners VII LP	20,000,000	0	0	0	0	0	1,220,000	1,511,745	0	0	1,511,745	0	0	0	0	0
Horsley Bridge International Fund V, L.P.	45,000,000	16,313,156	29,512,331	0	1,734,082	27,778,249	2,063,023	3,732,241	0	219,299	3,512,942	1,073,764	1,942,559	0	114,141	1,828,418
IFM US Infrastructure Debt Fund	70,000,000	11,678,693	12,399,632	2,872,305	2,872,305	12,686,514	3,596,947	3,818,990	884,648	884,648	3,907,348	1,394,272	1,480,342	342,913	342,913	1,514,591
Institutional Venture Partners XII, L.P.	27,000,000	9,787,893	1,854	0	0	1,854	1,237,814	234	0	0	234	644,258	122	0	0	122
Kayne Anderson Energy Fund VII LP	50,000,000	0	0	0	0	0	3,050,000	1,561,746	0	54,761	1,506,985	0	0	0	0	0
KCP IV Co-Invest	12,281,030	0	0	0	0	0	760,902	130,844	0	26,736	130,844	239,873	41,248	0	8,428	29,872
Keyhaven Capital Partners Fund III, L.P.	26,127,934	9,471,757	3,263,069	0	0	3,027,559	1,197,834	412,660	0	0	382,877	623,449	214,782	0	0	199,280
Keyhaven Capital Partners IV LP	12,281,030	0	0	0	0	0	760,902	826,550	8,330	39,349	737,573	239,873	260,568	2,626	12,405	232,518
Levine Leichtman Capital Partners V, L.P.	46,000,000	0	0	0	0	0	2,850,043	121,580	0	0	121,580	898,468	38,328	0	0	38,328
Levine Leichtman Capital Partners VI LP	37,500,000	0	0	0	0	0	2,287,504	2,889,982	0	9,828	2,880,154	0	0	0	0	0
Lubert Adler VII	34,750,000	0	0	0	0	0	2,078,050	753,345	0	79,508	673,836	747,124	270,851	0	28,586	242,265
Lubert-Adler Real Estate Fund VII-B LP	36,750,000	6,864,900	1,594,233	0	363,281	1,230,952	1,877,925	436,110	0	93,777	336,733	793,800	184,344	0	42,007	142,337
Maritime Partners LP	175,0															

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority
Capital Calls and Distributions
For the period October 1, 2024 thru December 31, 2024

Pension Funds Managers	Total Pension Funds Commitments	Kentucky Employees Retirement System					Kentucky Employees Hazardous Retirement System					State Police Employees Retirement System				
		Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation
Rubenstein Properties Fund II	20,800,000	0	0	0	0	0	1,244,066	263,369	0	0	263,369	447,429	94,721	0	0	94,721
Strategic Value SH 130 C2	65,000,000	18,070,000	0	13,650,776	0	13,650,776	4,225,000	0	3,191,728	0	3,191,728	0	0	0	0	0
Strategic Value Special Situations Fund IV LP	43,300,000	0	0	0	0	0	2,533,050	2,661,906	0	470,353	2,191,553	2,730,000	0	2,062,347	0	2,062,347
Strategic Value Special Situations Fund V LP	70,000,000	13,417,696	11,973,783	660,822	0	12,634,605	3,857,668	3,442,535	189,990	0	3,632,525	1,543,688	1,377,568	76,027	0	1,453,594
Taurus Mining Finance Fund LLC	45,100,000	0	0	0	0	0	2,794,280	193,997	0	6,548	187,450	880,891	61,157	0	2,064	59,093
Tenaska Power Fund II, L.P.	27,000,000	8,824,749	31,742	0	0	31,742	1,363,534	4,905	0	0	4,905	625,175	2,249	0	0	2,249
Triton Fund IV, L.P.	26,052,064	0	0	0	0	0	1,614,120	1,362,815	0	0	1,264,455	508,847	429,624	0	0	398,616
VantagePoint Venture Partners 2006, L.P.	27,000,000	9,787,893	1,415,677	0	0	1,415,677	1,237,814	179,032	0	0	179,032	644,258	93,183	0	0	93,183
VantagePoint Venture Partners IV, L.P.	36,000,000	13,050,524	20,737	0	0	20,737	1,650,419	2,622	0	0	2,622	859,011	1,365	0	0	1,365
Vista Equity Partners III, L.P.	45,000,000	16,313,156	802,065	0	0	802,065	2,063,023	101,432	0	0	101,432	1,073,764	52,793	0	0	52,793
Vista Equity Partners IV, L.P.	27,000,000	0	0	0	0	0	1,484,997	1,060,487	0	0	1,060,487	0	0	0	0	0
Vista Equity Partners VI LP	25,000,000	0	0	0	0	0	1,525,000	1,550,505	0	144,353	1,406,150	0	0	0	0	0
Walton Street Real Estate Fund VI, LP	36,000,000	10,001,992	3,829,224	0	318,423	3,510,801	2,186,190	836,974	0	69,599	767,375	725,004	277,565	0	23,081	254,484
Walton Street Real Estate Fund VII, LP	38,120,000	0	0	0	0	0	2,279,995	239,259	0	26,756	212,503	820,000	86,049	0	9,623	76,427
Warburg, Pincus Private Equity IX, LP	50,000,000	18,125,728	20,272	0	0	20,272	2,292,248	2,564	0	0	2,564	1,193,071	1,334	0	0	1,334
Warburg, Pincus Private Equity X, L.P.	38,750,000	14,047,440	325,870	0	54,125	271,745	1,776,492	41,211	0	6,845	34,366	924,630	21,449	0	3,563	17,887
Wayzata Opportunities Fund III, L.P.	35,500,000	0	0	0	0	0	2,009,300	58,285	0	11,646	46,639	301,749	8,753	0	1,749	7,004
White Oak Yield Spectrum Parallel Fund LP	100,000,000	14,833,350	0	0	0	24,783,548	5,327,845	0	0	0	8,901,758	1,377,012	0	0	0	2,300,710
Total	4,796,543,253	929,993,097	419,405,883	105,904,078	18,446,805	500,130,641	255,228,174	135,865,180	20,515,701	6,098,241	155,393,219	113,614,018	53,264,963	17,042,576	2,266,012	64,185,413

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority
Capital Calls and Distributions
For the period October 1, 2024 thru December 31, 2024

Insurance Funds Managers	Total Insurance Funds Commitments	Kentucky Employees Retirement System					Kentucky Employees Hazardous Retirement System					State Police Employees Retirement System				
		Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation
Adams Street SPC II A1	75,000,000	13,190,205	11,238,062	0	417,370	10,820,692	7,095,858	6,045,675	0	224,530	5,821,145	2,740,996	2,335,330	0	86,732	2,248,598
Adams Street SPC II B1	75,000,000	13,190,205	10,484,890	0	318,395	10,166,495	7,095,858	5,640,495	0	171,285	5,469,210	2,740,996	2,178,817	0	66,164	2,112,653
Adams Street SPC III A1	75,250,000	16,502,298	17,261,271	2,164,812	1,348,781	3,532,302	2,250,024	370,353	295,164	183,901	481,616	1,753,396	288,608	230,015	143,310	375,313
Adams Street SPC III B1	75,250,000	16,502,291	9,644,417	2,560,994	938,217	2,587,194	2,250,037	131,495	349,184	127,923	352,756	1,753,399	102,471	272,110	99,687	274,894
AMERBA Agri Fund II, LP	16,200,000	2,153,555	831,136	1,315	73,983	759,419	1,746,327	674,021	1,066	59,271	615,816	656,373	253,337	401	22,277	231,460
AMERBA-KRS Agri Holding Company, LP	35,000,000	4,652,745	2,347,326	0	231,480	2,115,845	3,772,929	1,903,455	0	187,708	1,715,748	1,418,089	715,431	0	70,552	644,879
Arcano KRS Fund I, L.P.	4,000,000	903,884	317,889	0	0	317,889	430,530	151,414	0	0	151,414	151,459	67,335	0	0	67,335
Arctos Sports Partners Fund II	40,000,000	11,500,000	2,675,617	1,562,704	147,931	4,090,390	500,000	116,331	67,944	6,432	177,843	500,000	116,331	67,944	6,432	177,843
Arctos Sports Partners Fund II Co-Investments LP	40,000,000	11,500,000	7,450,924	0	8,761,046	0	500,000	323,953	56,962	0	380,915	500,000	323,953	56,962	0	380,915
Ares Special Situations Fund IV, L.P.	13,808,000	0	0	0	0	0	1,038,363	793,058	0	76,551	716,507	646,214	493,551	0	47,641	445,910
Barings Euro Real Estate II	66,013,125	9,373,865	2,758,459	1,591,679	4,107,386	7,010,592	2,063,015	1,190,396	0	3,071,860	2,680,135	788,687	455,086	0	1,174,366	0
Barings Real Estate European Value Add I SCSP	46,597,500	6,616,846	2,259,264	106,994	0	2,201,424	4,948,653	1,689,674	80,020	0	1,646,417	1,891,860	645,959	30,591	0	629,422
Bay Hills Capital I, L.P.	75,000,000	16,947,830	154,460	0	0	154,460	8,072,444	73,571	0	0	73,571	3,589,864	32,717	0	0	32,717
Bay Hills Capital III, L.P.	48,750,000	0	0	0	0	0	3,666,009	3,194,172	0	0	3,194,172	2,281,498	1,987,856	0	0	1,987,856
Bay Hills Emerging Partners II LP	5,000,000	1,129,855	2,235,382	0	0	2,235,382	538,163	1,064,738	0	0	1,064,738	239,324	473,495	0	0	473,495
Bay Hills Emerging Partners II-B LP	5,000,000	910,000	1,178,453	0	0	1,178,453	555,000	718,727	0	0	718,727	215,000	278,426	0	0	278,426
BDCM Opportunity Fund IV, L.P.	24,420,000	0	0	0	0	0	1,836,387	2,944,467	0	3,387	2,941,079	1,142,854	1,832,455	0	2,108	1,830,347
Blackstone Capital Partners V, L.P.	12,414,403	2,805,296	1,149	0	0	1,149	1,336,194	547	0	0	547	594,214	243	0	0	243
Blackstone Capital Partners VI, L.P.	40,000,000	0	0	0	0	0	3,360,001	802,052	0	12,955	789,096	1,599,998	381,929	0	6,169	375,760
Blue Torch Credit Opportunities Fund II LP	60,000,000	10,726,688	12,313,155	0	0	12,313,155	5,638,524	6,472,457	0	0	6,472,457	2,184,246	2,507,293	0	0	2,507,293
BSP Co-Invest Vehicle K LP	17,252,566	2,930,825	3,107,508	0	81,280	3,026,229	1,769,758	1,876,448	0	49,080	1,827,367	637,155	675,566	0	17,670	657,896
BSP Private Credit Fund	50,000,000	8,493,880	7,522,171	0	193,450	7,328,721	5,128,971	4,542,211	0	116,813	4,425,397	1,846,552	1,635,304	0	42,056	1,593,249
BTG Pactual Brazil Timberland Fund I	15,500,000	2,391,768	1,391,057	0	83,093	1,307,964	1,621,536	943,088	0	56,334	886,754	615,184	357,792	0	21,372	336,420
Cerberus KRS Levered Loan Opportunities Fund, L.P.	60,000,000	10,192,656	14,630,121	0	0	14,793,864	6,154,765	8,834,297	0	0	8,933,173	2,215,862	3,180,558	0	0	3,216,155
Ceres Farms	50,000,000	32,000,000	16,000,000	0	16,000,000	16,000,000	12,750,000	0	6,375,000	0	6,375,000	5,250,000	0	2,625,000	0	2,625,000
Columbia Capital Equity Partners IV, L.P.	3,000,000	677,913	83,481	0	35,452	48,029	322,898	39,763	0	16,886	22,877	143,595	17,683	0	7,509	10,173
Crestview Partners III, L.P.	7,500,000	1,694,783	700,961	5,520	160,501	545,980	807,244	333,876	2,629	76,449	260,056	358,986	148,477	1,169	33,997	115,649
Crestview Partners III, L.P.	21,000,000	0	0	0	0	0	1,579,203	1,026,466	37,385	62,143	1,001,707	982,799	638,810	23,266	38,674	623,401
CS Adjacent Investment Partners Parallel LP	60,000,000	10,192,656	9,773,062	0	296,602	9,476,459	6,154,765	5,901,396	0	179,101	5,722,295	2,215,862	2,124,643	0	64,481	2,060,163
CVC European Equity Partners VI, L.P.	12,529,757	0	0	0	0	0	942,240	893,696	14,829	82,120	765,453	586,392	556,181	9,229	51,106	476,371
DAG Ventures II, L.P.	3,000,000	677,913	27,545	0	0	27,545	322,898	13,120	0	0	13,120	143,595	5,834	0	0	5,834
DAG Ventures III, L.P.	3,000,000	677,913	3,842	0	0	3,842	322,898	1,830	0	0	1,830	143,595	814	0	0	814
DAG Ventures IV, L.P.	10,000,000	2,259,711	682,082	0	0	682,082	1,076,316	324,884	0	0	324,884	476,649	144,478	0	0	144,478
DAG Ventures V, L.P.	7,000,000	0	0	0	0	0	588,000	1,715	0	1,229	487	280,000	817	0	585	232
DCM VI, L.P.	1,500,000	338,957	47,514	0	0	47,514	161,449	22,623	0	0	22,623	71,797	10,064	0	0	10,064
DivcoWest Fund IV	9,200,000	1,303,635	53,908	0	4,376	49,531	977,043	40,403	0	3,280	37,123	368,004	15,218	0	1,235	13,982
Eida River Opportunities Fund II	12,500,000	1,699,166	10,522	0	10,991	431	1,338,526	8,289	0	7,949	340	508,950	3,152	0	3,023	129
Fundamental Partners III LP	30,000,000	4,260,001	3,019,510	0	150,151	2,869,359	3,185,999	2,258,253	0	112,296	2,145,956	1,218,001	863,325	0	42,931	820,395
Green Equity Investors V, L.P.	10,000,000	2,250,711	8,404	0	0	8,404	1,076,326	4,003	0	0	4,003	478,649	1,780	0	0	1,780
Green Equity Investors VI, L.P.	28,000,000	0	0	0	0	0	2,352,000	2,427,114	0	180,152	2,246,962	1,119,999	1,155,767	0	85,786	1,069,980
Green Equity Investors VII LP	25,000,000	4,550,000	3,204,526	0	130,069	3,074,457	2,775,000	1,954,409	0	79,328	1,875,081	1,075,001	757,114	0	30,731	726,383
Greenfield Acquisition Partners VII, L.P.	12,200,000	1,729,339	96,604	0	0	96,604	1,296,093	72,402	0	0	72,402	487,855	27,252	0	0	27,252
H.I.G. HealthBridge Capital Partners I, L.P.	11,500,000	0	0	0	0	0	966,600	487,345	0	0	487,345	459,999	232,069	0	0	232,069
H.I.G. Capital Partner V, L.P.	6,900,000	0	0	0	0	0	518,881	285,414	2,567	77,459	210,522	322,920	177,624	1,598	48,206	131,016
H.I.G. Ventures II, L.P.	2,000,000	451,942	28,269	0	0	28,269	215,265	13,465	0	0	13,465	95,730	5,988	0	0	5,988
H&F Spock I LP	1,794,672	405,544	820,310	0	0	820,310	193,165	390,723	0	0	390,723	85,902	173,757	0	0	173,757
Harvest Partners VI, L.P.	11,600,000	0	0	0	0	0	872,320	95,796	0	0	95,796	542,879	59,618	0	0	59,618
Harvest Partners VII LP	20,000,000	3,640,000	4,510,452	0	0	4,510,452	2,220,000	2,750,880	0	0	2,750,880	860,001	1,065,657	0	0	1,065,657
Horsley Bridge International Fund V, L.P.	5,000,000	1,129,855	2,044,031	0	120,103	1,923,928	538,163	973,595	0	57,206	916,389	239,324	432,963	0	25,440	407,523
IFM US Infrastructure Debt Fund	30,000,000	5,109,247	5,424,647	1,256,589	5,550,154	2,874,861	3,052,330	707,055	707,055	3,122,949	968,545	1,028,334	238,208	238,208	1,052,126	0
Institutional Venture Partners XII, L.P.	3,000,000	677,913	128	0	0	128	322,898	61	0	61	143,595	27	0	0	27	0
Kayne Anderson Energy Fund VII LP	50,000,000	9,100,000	4,659,635	0	163,386	4,496,249	5,550,000	2,841,866	0	99,648	2,742,218	2,150,001	1,100,904	0	38,602	1,062,301
KCP IV Co-Invest	8,428,970	0	0	0	0	0	633,859	108,997	0	22,272	78,936	394,475	67,833	0	13,861	49,125
Keyhaven Capital Partners Fund III, L.P.	2,899,400	655,181	226,002	0	209,690	312,070	107,647	0	0	99,878	138,779	47,871	0	0	0	44,416
Keyhaven Capital Partners IV LP	8,428,970	0	0	0	0	0	633,859	688,547	6,939	32,779	614,426	394,475	428,509	4,319	20,400	382,381
Levine Leitchman Capital Partners V, L.P.	24,000,000	0	0	0	0	0	1,804,804	76,991	0	0	76,991	1,123,199	47,915	0	0	47,915
Levine Leitchman Capital Partners VI LP	37,500,000	6,824,999	8,622,551	0	29,323	8,593,228	4,162,518	5,258,832	0	17,884	5,240,949	1,612,494	2,037,189	0	6,928	2,030,261
Lubert Adler VII	15,250,000	2,160,925	783,388	0	82,679	700,709	1,619,550	587,127	0	61,965	525,161	610,001	221,140	0	23,399	197,801
Lubert-Adler Real Estate Fund VII-B LP	15,750,000															

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority
Capital Calls and Distributions
For the period October 1, 2024 thru December 31, 2024

Insurance Funds Managers	Total Insurance Funds Commitments	Kentucky Employees Retirement System					Kentucky Employees Hazardous Retirement System					State Police Employees Retirement System				
		Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation	Commitment	Beginning Valuation	Period Contributions	Period Distributions	Ending Valuation
Riverside Capital Appreciation Fund VI, L.P.	18,712,500	0	0	0	0	0	1,396,123	455,376	0	6,450	448,926	862,056	281,178	0	3,983	277,196
Rubenstein Properties Fund II	9,200,000	1,303,637	275,981	0	0	275,981	977,044	206,841	0	0	206,841	368,003	77,906	0	0	77,906
Secondary Opportunities Fund III, L.P.	75,000,000	10,548,299	1,890,721	0	0	1,890,721	8,756,849	1,569,614	0	0	1,569,614	1,960,724	351,448	0	0	351,448
Strategic Value SH 130 C2	30,000,000	6,450,000	0	4,827,175	0	4,827,175	2,550,000	0	1,908,418	0	1,908,418	1,050,000	0	785,819	0	785,819
Strategic Value Special Situations Fund IV LP	21,700,000	8,332,800	8,756,677	0	1,547,288	7,209,389	2,354,450	2,474,217	0	437,189	2,037,028	551,180	579,217	0	102,347	448,833
Strategic Value Special Situations Fund V LP	30,000,000	5,755,820	5,422,025	283,474	0	5,705,499	2,712,910	2,555,582	133,611	0	2,589,192	1,062,842	1,001,205	52,345	0	1,053,550
Taurus Mining Finance Fund LLC	19,900,000	0	0	0	0	0	1,496,479	103,895	0	3,507	100,389	931,319	64,658	0	2,182	62,476
Tenaska Power Fund II, L.P.	3,000,000	588,919	2,119	0	0	2,119	316,438	1,138	0	0	1,138	137,845	496	0	0	496
Triton Fund IV, L.P.	13,403,512	0	0	0	0	0	1,007,946	871,913	0	0	808,984	627,284	542,625	0	0	503,462
VantagePoint Venture Partners 2006, L.P.	3,000,000	677,913	98,050	0	0	98,050	322,898	46,703	0	0	46,703	143,595	20,769	0	0	20,769
VantagePoint Venture Partners IV, L.P.	4,000,000	903,884	1,436	0	0	1,436	430,530	684	0	0	684	191,459	304	0	0	304
Vista Equity Partners III, L.P.	5,000,000	1,129,855	55,552	0	0	55,552	538,163	26,460	0	0	26,460	239,324	11,767	0	0	11,767
Vista Equity Partners IV, L.P.	23,000,000	0	0	0	0	0	1,932,000	1,379,707	0	0	1,379,707	919,999	657,003	0	0	657,003
Vista Equity Partners VI LP	25,000,000	4,550,000	4,626,098	0	430,696	4,195,399	2,775,000	2,821,411	0	262,677	2,558,733	1,075,001	1,092,980	0	101,758	991,221
Walton Street Real Estate Fund VI, LP	4,000,000	754,575	288,886	0	24,023	264,864	431,496	165,197	0	13,737	151,460	184,453	70,617	0	5,872	64,745
Walton Street Real Estate Fund VII, LP	16,755,000	2,375,001	249,228	0	27,871	221,358	1,780,001	186,790	0	20,889	165,902	669,998	70,308	0	7,863	62,446
Warburg, Pincus Private Equity IX, L.P.	10,000,000	2,259,711	2,527	0	2,527	1,076,326	1,076,326	1,204	0	0	1,204	478,649	535	0	0	535
Warburg, Pincus Private Equity X, L.P.	7,500,000	1,694,783	39,301	0	6,530	32,771	807,244	18,720	0	3,110	15,609	358,986	8,325	0	1,383	6,942
Wayzata Opportunities Fund III, L.P.	18,712,500	0	0	0	0	0	1,396,123	40,498	0	8,092	32,406	862,056	25,006	0	4,996	20,010
White Oak Yield Spectrum Parallel Fund LP	50,000,000	8,493,880	13,438,560	0	179,384	13,259,176	5,128,971	8,114,782	0	108,320	8,006,462	1,846,552	2,921,515	0	38,998	2,882,517
TOTAL	2,168,803,920	374,740,826	217,907,675	31,717,476	8,977,566	240,449,969	198,635,019	120,835,845	11,268,697	4,248,382	127,486,011	83,744,624	49,365,050	4,868,870	1,768,798	52,246,488

Kentucky Public Pensions Authority

KERS, KERS-Hazardous, & SPRS Unit Holdings

Quarter Ending: December 31, 2024

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority Pension: KERS, KERS-H, & SPRS Unit Holdings Quarter Ended December 31, 2024												
UNIT OF PARTICIPATION	KERS				KERS-H				SPRS			
	Shares/Par	Base Cost	Base Market Value	Base Market Unrealized G/L	Shares/Par	Base Cost	Base Market Value	Base Market Unrealized G/L	Shares/Par	Base Cost	Base Market Value	Base Market Unrealized G/L
Grand Total	25,762,787.52	3,779,768,598.32	4,550,564,803.16	770,796,204.84	5,475,838.65	862,730,607.44	1,068,941,501.31	206,210,893.87	3,914,122.14	582,498,319.35	683,962,675.77	101,464,356.42
KRS ABSOLUTE RETURN UNIT	148,958.431	5,199,204.63	19,719,733.04	14,520,528.41	38,864.127	4,371,041.34	5,144,993.84	773,952.50	16,125.164	1,185,237.73	2,134,715.89	949,478.16
KRS ADAMS STREET A1 UNIT	131,610.771	22,997,754.37	25,255,734.89	2,257,980.52	39,138.098	6,839,017.62	7,510,490.36	671,472.74	16,320.411	2,851,839.54	3,131,840.73	280,001.19
KRS ADAMS STREET B1 UNIT	152,991.808	22,904,429.86	23,823,639.55	919,209.69	45,496.347	6,811,265.78	7,084,618.36	273,352.58	18,971.769	2,840,267.80	2,954,253.51	113,985.71
KRS ADAMS STREET III A1 UNIT	79,113.607	8,226,310.39	8,535,463.90	309,153.51	18,345.373	1,907,570.08	1,979,258.37	71,688.29	7,722.615	803,005.22	833,182.86	30,177.64
KRS ADAMS STREET III B1 UNIT	87,790.101	6,142,427.50	6,331,166.18	188,738.68	20,357.334	1,424,345.81	1,468,111.59	43,765.78	8,569.590	599,590.33	618,013.85	18,423.52
KRS AMERRA AGRIC UNIT	-	-	-	-	24,882.500	2,500,872.77	1,852,323.27	-648,549.50	12,589.243	1,265,309.45	937,178.65	-328,130.80
KRS AMERRA UNIT	-	-	-	-	5,280.992	937,269.79	873,577.44	-63,692.35	2,671.903	474,210.52	441,984.05	-32,226.47
KRS ARCTOS SPORTS II UNIT	107,896.054	16,305,455.55	20,964,298.35	4,658,842.80	2,766.569	418,089.32	537,546.79	119,457.47	27,665.651	4,180,885.67	5,375,460.36	1,194,574.69
KRS ARROWMARK UNIT	405,599.625	52,177,323.22	107,021,384.42	54,844,061.20	125,747.662	16,188,351.20	33,179,736.98	16,991,385.78	50,099.456	6,444,659.88	13,219,226.08	6,774,566.20
KRS BLACKCROCK UNIT	670,348.376	55,598,959.73	127,913,633.45	72,314,673.72	191,293.727	19,328,623.13	36,502,028.73	17,173,405.60	71,104.847	6,170,216.05	13,567,988.92	7,397,772.87
KRS BLUE TORCH UNIT	158,020.242	30,231,724.91	28,332,540.00	-1,899,184.91	47,477.996	9,083,278.47	8,512,657.64	-570,620.83	19,588.655	3,747,613.41	3,512,185.18	-235,428.23
KRS BNYM CUSTODY FEE UNIT	-164,325.121	-164,325.12	-164,325.12	0.00	-39,014.618	-39,014.62	-39,014.62	0.00	-24,937.550	-24,937.55	-24,937.55	0.00
KRS BTG UNIT	-	-	-	-	8,682.969	410,954.41	817,664.23	406,709.82	4,018.597	190,194.56	378,426.21	188,231.65
KRS CASH UNIT	1,085,940.939	116,347,731.85	114,593,521.22	-1,754,210.63	344,439.596	35,833,996.15	36,346,862.65	512,866.50	153,491.614	16,321,058.55	16,197,146.54	-123,912.01
KRS CERES FARMS UNIT	360,000.000	36,000,000.00	36,000,000.00	0.00	85,000.000	8,500,000.00	8,500,000.00	0.00	55,000.000	5,500,000.00	5,500,000.00	0.00
KRS INS DB PRIVATE EQ UNIT	-	-	-	-	-	-	-	-	-	-	-	-
KRS DVCOWEST IV UNIT	-	-	-	-	106.437	0.00	55,756.55	55,756.55	38.280	0.00	20,052.81	20,052.81
KRS DOMESTIC EQUITY UNIT	695,173.829	179,879,354.79	240,112,892.46	60,233,537.67	246,466.875	61,265,075.83	85,129,606.13	23,864,530.30	128,966.809	32,969,488.71	44,545,108.36	11,575,619.65
KRS GLOBAL FIXED UNIT	271,863.553	43,362,771.18	40,321,936.84	-3,040,834.34	133,186.975	20,003,888.25	19,753,868.20	-250,020.05	55,773.631	8,422,243.95	8,272,167.42	-150,076.53
KRS GREENFIELD VII UNIT	-	-	-	-	304.480	110,545.75	92,721.98	-17,823.77	109.508	39,757.92	33,348.00	-6,409.92
KRS HARRISON UNIT	319,272.312	67,436,999.15	68,127,255.02	690,255.87	56,783.798	11,420,779.21	12,116,692.06	695,912.85	79,847.383	17,905,741.55	17,038,066.94	-867,674.61
KRS IFM INFRAST DEBT UNIT	78,848.461	13,177,492.28	12,200,831.95	-976,660.33	24,284.713	4,058,565.11	3,757,761.39	-300,803.72	9,413.397	1,573,208.95	1,456,607.69	-116,601.26
KRS INTERNAL EQUITY UNIT	1,526,259.513	333,081,019.29	661,809,088.94	328,728,069.65	451,839.255	109,912,752.94	195,924,299.34	86,011,546.40	210,670.982	51,189,837.65	91,350,107.55	40,160,269.90
KRS INTERNAL PRIVATE EQUITY	411,667.907	43,242,465.14	49,091,227.07	5,848,761.93	84,723.714	8,897,209.24	10,103,267.73	1,206,058.49	112,085.944	11,741,338.45	13,366,202.31	1,624,863.86
KRS INTERNAL REAL ESTATE UNIT	300,000.000	31,080,866.56	31,765,609.80	684,743.24	120,670.505	12,508,430.27	12,777,240.59	268,810.32	23,410.842	2,292,537.37	2,478,865.57	186,328.20
KRS INTERNAL REAL RETURN UNIT	1,640,571.015	168,759,651.19	184,758,195.70	15,998,544.51	258,366.806	25,421,940.99	29,096,811.09	3,674,870.10	247,211.522	25,406,969.96	27,840,522.81	2,433,552.85
KRS INTERNATIONAL EQUITY UNIT	2,136,894.215	356,273,014.34	398,034,357.75	41,761,343.41	683,666.971	119,071,507.94	127,345,070.15	8,273,562.21	351,879.479	58,171,832.75	65,543,779.12	7,371,946.37
KRS L-A VII UNIT	-	-	-	-	10,897.527	599,572.71	678,319.21	-281,253.50	3,918.004	344,996.49	243,877.11	-101,119.38
KRS LIQUID CORE FIXED UNIT	9,249,510.897	1,241,718,982.74	1,237,584,558.02	-4,134,424.72	848,239.594	113,462,664.85	113,494,457.68	31,792.83	1,390,971.791	184,617,174.17	186,112,025.64	1,494,851.47
KRS LIQUID HY FI UNIT	1,197,143.054	214,176,710.57	217,784,429.59	3,607,719.02	333,898.681	60,656,627.18	60,742,894.13	86,266.95	213,044.288	37,318,813.46	38,757,046.27	1,438,232.81
KRS MAGNETAR MTP UNIT	0.256	9,047.98	0.26	-9,047.72	0.046	1,611.70	0.05	-1,611.65	0.023	801.17	0.02	-801.15
KRS MARITIME PARTNERS UNIT	275,030.184	28,526,522.02	29,707,823.72	1,181,301.70	29,894.586	3,100,708.42	3,229,111.36	128,402.94	53,810.254	5,581,276.12	5,812,400.36	231,124.24
KRS MESA WEST CORE UNIT	30,939.768	6,340,127.50	5,012,479.94	-1,327,647.56	18,362.356	3,762,784.42	2,974,842.64	-787,941.78	5,427.457	1,112,186.32	879,289.70	-232,896.62
KRS MESA WEST IV UNIT	44,036.625	4,364,385.14	3,045,329.24	-1,319,055.90	12,046.426	1,193,897.68	833,064.15	-360,833.53	5,092.030	504,660.86	352,136.61	-152,524.25
KRS MULTI SECTOR CREDIT FI	787,166.869	87,561,267.91	148,415,294.17	60,854,026.26	132,990.502	15,049,750.45	25,074,511.20	10,024,760.75	71,068.687	7,963,583.86	13,399,547.80	5,435,963.94
KRS OBERLAND UNIT	-	-	-	-	490.834	0.00	65,196.70	65,196.70	-	-	-	-
KRS PE 2010 UNIT	388,190.379	87,676,882.11	115,265,174.36	27,588,292.25	49,092.023	11,074,794.75	14,576,869.75	3,502,075.00	25,551.434	5,764,355.19	7,586,974.47	1,822,619.28
KRS PE 2011 UNIT	-	-	-	-	11,384.565	2,620,827.80	3,821,341.04	1,200,513.24	-	-	-	-
KRS PE 2012 A UNIT	-	-	-	-	529.940	238,664.80	201,395.50	-37,269.30	79.585	35,843.28	30,245.05	-5,598.23
KRS PE 2012 B UNIT	-	-	-	-	3,917.493	554,112.45	723,894.95	169,782.50	588.313	83,212.60	108,711.57	25,498.97
KRS PE 2013 UNIT	0.002	2.39	0.78	-1.61	15,368.950	4,606,066.85	6,298,440.61	1,692,373.76	4,845.012	1,450,211.80	1,985,563.08	535,441.28
KRS PE 2014 UNIT	-	-	-	-	21,406.356	2,102,811.45	2,662,107.25	559,295.80	6,748.288	662,905.38	839,221.14	176,315.76
KRS PE 2015 UNIT	-	-	-	-	11,858.920	1,684,040.30	4,285,327.02	2,601,286.72	3,738.501	530,890.13	1,350,940.84	820,050.71
KRS PE 2016 UNIT	-	-	-	-	21,306.132	2,282,529.48	5,521,868.28	3,239,338.80	-	-	-	-
KRS PE 2017 UNIT	-	-	-	-	12,359.402	1,499,528.60	2,717,352.51	1,217,823.91	-	-	-	-
KRS PE 2018 UNIT	-	-	-	-	12,517.633	2,036,774.02	2,470,735.52	433,961.50	-	-	-	-
KRS PE 2019 UNIT	-	-	-	-	14,059.289	2,072,319.60	3,547,781.54	1,475,461.94	-	-	-	-
KRS PE 2021 UNIT	220,383.563	23,309,862.09	32,929,378.76	9,619,516.67	63,361.600	6,701,725.25	9,467,394.47	2,765,669.22	25,354.838	2,681,768.73	3,788,481.56	1,106,712.83
KRS PERIMETER PARK UNIT	16,962.985	2,458,290.28	1,880,004.61	-578,285.67	13,902.441	2,014,750.93	1,540,805.06	-473,945.87	3,295.430	477,576.31	365,231.92	-112,344.39
KRS POST-2015 REAL ESTATE UNIT	283,766.807	24,633,520.98	32,450,262.46	7,816,741.48	77,625.729	6,738,614.47	8,876,920.13	2,138,305.66	32,812.437	2,848,415.96	3,752,278.87	903,862.91
KRS PRIVATE CREDIT FI UNIT	391,423.474	86,761,573.55	90,554,224.48	3,792,650.93	140,591.529	31,286,785.67	32,525,276.90	1,238,491.23	36,336.679	8,064,755.70	8,406,342.51	341,586.81
KRS PROLOGS UNIT	246,066.872	31,618,646.51	54,799,246.92	23,180,600.41	67,312.722	8,649,424.99	14,990,585.46	6,341,160.47	28,453.125	3,656,114.69	6,336,528.81	2,680,414.12
KRS REAL RETURN UNIT	231,278.921	38,429,065.65	69,214,982.38	30,785,916.73	57,929.702	9,956,665.05	17,336,656.91	7,379,991.86	23,123.213	3,957,809.89	6,922,791.36	2,964,981.47
KRS RUBENSTEIN PF II UNIT	-	-	-	-	6,189.255	1,059,244.61	279,503.45	-779,741.16	2,225.969	380,959.75	100,523.57	-280,436.18
KRS SABA CAPITAL UNIT	452,512.753	49,456,897.68	50,456,402.34	999,504.66	75,418.793	8,235,812.12	8,409,400.48	173,588.36	75,418.793	8,235,811.94	8,409,400.48	173,588.54
KRS SHENKMAN UNIT	951,011.362	173,899,085.22	175,524,874.68	1,625,789.46	285,157.957	52,093,655.84	52,630,616.91	536,961.07	134,643.998	24,450,265.94	24,850,776.57	400,510.63
KRS STOCKBRIDGE UNIT	123,246.396	22,568,041.25	25,116,788.89	2,548,747.64	24,535.920	4,492,850.74	5,000,255.93	507,405.19	11,887.258	2,176,713.90	2,422,543.45	245,829.55
KRS TAURUS UNIT	-	-	-	-	513.956	15,310.98	184,934.68	169,623.70	-	4,827.04		

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority												
Insurance: KERS INS, KERS-H INS, & SPRS INS Unit Holdings												
Quarter End December 31, 2024												
UNIT OF PARTICIPATION	KERS INS				KERS-H INS				SPRS INS			
	Shares/Par	Base Cost	Base Market Value	Base Market Unrealized G/L	Shares/Par	Base Cost	Base Market Value	Base Market Unrealized G/L	Shares/Par	Base Cost	Base Market Value	Base Market Value
Grand Total	9,255,095.74	1,425,830,892.20	1,736,668,568.89	310,837,676.69	3,523,884.26	524,058,048.85	685,393,447.04	161,335,398.19	1,419,401.98	213,616,053.92	276,344,413.48	62,728,359.56
KRS INS ABSOLUTE RETURN UNIT	53,131.183	6,762,886.68	7,043,061.97	280,175.29	35,280.207	3,712,801.08	4,676,739.16	963,938.08	13,230.268	1,364,765.34	1,753,802.41	389,037.07
KRS INS ADAMS STREET A1 UNIT	54,680.218	9,554,858.82	10,492,979.42	938,120.60	29,416.000	5,140,172.42	5,644,847.33	504,674.91	11,362.845	1,985,551.19	2,180,497.87	194,946.68
KRS INS ADAMS STREET B1 UNIT	63,554.582	9,516,084.41	9,897,987.55	381,903.14	34,190.090	5,119,312.65	5,324,762.98	205,450.33	13,206.988	1,977,493.77	2,056,855.68	79,361.91
KRS INS ADAMS STREET III A1	31,845.734	3,311,350.13	3,435,794.30	124,444.17	4,342.041	451,489.62	468,457.09	16,967.47	3,383.661	351,836.10	365,058.73	13,222.63
KRS INS ADAMS STREET III B1	35,338.521	2,472,520.29	2,548,493.63	75,973.34	4,818.301	337,120.84	347,479.44	10,358.60	3,754.783	262,709.59	270,782.15	8,072.56
KRS INS AMERRA AGRU UNIT	28,822.952	2,897,182.51	2,145,860.04	-751,322.47	23,372.657	2,349,338.60	1,740,087.23	-609,251.37	8,784.825	883,020.79	654,027.56	-228,993.23
KRS INS AMERRA UNIT	4,539.572	809,376.98	757,986.08	-51,390.90	3,681.157	656,327.96	614,653.94	-41,674.02	1,383.596	246,686.71	231,023.22	-15,663.49
KRS INS ARCTOS SPORTS II UNIT	63,295.194	9,616,038.64	12,363,560.12	2,747,521.48	2,751.965	418,088.84	537,546.10	119,457.26	2,751.965	418,088.84	537,546.10	119,457.26
KRS ARROWMARK UNIT	198,111.345	25,774,754.62	52,835,324.37	27,060,569.75	123,155.934	16,023,046.22	32,845,083.76	16,822,037.54	45,477.526	5,916,811.32	12,128,633.21	6,211,821.89
KRS INS BLACKROCK UNIT	545,863.999	20,637,311.29	41,373,718.14	20,736,406.85	286,589.094	8,114,218.36	21,721,997.45	13,607,779.09	99,547.525	2,216,937.68	7,545,196.69	5,328,259.01
KRS INS BLUE TORCH UNIT	66,846.874	12,788,844.21	11,985,437.55	-803,406.66	35,138.313	6,722,504.50	6,300,190.73	-422,313.77	13,611.843	2,604,155.83	2,440,561.31	-163,594.52
KRS INS BNYM CUSTODY FEE UNIT	-95,986.406	-95,986.41	-95,986.41	0.00	-37,865.646	-37,865.65	-37,865.65	0.00	-15,326.189	-15,326.19	-15,326.19	0.00
KRS INS BTG UNIT	10,091.031	477,595.97	950,259.64	472,663.67	6,841.369	323,795.10	644,243.08	320,447.98	2,595.505	122,842.49	244,415.43	121,572.94
KRS INS CASH UNIT	395,901.412	41,781,166.70	44,880,138.70	3,098,972.00	128,902.567	15,561,892.26	14,612,640.63	-949,251.63	58,754.644	6,654,586.12	6,660,538.46	5,952.34
KRS INS CERES FARMS UNIT	160,000.000	16,000,000.00	16,000,000.00	0.00	63,750.000	6,375,000.00	6,375,000.00	0.00	26,250.000	2,625,000.00	2,625,000.00	0.00
KRS INS DB PRIVATE EQU UNIT	7,623.424	3,259,463.51	2,061,858.23	-1,197,605.28	6,328.715	2,705,898.54	1,711,686.65	-994,211.89	1,417.046	605,872.36	383,259.27	-222,613.09
KRS INS DIVCOWEST IV UNIT	110.902	0.00	58,426.88	58,426.88	83.118	0.00	43,789.34	43,789.34	31.306	0.00	16,493.05	16,493.05
KRS INS DOMESTIC EQUITY UNIT	365,012.648	91,491,170.93	126,335,072.93	34,843,902.00	146,688.259	34,311,293.66	50,770,492.47	16,459,198.81	59,666.948	13,689,110.69	20,651,416.51	6,962,305.82
KRS INS GLOBAL FIXED UNIT	171,685.164	25,067,392.47	24,959,733.36	-107,659.11	7,395.852	1,451,098.59	1,075,215.18	-375,883.41	38,916.153	5,719,135.74	5,657,663.01	-61,472.73
KRS INS GREENFIELD VII UNIT	316.661	168,291.53	96,436.08	-71,855.45	237.328	126,129.57	127,275.97	-53,853.60	89.333	47,475.85	27,205.51	-20,270.34
KRS INS HARRISON UNIT	171,741.842	37,252,431.13	35,869,374.78	-1,383,056.35	56,020.957	11,182,105.90	11,700,332.77	518,226.87	21,455.354	4,283,241.58	4,481,086.99	197,845.41
KRS INS IFM INFRAST DEBT UNIT	34,930.160	5,764,949.16	5,337,675.16	-427,274.00	19,654.433	3,243,811.15	3,300,392.45	-240,418.70	6,621.606	1,092,843.31	1,011,847.12	-80,996.19
KRS INS INTERNAL EQUITY UNIT	746,717.125	197,813,357.54	324,368,414.30	126,555,056.76	293,418.271	61,920,960.88	127,458,733.84	65,537,772.96	117,322.961	26,892,159.23	50,964,229.35	24,072,070.12
KRS INS INTERNAL PRIVATE	322,386.519	33,780,351.37	38,337,215.11	4,556,863.74	-	-	-	-	-	-	-	-
KRS INS INTERNAL REAL ESTATE	200,312.912	20,700,515.03	21,214,448.43	513,933.40	-	-	-	-	-	-	-	-
KRS INS INTERNAL REAL RETURN	399,209.955	39,935,909.53	44,738,460.04	4,802,550.51	143,349.370	15,227,073.74	16,064,804.95	837,731.21	65,623.280	6,962,974.56	7,354,236.67	391,262.11
KRS INS INTL EQ UNIT	1,239,349.618	212,403,813.06	228,150,330.67	15,746,517.61	457,378.783	75,370,472.59	84,198,291.64	8,827,819.05	189,850.558	31,386,839.69	34,949,353.24	3,562,513.55
KRS INS L-A-VII UNIT	11,329.429	997,840.89	705,370.91	-292,469.98	8,491.074	747,852.50	528,654.76	-219,197.74	3,198.149	281,677.48	199,116.94	-82,560.54
KRS INS LIQUID CORE FIXED UNIT	1,424,995.167	189,167,855.40	188,531,305.15	-636,550.25	550,621.373	72,396,542.86	72,848,925.04	452,382.18	211,116.700	27,807,555.61	27,931,399.07	123,843.46
KRS INS LIQUID HY FI UNIT	586,684.183	102,354,074.08	103,919,421.55	1,565,347.47	155,750.010	28,048,552.74	27,588,013.13	-460,539.61	62,257.367	11,294,432.01	11,027,652.96	-266,779.05
KRS INS MAGNETAR MTP	0.146	831.79	0.15	-831.64	0.115	677.90	0.12	-677.78	0.042	399.36	0.04	-399.32
KRS INS MARITIME PARTNERS UNIT	119,024.141	12,331,962.69	12,842,637.09	510,674.40	22,915.568	2,374,257.13	2,472,576.75	98,319.62	11,970.818	1,240,283.43	1,291,644.45	51,361.02
KRS INS MESA WEST CORE UNIT	32,110.702	6,488,114.11	5,092,763.89	-1,395,350.22	27,534.291	5,563,648.66	4,366,944.17	-1,196,704.49	10,315.876	2,084,490.40	1,636,100.04	-448,390.36
KRS INS MESA WEST IV UNIT	13,466.092	1,284,291.48	900,267.02	-384,024.46	10,071.114	960,505.67	673,297.92	-287,207.75	3,850.167	367,198.06	257,400.47	-109,797.59
KRS INS MULTI SECTOR CREDIT FI	212,837.305	23,827,227.52	39,584,929.49	15,757,701.97	127,352.658	14,203,992.22	23,685,913.46	9,481,921.24	43,970.794	4,890,817.97	8,177,987.31	3,287,169.34
KRS INS OBERLAND UNIT	1,401.601	0.00	192,270.98	192,270.98	396.026	0.00	54,326.66	54,326.66	92.711	0.00	12,718.05	12,718.05
KRS INS PE 2010 UNIT	30,189.150	7,108,407.29	8,741,916.03	1,633,508.74	14,379.433	3,388,432.15	4,163,873.31	775,441.16	6,394.613	1,506,319.23	1,851,697.38	345,378.15
KRS INS PE 2011 UNIT	-	-	-	-	14,014.279	3,068,153.93	4,814,639.45	1,746,485.52	6,673.458	1,461,187.77	2,292,682.64	831,494.87
KRS INS PE 2012 A UNIT	-	-	-	-	286.649	117,612.87	109,292.80	-8,320.07	178.393	73,196.60	68,017.23	-5,179.37
KRS INS PE 2012 B UNIT	-	-	-	-	2,709.283	378,460.36	502,979.64	124,519.28	1,672.884	233,660.53	310,571.69	76,911.16
KRS INS PE 2013 UNIT	-	-	-	-	13,098.394	3,825,097.75	5,255,338.71	1,430,240.96	8,151.630	2,380,511.17	3,270,597.68	890,086.51
KRS INS PE 2014 UNIT	-	-	-	-	13,896.267	1,369,767.82	1,724,708.39	354,940.57	8,648.187	852,459.27	1,073,353.06	220,893.79
KRS INS PE 2015 UNIT	-	-	-	-	9,942.327	1,423,530.25	3,569,838.62	2,146,308.37	6,187.495	885,916.62	2,221,648.78	1,335,732.16
KRS INS PE 2016 UNIT	63,571.549	7,688,652.46	16,475,081.03	8,786,428.57	38,771.664	4,689,234.05	10,047,990.27	5,358,756.22	15,019.662	1,816,552.68	3,892,466.87	2,075,914.19
KRS INS PE 2017 UNIT	37,076.089	5,717,501.48	8,107,494.64	2,389,993.16	22,612.443	3,487,062.62	4,944,703.32	1,457,640.70	8,759.705	1,350,833.56	1,915,500.35	564,666.79
KRS INS PE 2018 UNIT	40,022.385	3,327,537.90	8,127,796.97	4,800,259.07	11,308.406	940,201.81	2,296,525.51	1,356,323.70	2,647.314	220,102.14	537,619.90	317,517.76
KRS INS PE 2019 UNIT	84,115.447	11,979,741.93	21,226,047.12	9,246,305.19	6,008.247	855,696.12	1,516,146.42	660,450.30	2,403.300	342,278.62	606,458.87	264,180.25
KRS INS PE 2021 UNIT	103,182.620	10,935,015.47	15,409,542.69	4,474,527.22	48,633.422	5,154,039.83	7,263,033.18	2,108,993.35	19,053.197	2,019,206.40	2,845,450.64	826,244.24
KRS INS POST-2015 REAL ESTATE	92,141.930	7,959,438.34	10,492,243.95	2,532,805.61	68,911.755	5,949,712.69	7,847,013.24	1,897,300.55	26,344.824	2,273,830.41	2,999,897.23	726,066.82
KRS INS PRIVATE CREDIT FI UNIT	206,262.873	45,273,239.26	46,826,533.99	1,553,294.73	124,550.419	27,328,821.46	28,275,880.89	947,059.43	44,841.119	9,835,365.09	10,179,990.96	344,625.87
KRS INS PROLOGUS UNIT	46,483.841	9,689,750.95	16,474,823.94	6,785,072.99	34,764.411	7,246,840.21	12,321,313.69	5,074,473.48	13,290.350	2,770,450.37	4,710,408.34	1,939,957.97
KRS INS REAL RETURN UNIT	68,470.710	11,491,038.74	20,530,973.89	9,039,935.15	31,309.189	5,461,941.77	9,388,074.72	3,926,132.95	12,221.268	2,097,735.51	3,664,552.83	1,566,817.32
KRS INS RUBENSTEIN PF II UNIT	6,525.019	1,109,966.51	292,887.56	-817,078.95	4,890.340	831,890.81	219,511.97	-612,378.84	1,841.942	313,332.63	82,678.98	-230,653.65
KRS INS SABA CAPITAL UNIT	90,502.533	9,893,531.71	10,091,322.13	197,790.42	50,279.186	5,490,570.37	5,606,290.18	115,719.81	10,055.837	1,098,114.42	1,121,258.01	23,143.59
KRS INS SHENKMAN UNIT	522,332.086	95,017,064.37	96,104,290.53	1,087,226.16	124,981.638	22,777,041.61	22,995,469.69	218,428.08	50,902.252	9,273,247.23	9,365,545.30	92,298.07

Kentucky Public Pensions Authority

Security Litigation Report

Quarter Ending: December 31, 2024

Claims Filed during the Quarter (pg 3):

13

Proceeds Received during the Quarter (pg 4):

\$279,203.61

Kentucky Retirement Systems	
Quarterly Securities Litigation Report	
Quarter Ended 12/31/24	
Total Claims Filed	
No Claim on File	9
Fiscal Year 1997	1
Fiscal Year 1998	2
Fiscal Year 1999	5
Fiscal Year 2000	9
Fiscal Year 2001	8
Fiscal Year 2002	33
Fiscal Year 2003	45
Fiscal Year 2004	38
Fiscal Year 2005	89
Fiscal Year 2006	150
Fiscal Year 2007	70
Fiscal Year 2008	73
Fiscal Year 2009	85
Fiscal Year 2010	65
Fiscal Year 2011	69
Fiscal Year 2012	54
Fiscal Year 2013	48
Fiscal Year 2014	65
Fiscal Year 2015	80
Fiscal Year 2016	224
Fiscal Year 2017	140
Fiscal Year 2018	74
Fiscal Year 2019	55
Fiscal Year 2020	42
Fiscal Year 2021	43
Fiscal Year 2022	49
Fiscal Year 2023	49
Fiscal Year 2024	46
Fiscal Year 2025	22
Total Filed	1,742
Proceeds Received	
Fiscal Year 1998	\$67,682
Fiscal Year 1999	\$233,370
Fiscal Year 2000	\$303,918
Fiscal Year 2001	\$415,502
Fiscal Year 2002	\$387,318
Fiscal Year 2003	\$519,059
Fiscal Year 2004	\$1,080,920
Fiscal Year 2005	\$1,645,440
Fiscal Year 2006	\$797,535
Fiscal Year 2007	\$5,398,363
Fiscal Year 2008	\$5,402,336
Fiscal Year 2009	\$3,504,682
Fiscal Year 2010	\$2,776,544
Fiscal Year 2011	\$1,292,484
Fiscal Year 2012	\$468,657
Fiscal Year 2013	\$1,070,427
Fiscal Year 2014	\$308,704
Fiscal Year 2015	\$23,639,565
Fiscal Year 2016	\$2,417,957
Fiscal Year 2017	\$1,886,532
Fiscal Year 2018	\$2,247,966
Fiscal Year 2019	\$1,702,272
Fiscal Year 2020	\$1,743,474
Fiscal Year 2021	\$286,420
Fiscal Year 2022	\$616,557
Fiscal Year 2023	\$259,261
Fiscal Year 2024	\$456,301
Fiscal Year 2025	\$330,060
Total Proceeds	\$61,259,308

KRS Investment Committee Meeting - Investment Review and Update

Class Action Name	TNT Status Code	Status as of Date	Class Period Start Date	Class Period End Date	Class Account Id	Claimed Account Name
The Boeing Company FAIR FUND	FILED	10/1/2024	11/28/2018	10/17/2019	956596	KRS KRS INTERNAL EQUITY
The Boeing Company FAIR FUND	FILED	10/1/2024	11/28/2018	10/17/2019	956591	KRS WESTFIELD CAPITAL
The Boeing Company FAIR FUND	FILED	10/1/2024	11/28/2018	10/17/2019	956599	KRS S P 500 INDEX
The Boeing Company FAIR FUND	FILED	10/1/2024	11/28/2018	10/17/2019	956768	KRS INS WESTFIELD CAPITAL
The Boeing Company FAIR FUND	FILED	10/1/2024	11/28/2018	10/17/2019	956774	KRS INS S P 500 INDEX
The Boeing Company FAIR FUND	FILED	10/1/2024	11/28/2018	10/17/2019	956772	KRS INS KRS INTERNAL EQUITY
APPLE INC. Securities Litigation	FILED	10/2/2024	11/2/2018	1/2/2019	956597	KRS RIVER ROAD FAV
APPLE INC. Securities Litigation	FILED	10/2/2024	11/2/2018	1/2/2019	956768	KRS INS WESTFIELD CAPITAL
APPLE INC. Securities Litigation	FILED	10/2/2024	11/2/2018	1/2/2019	956591	KRS WESTFIELD CAPITAL
APPLE INC. Securities Litigation	FILED	10/2/2024	11/2/2018	1/2/2019	909181	KRS INS RIVER ROAD FAV
APPLE INC. Securities Litigation	FILED	10/2/2024	11/2/2018	1/2/2019	956774	KRS INS S P 500 INDEX
APPLE INC. Securities Litigation	FILED	10/2/2024	11/2/2018	1/2/2019	956599	KRS S P 500 INDEX
Y-mAbs Therapeutics securities litigation	FILED	10/7/2024	10/6/2020	10/28/2022	956588	KRS NTGI STRUCTURED
Y-mAbs Therapeutics securities litigation	FILED	10/7/2024	10/6/2020	10/28/2022	956765	KRS INS NTGI STRUCTURED
OKTA INC. Securities Litigation	FILED	10/28/2024	3/3/2022	8/31/2022	956768	KRS INS WESTFIELD CAPITAL
OKTA INC. Securities Litigation	FILED	10/28/2024	3/3/2022	8/31/2022	956591	KRS WESTFIELD CAPITAL
Eagle Bancorp, Inc FairFund	FILED	10/30/2024	3/2/2015	7/17/2019	956588	KRS NTGI STRUCTURED
Eagle Bancorp, Inc FairFund	FILED	10/30/2024	3/2/2015	7/17/2019	956765	KRS INS NTGI STRUCTURED
QUALCOMM INCORPORATED (2017)	FILED	11/6/2024	1/31/2012	4/20/2017	2672591	ZKRS PEN WESTFIELD CAPITAL-SL
QUALCOMM INCORPORATED (2017)	FILED	11/6/2024	1/31/2012	4/20/2017	2672597	ZKRS INS WESTFIELD CAPITAL-SL
QUALCOMM INCORPORATED (2017)	FILED	11/6/2024	1/31/2012	4/20/2017	2672606	ZKRS PEN WESTWOOD MANAGEMEN-S
QUALCOMM INCORPORATED (2017)	FILED	11/6/2024	1/31/2012	4/20/2017	2672607	ZKRS INS WESTWOOD MANAGEMEN-S
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR3F1006002	WESTFIELD CAPITAL
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR2F1901002	STATE STREET TRANSITION
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR3F1008002	WESTWOOD MGMT
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	956596	KRS KRS INTERNAL EQUITY
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR2F1009002	INVESCO
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR3F1901002	STATE STREET TRANSITION
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	956592	KRS RIVER ROAD
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	956599	KRS S P 500 INDEX
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	956774	KRS INS S P 500 INDEX
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR2F1006002	WESTFIELD CAPITAL
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	KR2F1008002	WESTWOOD MGMT
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	956772	KRS INS KRS INTERNAL EQUITY
QUALCOMM INCORPORATED Securities Litigation	FILED	11/6/2024	2/1/2012	1/20/2017	956769	KRS INS RIVER ROAD
CABOT OIL & GAS CORPORATION Securities Litigation	FILED	11/13/2024	2/22/2016	6/12/2020	956596	KRS KRS INTERNAL EQUITY
CABOT OIL & GAS CORPORATION Securities Litigation	FILED	11/13/2024	2/22/2016	6/12/2020	956774	KRS INS S P 500 INDEX
CABOT OIL & GAS CORPORATION Securities Litigation	FILED	11/13/2024	2/22/2016	6/12/2020	956772	KRS INS KRS INTERNAL EQUITY
CABOT OIL & GAS CORPORATION Securities Litigation	FILED	11/13/2024	2/22/2016	6/12/2020	140455	KRS INS ABEL NOSER TRANSITION
CABOT OIL & GAS CORPORATION Securities Litigation	FILED	11/13/2024	2/22/2016	6/12/2020	140454	KRS ABEL NOSER TRANSITION
UNDER ARMOUR INC. Securities Litigation	FILED	11/13/2024	9/16/2015	11/1/2019	KR3F1011002	KRS INTERNAL EQUITY
UNDER ARMOUR INC. Securities Litigation	FILED	11/13/2024	9/16/2015	11/1/2019	956599	KRS S P 500 INDEX
GINKGO BIOWORKS HOLDINGS, INC. Securities Litigation	FILED	11/20/2024	5/11/2021	11/15/2021	904032	KRS PUTNAM
GINKGO BIOWORKS HOLDINGS, INC. Securities Litigation	FILED	11/20/2024	5/11/2021	11/15/2021	904033	KRS INS PUTNAM
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	956772	KRS INS KRS INTERNAL EQUITY
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	904033	KRS INS PUTNAM
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	904032	KRS PUTNAM
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	956768	KRS INS WESTFIELD CAPITAL
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	956774	KRS INS S P 500 INDEX
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	956591	KRS WESTFIELD CAPITAL
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	956599	KRS S P 500 INDEX
UBER TECHNOLOGIES INC. Securities Litigation	FILED	11/20/2024	4/11/2019	11/5/2019	956596	KRS KRS INTERNAL EQUITY
Bioventus Securities Litigation	FILED	11/29/2024	2/11/2021	11/21/2022	956588	KRS NTGI STRUCTURED
Bioventus Securities Litigation	FILED	11/29/2024	2/11/2021	11/21/2022	956765	KRS INS NTGI STRUCTURED
Fluor Corporation FAIR FUND	FILED	12/30/2024	5/6/2016	2/17/2020	956596	KRS KRS INTERNAL EQUITY
Fluor Corporation FAIR FUND	FILED	12/30/2024	5/6/2016	2/17/2020	956599	KRS S P 500 INDEX
Fluor Corporation FAIR FUND	FILED	12/30/2024	5/6/2016	2/17/2020	956772	KRS INS KRS INTERNAL EQUITY



**Transaction Detail
Reported By Transaction Category**

Report ID: IACS0008
Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code Link Ref	Shares/Par Security Id	Description Broker Transaction No./Client Ref No.	Trade Date C. Settle Date Reported Date	Price Local/Base	Cost Local/Base	Amount Local/Base	Net Gain/Loss Local/Base
CLASS ACTIONS							
CASH & CASH EQUIVALENTS							
U.S. DOLLAR							
CD	0.000 NA9123459	BNYM-20274NIELSEN HOLDINGS PLC , Securities Litigation Distri 20241008S000030 / 000000000002 KR2F10110002 : KRS INTERNAL EQUITY	10/8/2024 10/8/2024	0.000000 0.000000	124.47 124.47	124.47 124.47	124.47 124.47 Gain/Loss Local Amounts: 124.47 Long Gain/Loss Base Amounts: 124.47 Long
CD	0.000 NA9123459	BNYM-20274NIELSEN HOLDINGS PLC , Securities Litigation Distri 20241008S000040 / 000000000000 KR2F10110002 : KRS INTERNAL EQUITY	10/8/2024 10/8/2024	0.000000 0.000000	1,794.48 1,794.48	1,794.48 1,794.48	1,794.48 1,794.48 Gain/Loss Local Amounts: 1,794.48 Long Gain/Loss Base Amounts: 1,794.48 Long
CD	0.000 NA9123459	3-17-CV-2616-MBSSCAN A Corporat ion (2017)(D.S.C) Distribution 20241009S000090 / 0000000000034 KR2F19020002 : S&P 500 INDEX	10/9/2024 10/9/2024	0.000000 0.000000	27.44 27.44	27.44 27.44	27.44 27.44 Gain/Loss Local Amounts: 27.44 Long Gain/Loss Base Amounts: 27.44 Long
CD	0.000 NA9123459	14-CV-09662 (JSR)PETROBRAS - P ETROLEO BRASILEIRO S.A (2014) 20241011S000010 / 0000000000000 KR2F90010002 : CASH ACCOUNT KR2	10/11/2024 10/11/2024	0.000000 0.000000	564.47 564.47	564.47 564.47	564.47 564.47 Gain/Loss Local Amounts: 564.47 Long Gain/Loss Base Amounts: 564.47 Long
CD	0.000 NA9123459	24874HRG GROUP Securities Liti gation Distribution 2ND DISTRI 20241011S000240 / 0000000000001 KR2F10020002 : NTGI STRUCTURED	10/11/2024 10/11/2024	0.000000 0.000000	62.72 62.72	62.72 62.72	62.72 62.72 Gain/Loss Local Amounts: 62.72 Long Gain/Loss Base Amounts: 62.72 Long
CD	0.000 NA9123459	26815OCLARO INC Securities Lit igation Distribution 1ST DISTR 20241015S000580 / 0000000000000 KR2F10020002 : NTGI STRUCTURED	10/15/2024 10/15/2024	0.000000 0.000000	1,278.24 1,278.24	1,278.24 1,278.24	1,278.24 1,278.24 Gain/Loss Local Amounts: 1,278.24 Long Gain/Loss Base Amounts: 1,278.24 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CD	0.000	3-17-CV-2616-MBSSCANA Corporat	10/17/2024	0.000000	174.75	174.75	174.75
	NA9123459	ion (2017)(D.S.C) Distribution		0.000000	174.75	174.75	174.75
		20241017S000030 / 000000000002	10/17/2024				
		KR2F10110002 : KRS INTERNAL EQUITY					Gain/Loss Local Amounts: 174.75 Long Gain/Loss Base Amounts: 174.75 Long
CD	0.000	SIGNET SECURITIES LITIGATION S	10/21/2024	0.000000	95.03	95.03	95.03
	NA9123459	ETLEMENT FUND		0.000000	95.03	95.03	95.03
		20241022S000040 / D4BD4532E729	10/21/2024				
		KR2F20080002 : LAZARD ASSET MGMT					Gain/Loss Local Amounts: 95.03 Long Gain/Loss Base Amounts: 95.03 Long
CD	0.000	3535COMMUNITY HEALTH SYSTEMS,	10/23/2024	0.000000	102.71	102.71	102.71
	NA9123459	INC. (2011) Distribution 2ND D		0.000000	102.71	102.71	102.71
		20241023S000080 / 0000000000023	10/23/2024				
		KR2F19020002 : S&P 500 INDEX					Gain/Loss Local Amounts: 102.71 Long Gain/Loss Base Amounts: 102.71 Long
CD	0.000	23815INTERFACE, INC., Securiti	10/28/2024	0.000000	31.07	31.07	31.07
	NA9123459	es Litigation Distribution 1ST		0.000000	31.07	31.07	31.07
		20241028S000120 / 0000000000000	10/28/2024				
		KR2F10020002 : NTGI STRUCTURED					Gain/Loss Local Amounts: 31.07 Long Gain/Loss Base Amounts: 31.07 Long
CD	0.000	23716PRECIGEN INC., Securities	10/30/2024	0.000000	1,440.19	1,440.19	1,440.19
	NA9123459	Litigation Distribution 1ST D		0.000000	1,440.19	1,440.19	1,440.19
		20241030S000130 / 000000006373	10/30/2024				
		KR2F10020002 : NTGI STRUCTURED					Gain/Loss Local Amounts: 1,440.19 Long Gain/Loss Base Amounts: 1,440.19 Long
CD	0.000	1-17-cv-00241-WMR THE SOUTHERN	10/31/2024	0.000000	32.72	32.72	32.72
	NA9123459	COMPANY Distribution 2ND DISTR		0.000000	32.72	32.72	32.72
		20241031S000010 / 0000000000008	10/31/2024				
		KR2F19010002 : STATE STREET TRANSIT					Gain/Loss Local Amounts: 32.72 Long Gain/Loss Base Amounts: 32.72 Long
CD	0.000	26513WELLS FARGO & COMPANY Sec	10/31/2024	0.000000	21,844.69	21,844.69	21,844.69
	NA9123459	urities Litigation Distributio		0.000000	21,844.69	21,844.69	21,844.69
		20241031S000180 / 0000000000000	10/31/2024				
		KR2F10110002 : KRS INTERNAL EQUITY					Gain/Loss Local Amounts: 21,844.69 Long Gain/Loss Base Amounts: 21,844.69 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CD	0.000	26513WELLS FARGO & COMPANY Sec	10/31/2024	0.000000	45,412.60	45,412.60	45,412.60
	NA9123459	urities Litigation Distributio		0.000000	45,412.60	45,412.60	45,412.60
		20241031S000220 / 000000000000	10/31/2024				Gain/Loss Local Amounts: 45,412.60 Long
		KR2F19020002 : S&P 500 INDEX					Gain/Loss Base Amounts: 45,412.60 Long
CD	0.000	HARBORVIEW MORTGAGE LOAN TRUST	11/1/2024	0.000000	24.76	24.76	24.76
	NA9123459	LITIGATION SEC LIT PROCEEDS		0.000000	24.76	24.76	24.76
		20241104S000050 / ACDCEED19AD8	11/1/2024				Gain/Loss Local Amounts: 24.76 Long
		KR2F90010002 : CASH ACCOUNT KR2					Gain/Loss Base Amounts: 24.76 Long
CD	0.000	WILMINGTON TRUST (SEC) DISTRIB	11/1/2024	0.000000	178.74	178.74	178.74
	NA9123459	UTION SEC LIT PROCEEDS		0.000000	178.74	178.74	178.74
		20241104S000300 / ACDCEED19AD8	11/1/2024				Gain/Loss Local Amounts: 178.74 Long
		KR2F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 178.74 Long
CD	0.000	1-16-cv-01031-TSE-MSNORBITAL A	11/5/2024	0.000000	27.75	27.75	27.75
	NA9123459	TK, INC. (2016) Distribution 2		0.000000	27.75	27.75	27.75
		20241105S000120 / 000000000055	11/5/2024				Gain/Loss Local Amounts: 27.75 Long
		KR2F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 27.75 Long
CD	0.000	23703TACTILE SYSTEMS TECHNOLOG	11/15/2024	0.000000	8,603.25	8,603.25	8,603.25
	NA9123459	Y. INC, Securities Litigation		0.000000	8,603.25	8,603.25	8,603.25
		20241115S000080 / 000000000000	11/15/2024				Gain/Loss Local Amounts: 8,603.25 Long
		KR2F10130002 : NEXT CENTURY GROWTH					Gain/Loss Base Amounts: 8,603.25 Long
CD	0.000	23703TACTILE SYSTEMS TECHNOLOG	11/15/2024	0.000000	232.05	232.05	232.05
	NA9123459	Y. INC, Securities Litigation		0.000000	232.05	232.05	232.05
		20241115S000770 / 000000000000	11/15/2024				Gain/Loss Local Amounts: 232.05 Long
		KR2F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 232.05 Long
CD	0.000	4 14-CV-11191GENERAL MOTORS CO	11/19/2024	0.000000	139.35	139.35	139.35
	NA9123459	MPANY Distribution 3RD DISTRIB		0.000000	139.35	139.35	139.35
		20241119S000010 / 000000000007	11/19/2024				Gain/Loss Local Amounts: 139.35 Long
		KR2F19010002 : STATE STREET TRANSIT					Gain/Loss Base Amounts: 139.35 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CD	0.000	20417J.P. MORGAN CHASE BANK, N NA9123459 .A. ADR-FX Distribution 1ST DI 20241126S000020 / 000000000919 KR2F10120002 : RIVER ROAD FAV	11/26/2024	0.000000	3.16	3.16	3.16
			11/26/2024	0.000000	3.16	3.16	3.16
						Gain/Loss Local Amounts: 3.16 Long Gain/Loss Base Amounts: 3.16 Long	
CD	0.000	17473DAVITA INC. Distribution NA9123459 2ND DISTRIBUTION PROCEEDS FOR 20241129S000030 / 000000000001 KR2F10120002 : RIVER ROAD FAV	11/29/2024	0.000000	672.22	672.22	672.22
			11/29/2024	0.000000	672.22	672.22	672.22
						Gain/Loss Local Amounts: 672.22 Long Gain/Loss Base Amounts: 672.22 Long	
CD	0.000	24906CLOOPEN GROUP HOLDING LIM NA9123459 ITED Securities Litigation Dis 20241129S000100 / 000000006377 KR2F25050002 : JP MORGAN EMERG MKTS	11/29/2024	0.000000	91,478.03	91,478.03	91,478.03
			11/29/2024	0.000000	91,478.03	91,478.03	91,478.03
						Gain/Loss Local Amounts: 91,478.03 Long Gain/Loss Base Amounts: 91,478.03 Long	
CD	0.000	17473DAVITA INC. Distribution NA9123459 2ND DISTRIBUTION PROCEEDS FOR 20241129S000200 / 000000000001 KR2F10110002 : KRS INTERNAL EQUITY	11/29/2024	0.000000	1,741.80	1,741.80	1,741.80
			11/29/2024	0.000000	1,741.80	1,741.80	1,741.80
						Gain/Loss Local Amounts: 1,741.80 Long Gain/Loss Base Amounts: 1,741.80 Long	
CD	0.000	17473DAVITA INC. Distribution NA9123459 2ND DISTRIBUTION PROCEEDS FOR 20241129S000250 / 000000000001 KR2F19020002 : S&P 500 INDEX	11/29/2024	0.000000	214.27	214.27	214.27
			11/29/2024	0.000000	214.27	214.27	214.27
						Gain/Loss Local Amounts: 214.27 Long Gain/Loss Base Amounts: 214.27 Long	
CD	0.000	20603MCKESSON CORPORATION, Sec NA9123459 urities Litigation Distributio 20241205S000080 / 000000000011 KR2F10110002 : KRS INTERNAL EQUITY	12/5/2024	0.000000	1,192.93	1,192.93	1,192.93
			12/5/2024	0.000000	1,192.93	1,192.93	1,192.93
						Gain/Loss Local Amounts: 1,192.93 Long Gain/Loss Base Amounts: 1,192.93 Long	
CD	0.000	20603MCKESSON CORPORATION, Sec NA9123459 urities Litigation Distributio 20241205S000140 / 000000000011 KR2F19020002 : S&P 500 INDEX	12/5/2024	0.000000	4,801.80	4,801.80	4,801.80
			12/5/2024	0.000000	4,801.80	4,801.80	4,801.80
						Gain/Loss Local Amounts: 4,801.80 Long Gain/Loss Base Amounts: 4,801.80 Long	



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CD	0.000	2-12-cv-00555-DGCFIRST SOLAR, NA9123459 INC. Distribution 2ND DISTRIBU 20241205S000150 / 000000000003 KR2F19020002 : S&P 500 INDEX	12/5/2024 12/5/2024	0.000000 0.000000	154.33 154.33	154.33 154.33	154.33 154.33
						Gain/Loss Local Amounts: 154.33 Long Gain/Loss Base Amounts: 154.33 Long	
CD	0.000	21639AAC HOLDINGS, INC., Secur NA9123459 ities Litigation Distribution 20241205S000200 / 000000000000 KR2F10020002 : NTGI STRUCTURED	12/5/2024 12/5/2024	0.000000 0.000000	1,697.60 1,697.60	1,697.60 1,697.60	1,697.60 1,697.60
						Gain/Loss Local Amounts: 1,697.60 Long Gain/Loss Base Amounts: 1,697.60 Long	
CD	0.000	16943PRECISION CASTPARTS CORP. NA9123459 (2016) (ACQUISITION) Distribu 20241210S000230 / 000000000001 KR2F19020002 : S&P 500 INDEX	12/10/2024 12/10/2024	0.000000 0.000000	15.03 15.03	15.03 15.03	15.03 15.03
						Gain/Loss Local Amounts: 15.03 Long Gain/Loss Base Amounts: 15.03 Long	
CD	0.000	10 Civ. 2515 (DAB)FUQI INTERNA NA9123459 TIONAL, INC. Distribution 2ND 20241211S000170 / 000000000002 KR2F10020002 : NTGI STRUCTURED	12/11/2024 12/11/2024	0.000000 0.000000	87.56 87.56	87.56 87.56	87.56 87.56
						Gain/Loss Local Amounts: 87.56 Long Gain/Loss Base Amounts: 87.56 Long	
CD	0.000	20584CITI SPONSORED AMERICAN D NA9123459 EPOSITARY RECEIPTS (CITIBANK N 20241216S000010 / 000000002412 KR2F20050002 : AMERICAN CENTURY	12/16/2024 12/16/2024	0.000000 0.000000	1.66 1.66	1.66 1.66	1.66 1.66
						Gain/Loss Local Amounts: 1.66 Long Gain/Loss Base Amounts: 1.66 Long	
CD	0.000	FIRST SOLAR, INC SEC LIT NA9123459 20241223S000090 / AE78D4160193 KR2F19020002 : S&P 500 INDEX	12/20/2024 12/20/2024	0.000000 0.000000	75.04 75.04	75.04 75.04	75.04 75.04
						Gain/Loss Local Amounts: 75.04 Long Gain/Loss Base Amounts: 75.04 Long	
CD	0.000	20274NIELSEN HOLDINGS PLC, Sec NA9123459 urities Litigation Distributio 20241224S000010 / 000000000002 KR2F10120002 : RIVER ROAD FAV	12/24/2024 12/24/2024	0.000000 0.000000	160.19 160.19	160.19 160.19	160.19 160.19
						Gain/Loss Local Amounts: 160.19 Long Gain/Loss Base Amounts: 160.19 Long	



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CD	0.000	17319ALEXION PHARMACEUTICALS, NA9123459 INC. Securities Litigation Dis	12/31/2024	0.000000	7,269.58	7,269.58	7,269.58
		20241231S000440 / 000000000003	12/31/2024	0.000000	7,269.58	7,269.58	7,269.58
		KR2F19020002 : S&P 500 INDEX					Gain/Loss Local Amounts: 7,269.58 Long Gain/Loss Base Amounts: 7,269.58 Long
TOTAL U.S. DOLLAR CASH & CASH EQUIVALENTS:					191,756.68	191,756.68	191,756.68
					191,756.68	191,756.68	191,756.68
TOTAL CASH & CASH EQUIVALENTS CLASS ACTIONS:					191,756.68	191,756.68	191,756.68
EQUITY							
CANADIAN DOLLAR							
CD	0.000	ORD INST: BSDTUS33GBL THE BANK NCB63VJ03 OF NEW YORK MELLON 02149,MA,U	12/4/2024	0.000000	109.30	109.30	109.30
		20241205S000010 / 0469334	12/4/2024	0.000000	77.71	77.71	77.71
		KR2F20010002 : KRS NONUS ACWI-EX US					Gain/Loss Local Amounts: 109.30 Long Gain/Loss Base Amounts: 77.71 Long
U.S. DOLLAR							
CD	0.000	4-17-CV-0449-ALMADEPTUS HEALTH 006855100 CSDRADJ:RAF-ERU-IAS-19371791	10/22/2024	0.000000	7.59	7.59	7.59
		20241023S000080	10/22/2024	0.000000	7.59	7.59	7.59
		KR2F10020002 : NTGI STRUCTURED					Gain/Loss Local Amounts: 7.59 Long Gain/Loss Base Amounts: 7.59 Long
CD	0.000	18849ENDO INTERNATIONAL PLC, S G30401106 CSDRADJ:RAF-ERU-IAS-21498490	12/30/2024	0.000000	1,010.87	1,010.87	1,010.87
		20241231S000010	12/30/2024	0.000000	1,010.87	1,010.87	1,010.87
		KR2F90010002 : CASH ACCOUNT KR2					Gain/Loss Local Amounts: 1,010.87 Long Gain/Loss Base Amounts: 1,010.87 Long
CD	0.000	18849ENDO INTERNATIONAL PLC, S G30401106 CSDRADJ:RAF-ERU-IAS-21497976	12/30/2024	0.000000	356.05	356.05	356.05
		20241231S000430	12/30/2024	0.000000	356.05	356.05	356.05
		KR2F19020002 : S&P 500 INDEX					Gain/Loss Local Amounts: 356.05 Long Gain/Loss Base Amounts: 356.05 Long
CD	0.000	16915SIGNET JEWELERS LIMITED (G81276100 CSDRADJ:RAF-ERU-IAS-19105015	10/10/2024	0.000000	34.95	34.95	34.95
		20241011S000160	10/10/2024	0.000000	34.95	34.95	34.95
		KR2F19020002 : S&P 500 INDEX					Gain/Loss Local Amounts: 34.95 Long Gain/Loss Base Amounts: 34.95 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR2G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
Transaction No./Client Ref No.			Reported Date				
TOTAL U.S. DOLLAR EQUITY:					1,409.46	1,409.46	1,409.46
					1,409.46	1,409.46	1,409.46
TOTAL EQUITY CLASS ACTIONS:					1,487.17	1,487.17	1,487.17
TOTAL CLASS ACTIONS:					193,243.85	193,243.85	193,243.85
TOTAL TRANSACTIONS BASE:					193,243.85	193,243.85	193,243.85



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR3G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CLASS ACTIONS							
CASH & CASH EQUIVALENTS							
U.S. DOLLAR							
CD	0.000	16915SIGNET JEWELERS LIMITED (10/10/2024	0.000000	21.18	21.18	21.18
	NA9123459	2016) Distribution 3RD DISTRIB		0.000000	21.18	21.18	21.18
		20241010S000130 / 0000000000004	10/10/2024				
		KR3F10110002 : KRS INTERNAL EQUITY					Gain/Loss Local Amounts: 21.18 Long Gain/Loss Base Amounts: 21.18 Long
CD	0.000	14-CV-09662 (JSR)PETROBRAS - P	10/11/2024	0.000000	209.12	209.12	209.12
	NA9123459	ETROLEO BRASILEIRO S.A (2014)		0.000000	209.12	209.12	209.12
		20241011S000010 / 0000000000000	10/11/2024				
		KR3F29010002 : NON-US TRANS ACCT					Gain/Loss Local Amounts: 209.12 Long Gain/Loss Base Amounts: 209.12 Long
CD	0.000	24874HRG GROUP Securities Liti	10/11/2024	0.000000	27.95	27.95	27.95
	NA9123459	gation Distribution 2ND DISTR		0.000000	27.95	27.95	27.95
		20241011S000230 / 0000000000001	10/11/2024				
		KR3F10020002 : NTGI STRUCTURED					Gain/Loss Local Amounts: 27.95 Long Gain/Loss Base Amounts: 27.95 Long
CD	0.000	26815OCLARO INC Securities Lit	10/15/2024	0.000000	545.11	545.11	545.11
	NA9123459	igation Distribution 1ST DISTR		0.000000	545.11	545.11	545.11
		20241015S000590 / 0000000000000	10/15/2024				
		KR3F10020002 : NTGI STRUCTURED					Gain/Loss Local Amounts: 545.11 Long Gain/Loss Base Amounts: 545.11 Long
CD	0.000	3-17-CV-2616-MBSSCANA Corporat	10/17/2024	0.000000	91.96	91.96	91.96
	NA9123459	ion (2017)(D.S.C) Distribution		0.000000	91.96	91.96	91.96
		20241017S000030 / 0000000000002	10/17/2024				
		KR3F10110002 : KRS INTERNAL EQUITY					Gain/Loss Local Amounts: 91.96 Long Gain/Loss Base Amounts: 91.96 Long
CD	0.000	23548Wells Fargo & Company (SE	10/28/2024	0.000000	1,119.61	1,119.61	1,119.61
	NA9123459	C) Distribution 3RD DISTRIBUTI		0.000000	1,119.61	1,119.61	1,119.61
		20241028S000040 / 0000000000299	10/28/2024				
		KR3F90010002 : CASH ACCOUNT KR3					Gain/Loss Local Amounts: 1,119.61 Long Gain/Loss Base Amounts: 1,119.61 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR3G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code Link Ref	Shares/Par Security Id	Description Broker	Trade Date C. Settle Date Reported Date	Price Local/Base	Cost Local/Base	Amount Local/Base	Net Gain/Loss Local/Base
CD	0.000 NA9123459	26513WELLS FARGO & COMPANY Sec urities Litigation Distributio 20241030S000040 / 000000000000 KR3F10110002 : KRS INTERNAL EQUITY	10/30/2024 10/30/2024	0.000000 0.000000	9,622.82 9,622.82	9,622.82 9,622.82	9,622.82 9,622.82 Gain/Loss Local Amounts: 9,622.82 Long Gain/Loss Base Amounts: 9,622.82 Long
CD	0.000 NA9123459	23716PRECIGEN INC., Securities Litigation Distribution 1ST D 20241030S000130 / 000000006373 KR3F10020002 : NTGI STRUCTURED	10/30/2024 10/30/2024	0.000000 0.000000	629.11 629.11	629.11 629.11	629.11 629.11 Gain/Loss Local Amounts: 629.11 Long Gain/Loss Base Amounts: 629.11 Long
CD	0.000 NA9123459	26513WELLS FARGO & COMPANY Sec urities Litigation Distributio 20241031S000220 / 000000000000 KR3F19020002 : S&P 500 INDEX	10/31/2024 10/31/2024	0.000000 0.000000	20,590.06 20,590.06	20,590.06 20,590.06	20,590.06 20,590.06 Gain/Loss Local Amounts: 20,590.06 Long Gain/Loss Base Amounts: 20,590.06 Long
CD	0.000 NA9123459	1-16-cv-01031-TSE-MSNORBITAL A TK, INC. (2016) Distribution 2 20241105S000140 / 000000000055 KR3F10020002 : NTGI STRUCTURED	11/5/2024 11/5/2024	0.000000 0.000000	13.10 13.10	13.10 13.10	13.10 13.10 Gain/Loss Local Amounts: 13.10 Long Gain/Loss Base Amounts: 13.10 Long
CD	0.000 NA9123459	23703TACTILE SYSTEMS TECHNOLOG Y. INC, Securities Litigation 20241115S000080 / 000000000000 KR3F10130002 : NEXT CENTURY GROWTH	11/15/2024 11/15/2024	0.000000 0.000000	3,910.20 3,910.20	3,910.20 3,910.20	3,910.20 3,910.20 Gain/Loss Local Amounts: 3,910.20 Long Gain/Loss Base Amounts: 3,910.20 Long
CD	0.000 NA9123459	23703TACTILE SYSTEMS TECHNOLOG Y. INC, Securities Litigation 20241115S000740 / 000000000000 KR3F10020002 : NTGI STRUCTURED	11/15/2024 11/15/2024	0.000000 0.000000	93.66 93.66	93.66 93.66	93.66 93.66 Gain/Loss Local Amounts: 93.66 Long Gain/Loss Base Amounts: 93.66 Long
CD	0.000 NA9123459	4 14-CV-11191GENERAL MOTORS CO MPANY Distribution 3RD DISTRIB 20241119S000060 / 000000000007 KR3F19020002 : S&P 500 INDEX	11/19/2024 11/19/2024	0.000000 0.000000	58.59 58.59	58.59 58.59	58.59 58.59 Gain/Loss Local Amounts: 58.59 Long Gain/Loss Base Amounts: 58.59 Long



**Transaction Detail
Reported By Transaction Category**

Report ID: IACS0008
Base Currency: USD

KR3G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code Link Ref	Shares/Par Security Id	Description Broker Transaction No./Client Ref No.	Trade Date C. Settle Date Reported Date	Price Local/Base	Cost Local/Base	Amount Local/Base	Net Gain/Loss Local/Base
CD	0.000	17473DAVITA INC. Distribution NA9123459 2ND DISTRIBUTION PROCEEDS FOR 20241129S000030 / 000000000001 KR3F10120002 : RIVER ROAD FAV	11/29/2024 11/29/2024	0.000000 0.000000	286.06 286.06	286.06 286.06	286.06 286.06 Gain/Loss Local Amounts: 286.06 Long Gain/Loss Base Amounts: 286.06 Long
CD	0.000	24906CLOOPEN GROUP HOLDING LIM NA9123459 ITED Securities Litigation Dis 20241129S000090 / 000000006377 KR3F25050002 : JP MORGAN EMERG MKTS	11/29/2024 11/29/2024	0.000000 0.000000	40,874.56 40,874.56	40,874.56 40,874.56	40,874.56 40,874.56 Gain/Loss Local Amounts: 40,874.56 Long Gain/Loss Base Amounts: 40,874.56 Long
CD	0.000	17473DAVITA INC. Distribution NA9123459 2ND DISTRIBUTION PROCEEDS FOR 20241129S000200 / 000000000001 KR3F10110002 : KRS INTERNAL EQUITY	11/29/2024 11/29/2024	0.000000 0.000000	774.52 774.52	774.52 774.52	774.52 774.52 Gain/Loss Local Amounts: 774.52 Long Gain/Loss Base Amounts: 774.52 Long
CD	0.000	20603MCKESSON CORPORATION, Sec NA9123459 urities Litigation Distributio 20241205S000140 / 000000000011 KR3F19020002 : S&P 500 INDEX	12/5/2024 12/5/2024	0.000000 0.000000	2,863.62 2,863.62	2,863.62 2,863.62	2,863.62 2,863.62 Gain/Loss Local Amounts: 2,863.62 Long Gain/Loss Base Amounts: 2,863.62 Long
CD	0.000	17319ALEXION PHARMACEUTICALS, NA9123459 INC. Securities Litigation Dis 20241231S000370 / 000000000003 KR3F10110002 : KRS INTERNAL EQUITY	12/31/2024 12/31/2024	0.000000 0.000000	3,628.20 3,628.20	3,628.20 3,628.20	3,628.20 3,628.20 Gain/Loss Local Amounts: 3,628.20 Long Gain/Loss Base Amounts: 3,628.20 Long
TOTAL U.S. DOLLAR CASH & CASH EQUIVALENTS:					85,359.43	85,359.43	85,359.43
TOTAL CASH & CASH EQUIVALENTS CLASS ACTIONS:					85,359.43	85,359.43	85,359.43
EQUITY							
U.S. DOLLAR							
CD	0.000	4-17-CV-0449-ALMADEPTUS HEALTH 006855100 CSDRADJ:RAF-ERU-IAS-19371792 20241023S000070 KR3F10020002 : NTGI STRUCTURED	10/22/2024 10/22/2024	0.000000 0.000000	7.60 7.60	7.60 7.60	7.60 7.60 Gain/Loss Local Amounts: 7.60 Long Gain/Loss Base Amounts: 7.60 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD

KR3G00000000 - TOTAL FUND

9/30/2024 - 12/31/2024

Status: REVISED

Trans Code	Shares/Par	Description	Trade Date	Price	Cost	Amount	Net Gain/Loss
Link Ref	Security Id	Broker	C. Settle Date	Local/Base	Local/Base	Local/Base	Local/Base
		Transaction No./Client Ref No.	Reported Date				
CD	0.000	18849ENDO INTERNATIONAL PLC, S	12/30/2024	0.000000	417.17	417.17	417.17
	G30401106	CSDRADJ:RAF-ERU-IAS-21498076		0.000000	417.17	417.17	417.17
		20241231S000010	12/30/2024				
		KR3F90010002 : CASH ACCOUNT KR3					Gain/Loss Local Amounts: 417.17 Long Gain/Loss Base Amounts: 417.17 Long
CD	0.000	18849ENDO INTERNATIONAL PLC, S	12/30/2024	0.000000	175.56	175.56	175.56
	G30401106	CSDRADJ:RAF-ERU-IAS-21498077		0.000000	175.56	175.56	175.56
		20241231S000360	12/30/2024				
		KR3F10110002 : KRS INTERNAL EQUITY					Gain/Loss Local Amounts: 175.56 Long Gain/Loss Base Amounts: 175.56 Long
TOTAL U.S. DOLLAR EQUITY:					600.33	600.33	600.33
					600.33	600.33	600.33
TOTAL EQUITY CLASS ACTIONS:					600.33	600.33	600.33
TOTAL CLASS ACTIONS:					85,959.76	85,959.76	85,959.76
TOTAL TRANSACTIONS BASE:					85,959.76	85,959.76	85,959.76

Kentucky Public Pensions Authority

Internal Asset Holdings Report & Internal Asset Transaction Report

Quarter Ending: December 31, 2024

Reports can be found:

<https://kyret.ky.gov/Investments/Investments-Library/Pages/Internal-Reports.aspx>

Kentucky Public Pensions Authority

Commissions Report

Quarter Ending: December 31, 2024

Reports can be found:

<https://kyret.ky.gov/Investments/Investments-Library/Pages/Commissions-Reports.aspx>

Kentucky Public Pensions Authority

Proxy Voting Report

Quarter Ending: December 31, 2024

Report can be found:

<https://www.kyret.ky.gov/Investments/Investments-Library/Pages/Proxy-Voting-Reports.aspx>

Kentucky Retirement Systems

Investment Budget Update

Quarter Ending: December 31, 2024

KRS Investment Committee Meeting - Quarterly Investment Budget Update

KENTUCKY PUBLIC PENSIONS AUTHORITY										
Investment Budget										
For the six month period ending December 31, 2024										
Account Name	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Trust Budget FY 2025	FY25 Expenditures	Remaining	Percentage Spent
CONSULTING SERVICES										
Wilshire Associates	\$ 1,021,799	\$ 1,238,170	\$ 1,225,671	\$ 1,021,175	\$ 838,172	\$ 1,130,417	\$ 1,250,000	\$ 580,311	\$ 669,689	46%
Albourne	-	-	-	-	306,750	270,000	275,000	135,000	140,000	49%
MercerInsight	-	-	-	-	153,548	160,000	165,000	80,000	85,000	48%
New Private Markets Consultant	-	-	-	-	153,548	160,000	250,000	-	250,000	0%
SUBTOTAL	1,021,799	1,238,170	1,225,671	1,021,175	1,452,019	1,720,417	1,940,000	795,311	1,144,689	41%
LEGAL & AUDITING SERVICES										
Faegre Drinker	-	-	96,039	202,502	16,428	18,519	375,000	1,000	374,000	0%
Intelligent Management Solutions (IMS)	620,001	202,140	155,700	69,884	81,880	8,061	700,000	1,289,110	(589,110)	184%
McClain/Goldberg	-	-	891	-	-	312	25,000	-	25,000	0%
Reinhart	317,909	671,269	663,689	619,509	109,508	619,420	3,000,000	1,097,884	1,902,116	37%
Stoll-Keenon-Ogder	10,314	135,353	254,211	463,560	750,438	210,475	875,000	184,180	690,820	21%
Haystack	-	-	-	-	120,175	209,490	200,000	148,650	51,350	74%
Umberg Zipser	-	-	289,100	498,058	606,701	738,483	750,000	61,669	688,331	8%
Fiduciary Legal Expenses	-	-	-	-	5,288	400,872	850,000	431,098	418,902	51%
Miscellaneous	-	-	-	-	-	3,160	50,000	-	50,000	0%
SUBTOTAL	948,225	1,008,762	1,459,630	1,853,513	1,690,417	2,208,791	6,825,000	3,213,591	3,611,409	47%
CONTRACTURAL SERVICES										
Bloomberg	68,722	71,810	98,163	102,243	104,153	110,823	160,000	56,393	103,607	35%
BNYM Custodial Fees	2,056,390	2,088,475	2,379,838	2,565,169	2,333,981	2,752,592	2,700,000	1,499,863	1,200,137	56%
eVestment (Solovis RMS)	-	-	-	30,000	33,800	39,422	35,000	-	35,000	0%
Solovis (Reporting & Analytics)	-	-	-	245,000	266,017	306,319	300,000	319,744	(19,744)	107%
FactSet	222,476	162,295	109,662	140,098	146,411	151,431	150,000	66,840	83,160	45%
Russell Index Subscription	1,075	1,250	1,000	1,000	750	1,000	30,000	750	29,250	3%
S&P Global	-	94,500	26,250	68,250	27,563	-	47,500	20,672	26,828	44%
TradeWeb	-	-	-	6,000	7,700	2,800	-	-	-	-
State Street/Elkins McSherry	10,000	5,000	15,000	10,000	10,000	-	10,000	-	10,000	0%
ISS	32,050	32,050	28,288	35,813	39,875	62,875	60,000	8,500	51,500	14%
MSCI	1,000	1,000	1,000	1,000	1,000	1,000	1,000	-	1,000	0%
KPMG Tax Guarantor Services	-	7,606	22,050	7,350	-	9,450	10,000	9,450	550	95%
Jayant Ghevaria and CO	-	10,050	-	52,085	-	-	55,000	-	55,000	0%
India Renewal Fee (SEBI)	-	-	-	3,000	-	2,950	3,000	-	3,000	0%
With Intelligence	-	-	-	-	9,520	9,520	10,000	10,150	(150)	-
SUBTOTAL	2,391,713	2,474,036	2,681,251	3,267,008	2,980,769	3,450,182	3,571,500	1,992,363	1,579,137	56%

KRS Investment Committee Meeting - Quarterly Investment Budget Update

KENTUCKY PUBLIC PENSIONS AUTHORITY										
Investment Budget										
For the six month period ending December 31, 2024										
Account Name	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Trust Budget FY 2025	FY25 Expenditures	Remaining	Percentage Spent
MISCELLANEOUS SERVICES										
Miscellaneous Services							250,000		250,000	0%
Morningstar						2,500	2,500	2,500	-	100%
Oxford						19,500	20,000	20,475	(475)	102%
Pension Real Estate Association						330	350	330	20	94%
Reimbursement of Pzena	-	-	-	-	-	12,923			-	
SUBTOTAL	-	-	-	-	-	35,253	272,850	23,305	249,545	9%
INACTIVE CONTRACTURAL SERVICES										
Dean Dorton	9,719		-	-	250	-	-	-	-	
Hirschler		4,794	-	-	-	-	-	-	-	
INFORMA	12,904		-	-	-	-	-	-	-	
Lighthouse Solutions	3,093		-	-	-	-	-	-	-	
London Stock Exchange GBP (GREAT BRITISH POUNDS)	6,467	3,544	-	-	-	-	-	-	-	
Deutsche Bank Trust	3,000		3,000	-	-	-	-	-	-	
Morris James LLP	94,192	20,154	-	-	-	-	-	-	-	
Calcaterra Pollack			1,200,000	-	-	-	-	-	-	
Manatt		90,798	30,757	-	-	-	-	-	-	
ORG	162,344		-	-	-	162,344	-	-	-	
SUBTOTAL	291,718	119,290	1,233,757	-	250	-	-	-	-	
TOTAL	\$ 4,653,455	\$ 4,840,258	\$ 6,600,309	\$ 6,141,696	\$ 6,123,455	\$ 7,414,644	\$ 12,609,350	\$ 6,024,570	\$ 6,584,780	48%

KRS Investment Committee Meeting - Quarterly Investment Budget Update

INVESTMENT BUDGET	
CONSULTING SERVICES	
Wilshire Associates	General Investment Consulting Services, Manager Research and Due Dilligence, Reporting, Asset Allocation
Albourne	Investment Consultant Research database - Private Markets Manager Research, Private Markets Research, Pension Markets Research
MercerInsight	Investment Consultant Research database - Public Markets Manager Research, Public Markets Research, Pension Markets Research
LEGAL & AUDITING SERVICES	
Faegre Drinker	Delaware litigation counsel
Intelligent Management Solutions (IMS)	IMS is an expert witness in the Bay Hills case.
McClain/Goldberg	Blackstone litigation counsel for the Trustees and Officers
Reinhart	Bay Hills counsel and investment counsel for contract negotiations
Stoll-Keenon-Ogden	Mayberry counsel
Haystack	Conduct Mayberry eDiscovery
Umberg Zipser	PAAMCO-Prisma (California litigation)
Frost Brown Todd	Currently has no investment-related cases
Swansburg & Smith	Reimbursement of Fiduciary Legal Expenses (KKR)
Eddins Domine	Reimbursement of Fiduciary Legal Expenses (KKR)
Taft	Reimbursement of Fiduciary Legal Expenses (Calcaterra Pollack)
CONTRACTURAL SERVICES	
Bloomberg	Bloomberg Professional Services, Data Analytics and Tools, Market Information and News, Research Portal
BNYM Custodial Fees	Full Service Custodial Services, Investment Accounting, Investment Operations, Transaction Services, Performance and Attribution, Reporting
eVestment (Solovis RMS)	Research Management Program organizing internal and external research
Solovis (Reporting & Analytics)	Portfolio and Risk Analytics, Performance Measurement and Attribution, Reporting
FactSet	Workstation and Quant/Risk Applications for managing Public Equity Portfolios
Russell Index Subscription	Access to Russell Indexes for Portfolio Management, Reporting and Performance
S&P Global	Data on the S & P US Index / License to 10,000 Identifiers for Portfolio Management, Reporting and Performance
TradeWeb	Electronic Trading Platform for Internal Management
State Street/Elkins McSherry	Public Equity Trade Cost Analysis
ISS	Portfolio Monitoring and Proxy Voting Services
MSCI	International Public Equity Data Package
KPMG Tax Guarantor Services	Tax Accounting Services - Taiwan
Jayant Ghevaria and CO	Tax Accounting Services - India
India Renewal Fee (SEBI)	Registration of India Local Market Accounts
Oxford Economics	Global macroeconomics and markets research
Morningstar	Access to Morningstar Indexes for Portfolio Management, Reporting and Performance
Pension Real Estate Association	Industry Association for News and Research
With Intelligence	Portfolio Management Research provider

KRS Investment Committee Meeting - Quarterly Investment Budget Update

KENTUCKY PUBLIC PENSIONS AUTHORITY											
Investment Fees and Expenses											
For the six month periods ending December 31											
Pension											
	2025		2024		2023		2022		2021		
	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value	
Core Fixed Income	1,375,134	3,285,258,604	1,014,583	2,287,704,103	1,412,142	1,982,992,065	1,591,391	2,344,396,966	1,401,242	2,282,848,163	
<i>Investment Advisory Fees</i>	1,038,999		989,977		1,073,446		1,558,075		1,375,451		
<i>Performance Fees</i>					313,985						
<i>Miscellaneous Fees and Expenses</i>	336,134		24,606		24,711		33,316		25,791		
Public Equity	8,629,831	8,515,176,300	7,003,749	8,229,412,149	6,326,122	6,860,008,005	7,390,244	7,258,279,054	5,850,570	6,295,655,905	
<i>Investment Advisory Fees</i>	8,520,390		6,885,398		6,216,244		7,204,226		5,712,166		
<i>Performance Fees</i>	109,441		118,350		109,877		186,018		138,403		
<i>Miscellaneous Fees and Expenses</i>											
Specialty Credit Fixed Income	52,553,330	4,113,638,760	43,867,219	3,449,111,420	26,763,395	3,169,416,226	25,775,685	3,159,992,882	18,397,660	2,806,670,599	
<i>Investment Advisory Fees</i>	11,557,737		9,314,024		8,272,318		8,375,883		7,320,545		
<i>Performance Fees</i>	20,324,723		15,712,746		7,246,973		12,762,781		9,592,140		
<i>Miscellaneous Fees and Expenses</i>	20,670,870		18,840,449		11,244,103		4,637,021		1,484,975		
Real Estate	9,542,076	1,007,605,718	2,347,363	1,007,031,285	5,120,746	980,167,711	16,451,186	780,082,609	980,198	584,165,093	
<i>Investment Advisory Fees</i>	3,855,993		3,803,771		4,590,896		2,401,864		2,545,408		
<i>Performance Fees</i>	(133,705)		(3,707,401)		(380,882)		12,653,860		(2,070,445)		
<i>Miscellaneous Fees and Expenses</i>	5,819,788		2,250,993		910,732		1,395,462		505,235		
Real Return	5,957,053	1,267,368,609	2,496,799	873,036,117	2,108,571	451,152,401	2,632,576	1,021,821,360	3,478,904	989,625,601	
<i>Investment Advisory Fees</i>	3,154,358		2,099,651		1,176,185		2,001,915		2,247,532		
<i>Performance Fees</i>	1,922,510		147,085		493,101		679,897		1,259,862		
<i>Miscellaneous Fees and Expenses</i>	880,185		250,063		439,285		(49,236)		(28,490)		
Private Equity	7,362,364	1,134,713,109	8,028,455	1,162,891,960	(1,217,614)	1,143,362,622	39,968,415	1,262,539,645	24,365,092	1,139,236,934	
<i>Investment Advisory Fees</i>	2,225,737		2,925,557		3,652,032		3,928,841		4,294,168		
<i>Performance Fees</i>	3,539,722		2,310,867		(6,838,180)		33,350,556		17,523,541		
<i>Miscellaneous Fees and Expenses</i>	1,596,905		2,792,031		1,968,535		2,689,018		2,547,383		
Administrative Expense/Cash	4,140,838	521,905,734	2,118,142	737,649,280	1,574,490	813,973,145	1,878,932	612,903,688	1,435,169	266,674,138	
Total Investment Mgmt Fees	89,560,626	19,845,666,834	66,876,308	17,746,836,314	42,087,852	15,401,072,174	95,688,429	16,440,016,204	55,908,834	14,364,876,433	

KRS Investment Committee Meeting - Quarterly Investment Budget Update

KENTUCKY PUBLIC PENSIONS AUTHORITY										
Investment Fees and Expenses										
For the six month periods ending December 31										
Insurance										
	2025		2024		2023		2022		2021	
	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value
Core Fixed Income	439,114	990,094,610	342,823	780,518,762	526,658	755,273,150	587,743	855,261,654	568,510	873,074,122
<i>Investment Advisory Fees</i>	329,665		334,225		406,870		457,920		558,897	
<i>Performance Fees</i>					112,040		117,337			
<i>Miscellaneous Fees and Expenses</i>	109,449		8,598		7,748		12,486		9,613	
Public Equity	3,845,123	3,693,351,775	3,225,651	3,720,705,634	2,916,264	3,159,950,145	3,221,274	3,246,444,061	2,616,659	2,840,620,347
<i>Investment Advisory Fees</i>	3,799,141		3,171,832		2,866,269		3,161,508		2,557,467	
<i>Miscellaneous Fees and Expenses</i>	45,982		53,819		49,995		59,766		59,192	
Specialty Credit Fixed Income	23,290,434	1,812,349,655	19,604,727	1,527,908,553	12,006,819	1,440,474,508	11,449,880	1,449,432,096	7,816,436	1,274,181,212
<i>Investment Advisory Fees</i>	4,988,056		4,026,821		3,715,203		3,748,168		3,373,550	
<i>Performance Fees</i>	9,193,232		7,206,526		3,460,460		5,702,991		3,921,732	
<i>Miscellaneous Fees and Expenses</i>	9,109,146		8,371,380		4,831,156		1,998,721		521,154	
Real Estate	4,188,889	451,763,858	1,223,228	451,520,869	2,141,670	414,400,346	6,801,703	330,413,444	536,259	246,753,396
<i>Investment Advisory Fees</i>	1,751,779		1,719,862		1,913,144		1,021,218		1,015,005	
<i>Performance Fees</i>	(57,415)		(1,461,607)		(161,966)		5,182,012		(795,199)	
<i>Miscellaneous Fees and Expenses</i>	2,494,525		964,973		390,492		598,473		316,453	
Real Return	2,553,520	474,001,894	1,116,868	342,016,500	938,266	175,390,319	1,140,159	432,244,515	1,350,465	419,707,299
<i>Investment Advisory Fees</i>	1,316,466		936,352		530,992		889,226		948,395	
<i>Performance Fees</i>	854,844		64,072		201,933		266,344		419,601	
<i>Miscellaneous Fees and Expenses</i>	382,210		116,444		205,341		(15,411)		(17,531)	
Private Equity	3,588,563	569,856,320	4,902,486	587,662,239	275,237	573,107,746	22,563,618	595,876,977	16,438,473	548,052,248
<i>Investment Advisory Fees</i>	1,393,540		1,826,381		2,427,153		2,772,848		2,892,530	
<i>Performance Fees</i>	1,400,678		1,205,986		(3,062,207)		18,845,205		12,027,941	
<i>Miscellaneous Fees and Expenses</i>	794,345		1,870,119		910,292		945,565		1,518,002	
Administrative Expense/Cash	1,939,536	162,008,178	1,050,278	142,324,349	821,924	223,048,022	963,210	401,003,570	842,635	108,497,980
Total Investment Mgmt Fees	\$ 39,845,179	\$ 8,153,426,289	\$ 31,466,061	\$ 7,552,656,905	\$ 19,626,840	\$ 6,741,644,236	\$ 46,727,587	\$ 7,310,676,317	\$ 30,169,437	\$ 6,310,886,604

KENTUCKY PUBLIC PENSIONS AUTHORITY Investment Fees and Expenses For the six month period ending December 31, 2024 Pension						
	KERS		KERS Hazardous		SPRS	
	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value
Core Fixed Income	518,528	\$ 1,237,639,768	49,248	\$ 113,526,022	78,335	\$ 186,120,328
<i>Investment Advisory Fees</i>	392,499		37,572		59,342	
<i>Performance Fees</i>						
<i>Miscellaneous Fees and Expenses</i>	126,029		11,676		18,992	
Public Equity	1,372,434	1,428,193,419	458,092	445,008,194	234,963	215,067,862
<i>Investment Advisory Fees</i>	1,354,250		452,526		232,379	
<i>Miscellaneous Fees and Expenses</i>	18,183		5,566		2,584	
Specialty Credit Fixed Income	10,386,139	932,686,929	2,823,796	269,279,072	1,208,170	139,012,659
<i>Investment Advisory Fees</i>	2,436,573		690,476		328,163	
<i>Performance Fees</i>	3,953,899		1,017,272		442,723	
<i>Miscellaneous Fees and Expenses</i>	3,995,668		1,116,047		437,284	
Real Estate	1,811,878	225,437,904	480,887	61,110,916	246,465	34,315,007
<i>Investment Advisory Fees</i>	755,538		190,057		123,649	
<i>Performance Fees</i>	(24,771)		(6,842)		(2,888)	
<i>Miscellaneous Fees and Expenses</i>	1,081,111		297,672		125,704	
Real Return	1,307,584	439,863,142	212,911	83,855,669	273,893	68,024,326
<i>Investment Advisory Fees</i>	698,851		137,679		146,397	
<i>Performance Fees</i>	438,935		35,735		91,722	
<i>Miscellaneous Fees and Expenses</i>	169,799		39,497		35,774	
Private Equity	1,309,725	200,813,308	404,707	67,087,442	133,761	29,370,254
<i>Investment Advisory Fees</i>	181,284		127,193		30,353	
<i>Performance Fees</i>	935,989		187,117		73,043	
<i>Miscellaneous Fees and Expenses</i>	192,452		90,398		30,365	
Administrative Expenses/Cash	941,364	99,213,932	224,524	32,763,326	143,250	13,885,700
Total Investment Mgmt Fees	17,647,652	\$ 4,563,848,402	4,654,166	\$ 1,072,630,641	2,318,837	\$ 685,796,136

KENTUCKY PUBLIC PENSIONS AUTHORITY Investment Fees and Expenses For the six month period December 31, 2024 Insurance						
	KERS		KERS Hazardous		SPRS	
	FYTD Fees	Market Value	FYTD Fees	Market Value	FYTD Fees	Market Value
Core Fixed Income	85,565	\$ 188,524,495	33,501	\$ 72,846,293	13,421	\$ 27,930,390
<i>Investment Advisory Fees</i>	64,733		25,445		10,284	
<i>Performance Fees</i>						
<i>Miscellaneous Fees and Expenses</i>	20,833		8,056		3,137	
Public Equity	791,774	720,435,972	301,542	284,218,447	125,545	114,140,547
<i>Investment Advisory Fees</i>	782,890		298,061		124,129	
<i>Miscellaneous Fees and Expenses</i>	8,884		3,481		1,416	
Specialty Credit Fixed Income	4,373,554	435,653,717	2,103,966	173,029,178	816,688	69,916,325
<i>Investment Advisory Fees</i>	1,085,256		486,917		185,772	
<i>Performance Fees</i>	1,569,182		930,896		336,108	
<i>Miscellaneous Fees and Expenses</i>	1,719,117		686,152		294,809	
Real Estate	657,778	99,384,398	436,694	43,525,865	166,820	16,619,881
<i>Investment Advisory Fees</i>	311,712		177,872		67,882	
<i>Performance Fees</i>	(8,152)		(6,097)		(2,331)	
<i>Miscellaneous Fees and Expenses</i>	354,218		264,918		101,270	
Real Return	618,889	139,589,089	161,145	53,817,086	66,259	21,608,455
<i>Investment Advisory Fees</i>	311,150		100,838		38,397	
<i>Performance Fees</i>	226,686		29,143		16,060	
<i>Miscellaneous Fees and Expenses</i>	81,053		31,164		11,802	
Private Equity	569,154	118,328,449	345,086	48,479,671	141,969	21,545,147
<i>Investment Advisory Fees</i>	179,393		131,938		56,552	
<i>Performance Fees</i>	333,654		148,572		50,783	
<i>Miscellaneous Fees and Expenses</i>	56,107		64,576		34,633	
Administrative Expenses/Cash	414,489	39,349,182	163,340	12,450,007	66,189	5,775,821
Total Investment Mgmt Fees	\$ 7,511,205	\$ 1,741,265,302	\$ 3,545,272	\$ 688,366,547	\$ 1,396,892	\$ 277,536,565



EXTERNAL MANAGER SEARCH AND SELECTION REPORT: US LARGE CAP PUBLIC EQUITY

IN CONJUNCTION WITH WILSHIRE ASSOCIATES

RECOMMENDATION



- Kentucky Public Pensions Authority (KPPA) Staff and Wilshire are recommending investments for all KERS and SPRS portfolios in two actively managed U.S. large cap equity mandates to be managed by J.P. Morgan and T. Rowe Price pending successful investment management agreement negotiations.
- Primary funding to come from the retirement of the Internal U.S. Large Cap Public Equity Factor-based portfolio; secondary funding to come from the Internal S&P 500 portfolio.
- No placement agents have been involved or will be compensated as a result of this recommendation.

INTRODUCTION



- Continue work of improving the structure of the global public equity allocation
 - Terminate the existing U.S. large cap factor-based portfolio
 - Factor tilts (size, value, momentum & volatility) have not been rewarded for a sustained period
 - Experienced greater tracking error
 - Relative performance will be driven by stock selection rather than structural biases
 - Add value by utilizing lower tracking error active management with reasonable fees given the exposure and expected relative performance
- This report serves as a review of the competitive search process utilized by staff in accordance with the Investment Policy Statement and Investment Procurement Policy in pursuit of improving the global public equity allocation.

GENERAL PROCESS



- Start with Wilshire Investment Management database (over 12,000 strategies)
- Applied minimum criteria to cull list to a more manageable size (qualitative)
- Staff may add managers to the list that may not participate in the database
- Additional cut (quantitative)
- Distribute a Request for Information (RFI) to remaining candidates (7 firms / 9 strategies)
- Staff and consultant review the RFI responses to narrow down the final candidate list (4)
- Discussions / onsite visits with final candidates
- Additional discussions with front-runners prior to final decision

ESTABLISHED CRITERIA



- Screening Criteria
 - U.S. large cap universe: Benchmarks included SP500 and/or R1000
 - Active Management: majority of holdings must be U.S. large cap stocks
 - Firm AUM: greater than \$10billion
 - Strategy AUM: greater than \$1billion
 - Minimum five-year track record
 - Firm / Team ranked by Wilshire's Manager Research Team third decile or better (qualitative)
 - Separate Account Offering
 - Relative Returns (1,3,5&10Yrs): Positive Excess
 - Tracking Error (1,3,5&10Yrs): Above 1%
 - Information Ratios (1,3,5&10Yrs): Above 0.50
 - Sharpe Ratios (1,3,5&10Yrs): Positive Excess
 - Up / Down Capture Ratios (1,3,5&10Yrs): Above 1.0 / Below 1.0

CANDIDATE POOL



- Preliminary screening provided a broad candidate list of 111 potential strategies
- Additional screening culled the list down to 7 firms (9 strategies), who received a Request for Information (RFI)
- Finalist list created for further review
 - BlackRock: Systematic Active Equity U.S. Alpha Tilts
 - Columbia Threadneedle: U.S. Contrarian Large Cap Core Strategy
 - J.P. Morgan: U.S. Large Cap Core
 - T. Rowe Price: U.S. Structured Research Equity Strategy

J.P. Morgan



- Organization Structure
 - Founded in 1863
 - Publicly traded on the NYSE; employees hold 3.5% of outstanding
 - Firm public equity AUM over \$1T; Strategy AUM of \$81.9b
- Investment Team
 - Consists of 3 PMs (25/19); supported by a team of 18 career sector specialists (23/12)
 - Lead PM ultimately responsible for portfolio construction and risk management
- Client / Product Stability
 - Past few years, strategy has added 21 (+70) clients with net inflows over \$740m
- Investment Philosophy
 - Understanding the normalized earnings power of a company; take advantage of mispricing from near-term information
 - Stock selection in the context of a high conviction fully invested, broadly diversified and style consistent portfolio
 - Information advantage developed through proprietary, fundamental research

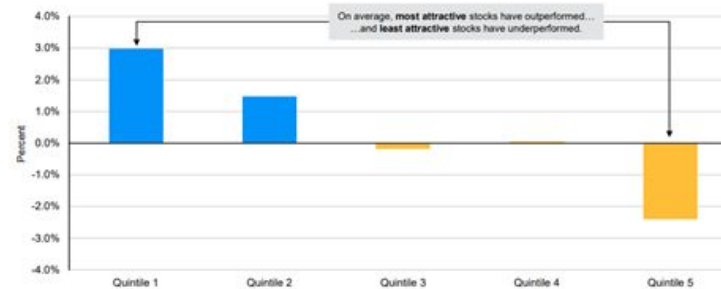
J.P. Morgan (cont.)



- Investment Process
 - Create a sustainable, proprietary information advantage by leveraging fundamental analysts
 - Gain an understanding of the dynamics of a business, its growth prospects, and sustainability of competitive advantage
 - Companies assigned a strategy classifications: premium, quality, standard, challenged
 - Utilize a systematic valuation process to quantify forward looking views
 - Forecasts earnings and dividends (long-term)
 - Determine normalized long-term earnings and whether the current stock price is under or over-valued
 - Each stock is characterized into industry sector and ranked into quintiles

January 1, 1987 – December 31, 2024

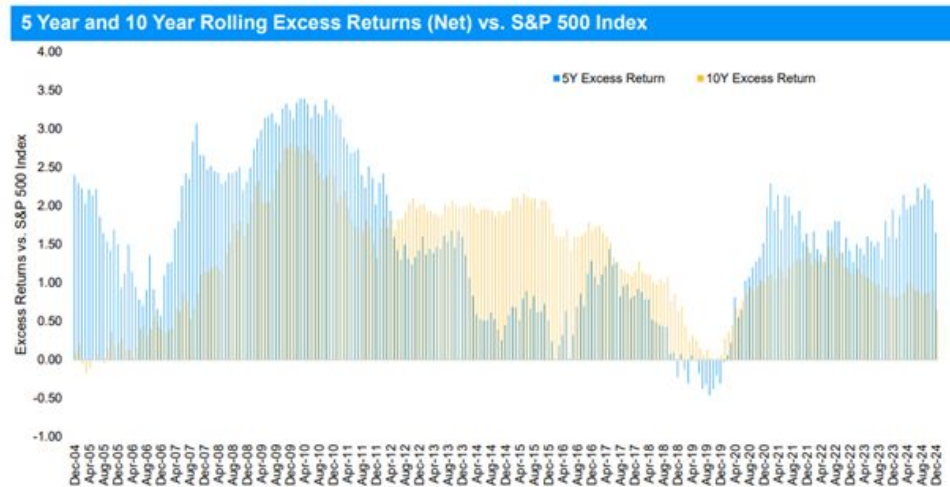
Quintile Performance vs. S&P 500 Index



J.P. Morgan (cont.)



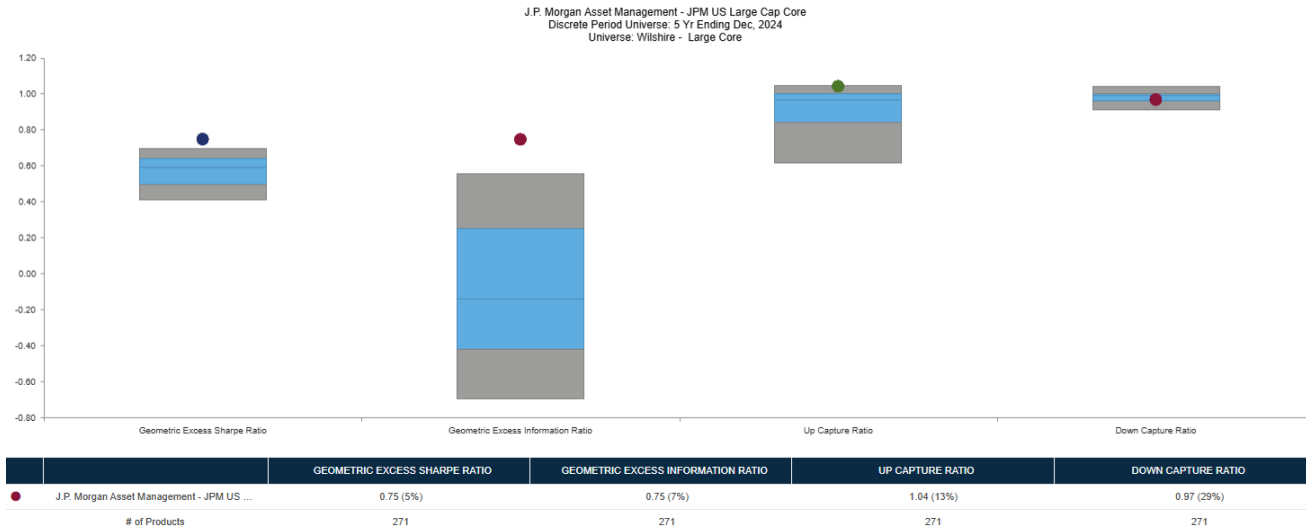
- Investment Process (cont.)
 - Construct portfolio driven by stock selection while concentrating risk into the highest conviction ideas
 - PM selects from most attractively valued stocks within each sector (typically first 2 quintiles)
 - Attractively valued, where insights are differentiated and conviction is high, where there exists a compelling risk-reward relationship
 - 50-70 names; TE 2-4%; relative sector weights +/- 4%; specific security weights +/- 4%
 - Style neutral portfolio, stock selection driven excess performance



J.P. Morgan (cont.)



J.P. Morgan					
As of: 12/31/24	1YR	3YR	5YR	10YR	SI
US Large Cap Core Equity Strategy	24.83	9.21	16.49	14.06	12.49
S&P 500 Index	25.02	8.94	14.53	13.10	11.31
<i>Relative Performance (+/-)</i>	-0.19	0.27	1.96	0.96	1.18
Inception Date: 12/31/85					



T. Rowe Price



- Organization Structure
 - Founded in 1937; IPO 1986
 - 2000 became T. Rowe Price Group; employees hold 7% of outstanding
 - Firm AUM over \$1.6T; Strategy AUM of \$89.6b
- Investment Team
 - Analyst driven (28) who are industry specialists; managed by 5-member Portfolio Oversight Committee (21/9)
- Client / Product Stability
 - Past few years, strategy has added 7 clients with net inflows over \$300m
- Investment Philosophy
 - Fundamental research is key; differentiated sources can create a competitive advantage
 - Company earnings and revenue can be mispriced; stock price mean reversion
 - Investors overreact to news, providing opportunities
 - Seek to add value over a full market cycle rather than short-term fluctuations; leadership is often difficult to anticipate

T. Rowe Price (cont.)



- Investment Process
 - Strategy is a collection of industry focused analyst driven portfolios; bottom-up stock selection
 - Capital allocated across the analyst team in alignment with index weights associated with coverage area
 - Each analyst manages their own portfolio; express conviction in each holdings based on research
 - Business model / management quality / market position / valuation
 - Portfolio Oversight Committee
 - 5 PMs, assign coverage areas, mentors / develops analysts, oversees activity, ensures adherence with portfolio constraints & risk controls

BARRA^{1,2} RISK FACTORS FOR US STRUCTURED RESEARCH EQUITY REPRESENTATIVE PORTFOLIO—ACTIVE EXPOSURES

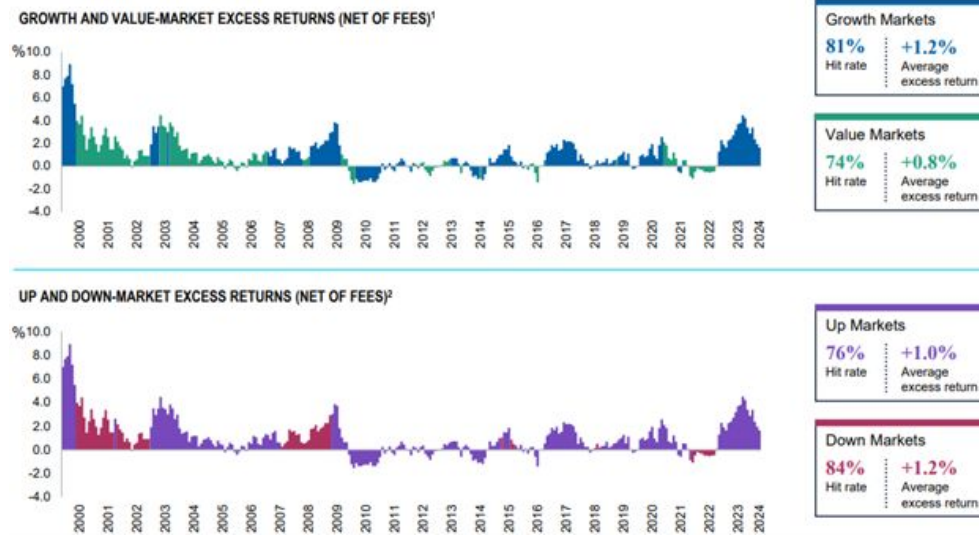


	Total	Info Tech	Financials	Health Care	Comm Svcs	Consum Stpls	Materials	Utilities	Real Estate	Industrials & Bus Svcs	Energy	Consum Disc
Over (Under) Weight	-	-0.20	1.06	-0.05	0.29	-0.46	-0.03	0.12	-0.35	-1.10	-0.27	0.36
Portfolio Weight (Average)	100.00	24.55	15.06	13.61	9.95	6.44	2.52	2.90	2.28	7.66	3.39	11.02
Index Weight (Average)	100.00	24.74	14.00	13.67	9.65	6.90	2.54	2.78	2.63	8.76	3.66	10.66

T. Rowe Price (cont.)



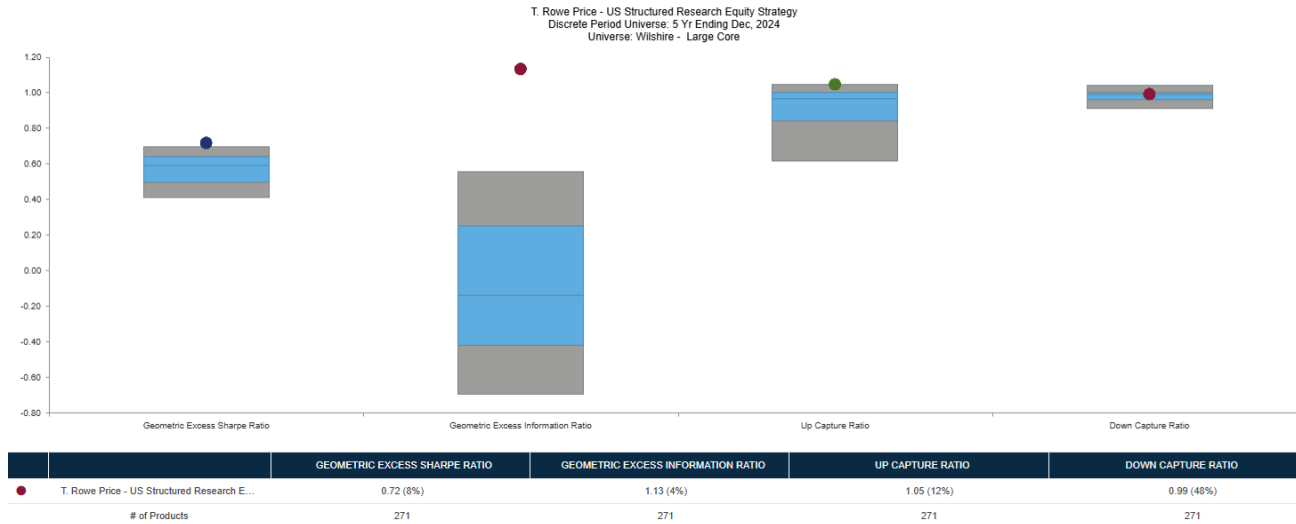
- Investment Process (cont.)
 - Portfolio consists of 200-275 stocks; relative weight +/- 15bps ; TE < 1.75%
 - Relatively industry (+/- 100bps) & sector (+/- 150bps) neutral; active positions +/- 100bps
 - All weather portfolio not dependent on factor or style leadership, driven by individual stock risk



T. Rowe Price (cont.)



T. Rowe Price					
As of: 12/31/24	1YR	3YR	5YR	10YR	SI
US Structured Research Equity Strategy	26.99	10.53	15.87	14.37	9.59
S&P 500 Index	25.02	8.94	14.53	13.10	8.06
<i>Relative Performance (+/-)</i>	<i>1.97</i>	<i>1.59</i>	<i>1.34</i>	<i>1.27</i>	<i>1.53</i>
Inception Date: 05/31/99					



Implementation & Sizing



- As of 12/31/24, \$397.1m invested in the U.S. large cap factor-based portfolio (5.2% U.S. / 3.3% public equity)
 - Retire the investment; primary source of funding for new mandates
- Allocation should be more meaningful in terms of attribution to performance (Internal S&P 500)
- Upsizing the allocation and blending the two finalists, expected return can be improved while maintaining current risk levels in the greater portfolio
 - Strategies complement one another – both expected to outperform over a market cycle, but do so with differentiated return paths
 - T. Rowe Price – well-diversified large number of incremental bets that compound overtime
 - J.P. Morgan – takes larger relative positions, creates opportunity for greater excess return albeit with higher level of relative risk, less predictable return path
 - Blending the two yields a higher expected return, yet smoother return path (correlation 0.53)
- Seeking approval to invest up to 12.5% of public equities; with initial funding to approximate 6.6%

Initial Approximate Plan Participation based on 12/31/24 Allocations				
KERS	77,000,000.00	KERS INS	40,300,000.00	117,300,000.00
KERS-H	27,300,000.00	KERS-H INS	16,200,000.00	43,500,000.00
CERS	308,800,000.00	CERS INS	111,000,000.00	419,800,000.00
CERS-H	111,600,000.00	CERS-H INS	57,400,000.00	169,000,000.00
SPRS	14,300,000.00	SPRS INS	6,600,000.00	20,900,000.00
	539,000,000.00		231,500,000.00	770,500,000.00

RECOMMENDATION



- Staff and the consultant believe J.P. Morgan and T. Rowe Price will be a positive addition to the KPPA investment program and the Global Public Equity allocation.
 - While distinct, the shared philosophical belief in conjunction with differentiated construction methodologies, yields complimentary return profiles.
 - Neither relies on style biases or tilts but rather on idiosyncratic stock selection to drive relative performance, which helps to insulate from macro theme influences
 - The expected result is a more efficient global public equity portfolio, with a better risk/reward profile and increased diversification, as both strategies have low to negative correlations with existing public equity mandates
- ***J.P. Morgan – U.S. Large Cap Core Equity Strategy***
 - ***Up to 6.25% of the total global public equity allocation, with initial funding of approximately 3.3% (approximately \$383.3m). Primary funding to come from the internal factor-based U.S. large cap portfolios, with additional funds from the Internal S&P 500 portfolios.***
- ***T. Rowe Price – U.S. Structured Research Equity Strategy***
 - ***Up to 6.25% of the total global public equity allocation, with initial funding of approximately 3.3% (approximately \$383.3m). Primary funding to come from the internal factor-based U.S. large cap portfolios, with additional funds from the Internal S&P 500 portfolios.***



EXTERNAL MANAGER
SEARCH AND
SELECTION REPORT:
US LARGE CAP PUBLIC
EQUITY

IN CONJUNCTION WITH
WILSHIRE ASSOCIATES

Recommendation

Kentucky Public Pensions Authority (KPPA) Staff and Wilshire are recommending investments for all KERS and SPRS portfolios in two actively managed U.S. Large Cap Public Equity mandates to be managed by J.P. Morgan and T. Rowe Price pending successful investment management agreement negotiations.

No placement agents have been involved or will be compensated as a result of this recommendation.

Introduction

In a continued effort to improve the portfolio, staff has decided to terminate its efforts managing a US large cap factor-based public equity portfolio modeled after Scientific Beta's US Four Factor Equal Weighted Index. This strategy seeks to implement tilts towards factors believed to add value over the longer-term (size, value, momentum, & volatility). While the strategy has performed relatively as expected, these factors have not been rewarded during its tenure in the KPPA portfolio for any sustainable period. In addition, the tracking error has been greater than expected. Therefore, it has been determined that the strategy should no longer be utilized as part of KPPA's global public equity strategy allocation. The liquidation of this portfolio will serve as the primary funding source for the new recommended active US large cap public equity strategies, with supplemental funding provided by the Internal S&P 500 Index portfolio. Staff desires to add value over the US large cap index through lower tracking error active management with reasonable fees given the exposure and expected relative performance.

This report serves as a review of the competitive, open search process in accordance with the Investment Policy Statement and the Investment Procurement Policy and serves as a recommendation to the Investment Committee to approve investments in the strategies within the global public equity allocation.

Established Criteria

The initial screening was established through collaboration with our independent investment consultant, Wilshire. The criteria were designed to capture as many strategies as possible, while at the same time ensuring the strategies meet certain minimum qualifications. Due to such a large universe of potential candidates, screening criteria was refined several times. The final screening criteria were as follows:

- U.S. Large Cap Universe: Benchmarks included S&P 500 and/or Russell 1000
- Active Management: Majority of holdings must be U.S. large cap stocks
- Firm AUM: greater than \$10 billion
- Strategy AUM: greater than \$1 billion
- Minimum five-year track record
- Firm/Team ranked by Wilshire's Manager Research Team third decile or better (qualitative)
- Separate Account Offering
- Relative Returns (1,3,5 & 10 Year Periods): Positive Excess
- Tracking Error (1,3,5 & 10 Year Periods): Above 1%
- Excess Information Ratios (1,3,5 & 10 Year Periods): Above 0.50
- Sharpe Ratios (1,3,5 & 10 Year Periods): Positive Excess
- Up/Down Capture Ratios (1,3,5, & 10 Year Periods): Above 1.0/Below 1.0

Candidate Pool

Preliminary screening from the Wilshire Investment Management database provided a candidate list of 111 potential strategies. Additional screening and staff input culled this list down to seven firms (nine strategies). These firms were provided a Request For Information (RFI), and from those responses, a short list was created for further due diligence.



The RFI recipients consisted of the following seven firms and nine strategies:

- Acadian Asset Management: Enhanced U.S. Equity
- BlackRock: Systematic Active Equity U.S. Alpha Tilts**
- Columbia Threadneedle: U.S. Contrarian Large Cap Core Strategy**
- Intech Investment Management: U.S. Enhanced Plus
- J.P. Morgan: Large Cap Core**
- J.P. Morgan: U.S. Analyst Large Cap Core Strategy
- J.P. Morgan: REI 150 Strategy
- Los Angeles Capital Management: U.S. Large Cap Enhanced Equity
- T. Rowe Price: U.S. Structured Research Equity Strategy**

** Strategy selected for further discussions.

General Process

Staff and consultant employed the same systematic process used in prior searches to narrow the potential candidates down to the finalists. The Wilshire Investment Management database, which consists over 12,000 strategies, is the starting point for setting the universe of potential ideas. This database is self-populated by external managers and contains a significant amount of information regarding their specific firm and its product(s). Minimum criteria are set to cull the potential candidate list down to a more manageable size, regarded as the short list. This criteria includes, but is not limited to qualitative assessments of the firm and portfolio management team, firm / product asset under management, available capacity, a demonstrated ability to add value over varying periods, length of track record, etc. Staff may add managers to the list that may not have either made it through the initial screen or who may not participate in the database. From this point, an additional cut is made based on further quantitative evaluation including, but not limited to, capture ratios, risk/return profiles, active share, etc. Staff then sent a Request For Information (RFI) to the remaining candidates (7 across 9 strategies) designed to generate insight into the firm's structure, staffing, product stability, investment team/philosophy/process, and other meaningful data points. Staff and consultant having read the RFI responses narrowed down the candidate list further for presentations and discussions (4). Additional discussions were held with the perceived frontrunner(s) prior to making the final decision to bring the finalists for presentation to the Investment Committee.

Organization Structure and Stability

J.P. Morgan

J.P. Morgan Investment Management Inc. is an investment advisor under J.P. Morgan Asset Management and is wholly owned by J.P. Morgan Chase & Company (founded in 1863), which is publicly traded on the NYSE (JPM). As of most recent available data, employees of J.P. Morgan Chase held roughly 3.5% of outstanding shares. The firm manages over \$1 trillion in public equity markets; the U.S. Large Cap Core Equity Strategy had an AUM of roughly \$81.9 billion as of 12/31/24.

T. Rowe Price

T. Rowe Price was founded in 1937 and later incorporated in 1947. It remained a wholly owned, privately held company for nearly 40 years. In 1986 the firm initiated its public offering, and in 2000, the firm reorganized itself into a holding company, known as T. Rowe Price Group, Inc. (TRPG). Today, TRPG remains an independent publicly traded company, with significant employee ownership, of approximately 7% of the outstanding shares. Firm AUM stood at approximately \$1,607 billion as of close 12/31/24. The U.S. Structured Research Equity Strategy platform had an AUM of \$89.6 billion.

Investment Team

J.P. Morgan

The investment team consists of three portfolio managers with an average of 25 years of investment experience, 19 of which have been spent with the firm. The lead portfolio manager has ultimate authority over all buys and sells. In



addition, the portfolio management team is responsible for ensuring strategy implementation, adherence to guidelines and risk controls. Portfolio managers are supported by a team of 18 dedicated career analysts who are sector specialists. Analysts average nearly 23 years of industry experience, and 12 years with the firm. Supporting each analyst is a “junior” person who has seven years of experience on average. Firm tenure across the team demonstrates stability.

T. Rowe Price

The strategy is analyst driven; however, it is managed by a five-member portfolio oversight committee. The committee assigns coverage to an analyst stable of 28, who are industry specialists. In addition to assigning coverage areas, the committee is responsible for mentoring and developing the analysts, ensuring adherence to portfolio constraints, and risk management. Members of the portfolio oversight committee have an average investment experience of over 21 years, and an average tenure on the strategy of approximately 9 years, demonstrating stability. Analysts’ investment experience ranges from four to +15 years.

Investment Philosophy and Process

J.P. Morgan

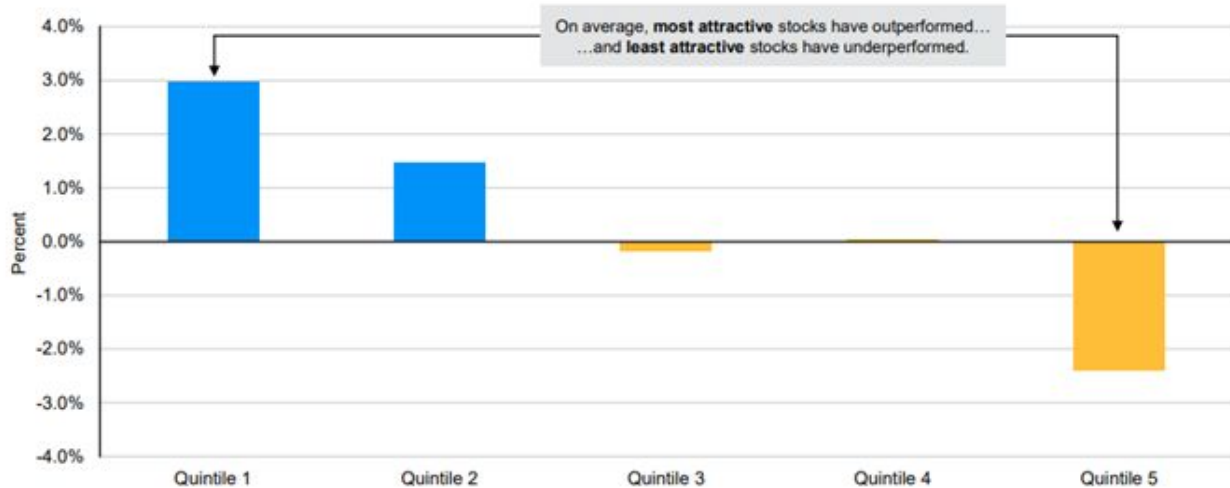
The firm believes that by understanding the long-term normalized earnings power of a company, they can take advantage of mispricing that results from near-term information. Further, the team holds that consistent outperformance can be achieved through solid stock selection in the context of a high conviction fully invested, broadly diversified and style consistent portfolio. The key to being able to do this lies in an information advantage that is developed through proprietary, fundamental research.

The investment process breaks down into three key steps: 1) create a sustainable, proprietary information advantage by leveraging a dedicated team of fundamental analysts, 2) utilize a systematic valuation process to quantify forward-looking views and capture analysts’ insights, and 3) construct portfolios with a focus on driving alpha through stock selection while concentrating the risk budget in the highest conviction ideas.

The team looks to build an information advantage by leaning on proprietary, fundamental research conducted by analysts who are career specialists in a particular industry. Analysts spend time meeting with company management, suppliers, competitors, and end-users, to gain a full appreciation of the investment drivers of stocks they cover. Analysts strive to gain an understanding of the dynamics of a business, its growth prospects, and the sustainability of competitive advantage. This is done by studying the economics (how a business creates value for shareholders), duration (the sustainability of value creation), and governance of an opportunity. All three of these are influenced by industry factors, company factors, and management choices.

The team follows a systematic valuation process where the main inputs are the analysts’ forecasts of company earnings and dividends, determined by extensive analysis of each company’s business outlook and financial situation. Long-term forecasts of future earnings, cash flows and dividends, as well as a stock’s current price, are key inputs into the valuation process. Analysts seek to determine normalized long-term earnings and establish if the current stock price is under or over-valued given this outlook. Each stock is characterized into an industry sector and ranked into quintiles based on the determined internal rate of return for each stock.

January 1, 1987 – December 31, 2024

Quintile Performance vs. S&P 500 Index

Portfolio construction is a function of the portfolio manager selecting the most attractively valued stocks within each sector, typically purchasing those names in the first two quintiles. However, the PM may purchase and hold names ranked in any quintile. This could be from a risk mitigation perspective (portfolio construction), or acknowledgement that a stock ranked in the fourth quartile of one sector may be more attractive than a stock ranked in the first quintile of another. Holdings are focused among those names that are attractively valued, where insights are differentiated, and conviction is high. Ultimately, where there exists a compelling risk-reward relationship. The manager states, the best stock to own is one “which is fundamentally undervalued, displays positive price momentum, and has a healthy balance sheet with positive earnings estimates.” Conversely, those names that find themselves slipping down the quintile rankings are candidates for trimming or full sells.

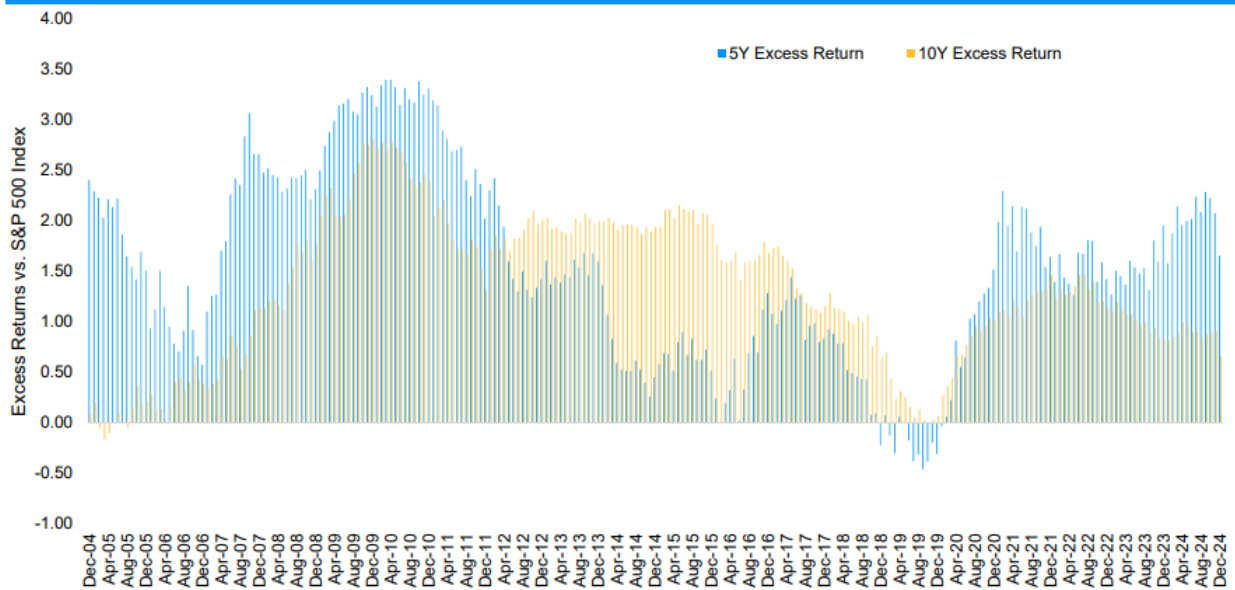
The final portfolio typically consists of 50-70 stocks and has an expected tracking error of 2-4%. Relative sector weights are limited to +/- 4%. Security specific relative weights are also, +/- 4%; however, securities are limited to maximum exposure of 5% at the time of purchase. The portfolio is expected to be fully invested with a cash position of 0-3%.

The portfolio management team is responsible for evaluating the overall level of risk relative to the benchmark. The team utilizes tools such as Barra and FactSet to monitor for style drift or value at risk. Further, a Guidelines and Monitoring Team is responsible for monitoring daily compliance with client guidelines. Trading compliance software (Sentinel) is utilized to run pre-trade checks on all orders submitted prior to execution to ensure portfolio compliance with guidelines.



As demonstrated from the chart above, the strategy is not style dependent. The primary driver of relative performance is stock selection. The strategy is most successful when the market is rational, and values companies based on their fundamental long-term expected profitability. Analysts’ ability to forecast accurately versus market consensus is critical. The strategy is likely to struggle when the market values securities outside of fundamental characteristics. However, these periods tend to be short-lived. The following chart demonstrates the consistency of the strategy’s relative outperformance.

5 Year and 10 Year Rolling Excess Returns (Net) vs. S&P 500 Index



T. Rowe Price

The firm’s investment philosophy hinges on three core beliefs. First, fundamental research is key to discovering companies that will outperform their peers. This tenant is bolstered by the insight that not all investors are equally well-informed meaning research and the pursuit of differentiated sources of information can provide a competitive edge.



Further, a company’s earnings and revenue stream are often mispriced (relative to history, sector/industry, or market) and gains can be harvested through stock price mean reversion. Second, the firm believes many investors overreact to news, whether good or bad, which provides disciplined investors opportunities to both buy and/or sell. Last, the strategy seeks to add value over a full market cycle rather than in short-term market fluctuations, recognizing that sector, style, and capitalization leadership is often difficult to anticipate.

The strategy is essentially a collection of industry focused analyst driven portfolios that use a fundamental bottom-up approach to stock selection. Capital is allocated across the analyst team in alignment with the index weights associated with their coverage area. Each analyst manages their own portfolio in the terms of security selection, weights, and the timing of trades. Analysts choose to overweight, underweight, or hold non-index securities expressing conviction in each holding based on company-specific research. This research incorporates a business’s financial condition, an evaluation of a company’s business model / management quality / market position, and an assessment of the company’s valuation. A sell discipline is incorporated throughout the assessment / portfolio monitoring process. Holdings are candidates for sell (whether trimming or wholesale) are those that experience a change in their fundamental assessment, relative valuation becomes no longer attractive, better opportunities emerge, and through rebalancing.



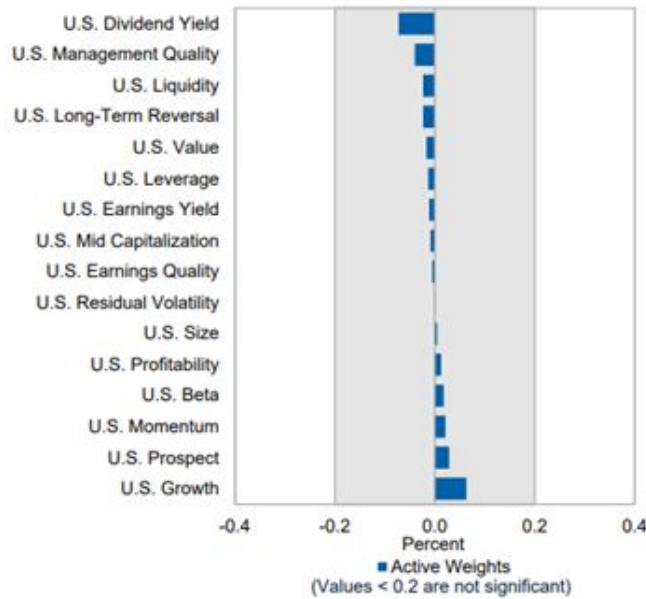
The final portfolio typically consists of 200-275 stocks with typical relative weights ranging in +/-15bps, resulting in a portfolio with an expected tracking error of less than 1.75%. The portfolio is relatively industry/sector neutral with industry ranges of +/-100bps and sector ranges of +/-150bps. Active position sizes typically range +/-100bps (stocks that are more than 3% of the index, +/-150bps). The portfolio is allowed to invest in non-benchmark securities with a maximum position of 50bps, and an aggregate limit of 10%.

As noted, analyst activity is subject to the Portfolio Oversight Committee. The committee is comprised of five portfolio managers who assign coverage areas, mentor and develop analysts, oversees analyst activity, and ensures adherence to portfolio constraints and risk controls.

Risk management is primarily the responsibility of the Portfolio Oversight Committee. The committee utilizes a proprietary tool to monitor the risk profile of the portfolio, along with Barra risk model, Zepher SyleADVISOR, and FactSet to develop a daily risk management report. Risk is managed by closely monitoring factor exposures, controlling active position sizes, maintaining industry and sector neutrality, and monthly rebalancing.



BARRA^{1,2} RISK FACTORS FOR US STRUCTURED RESEARCH EQUITY REPRESENTATIVE PORTFOLIO—ACTIVE EXPOSURES



As mentioned, (and demonstrated by the above chart) the strategy’s relative success is not dependent on style, sector, or the direction of market. As such, this is an all-weather strategy that should perform in both bull and bear markets regardless of drivers. However, the strategy can find itself lagging in more narrowly led markets.

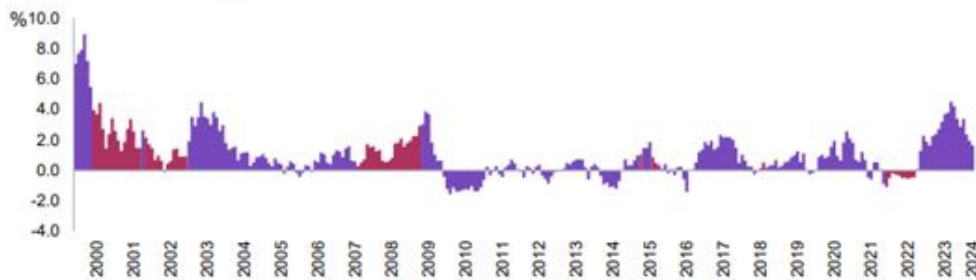
GROWTH AND VALUE-MARKET EXCESS RETURNS (NET OF FEES)¹



Growth Markets
 81% Hit rate +1.2% Average excess return

Value Markets
 74% Hit rate +0.8% Average excess return

UP AND DOWN-MARKET EXCESS RETURNS (NET OF FEES)²



Up Markets
 76% Hit rate +1.0% Average excess return

Down Markets
 84% Hit rate +1.2% Average excess return



Client Stability

J.P. Morgan

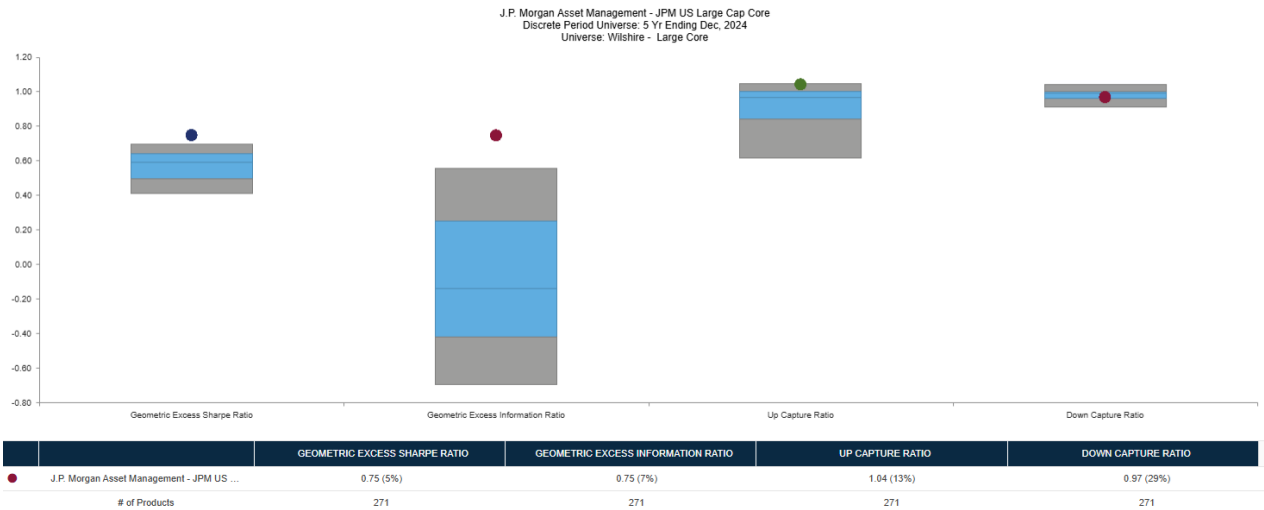
The strategy has been stable in terms of the number of clients and net flows. Over the past few years, the strategy has netted an additional 21 client relationships, bringing the total to over 70. Further, the strategy has experienced net inflows of over \$740 million during that same period. Per the manager, this is considered the flagship strategy of their core domestic efforts, and as such is seeing significant interest from potential clients.

T. Rowe Price

The strategy has been relatively stable in terms of the number of clients and net flows. Over the past few years, the strategy has netted an additional seven client relationships, bringing the total to nearly 50. Further, the strategy has experienced net inflows of over \$300 million during that same period.

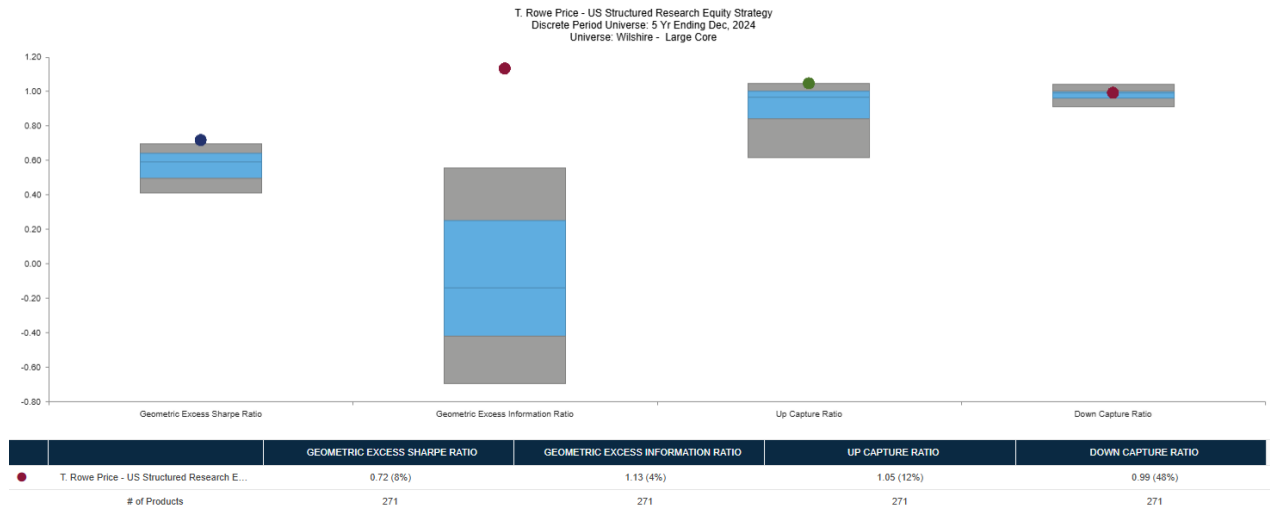
Performance

J.P. Morgan					
As of: 12/31/24	1YR	3YR	5YR	10YR	SI
US Large Cap Core Equity Strategy	24.83	9.21	16.49	14.06	12.49
S&P 500 Index	25.02	8.94	14.53	13.10	11.31
<i>Relative Performance (+/-)</i>	<i>-0.19</i>	<i>0.27</i>	<i>1.96</i>	<i>0.96</i>	<i>1.18</i>
Inception Date: 12/31/85					



T. Rowe Price					
As of: 12/31/24	1YR	3YR	5YR	10YR	SI
US Structured Research Equity Strategy	26.99	10.53	15.87	14.37	9.59
S&P 500 Index	25.02	8.94	14.53	13.10	8.06
<i>Relative Performance (+/-)</i>	<i>1.97</i>	<i>1.59</i>	<i>1.34</i>	<i>1.27</i>	<i>1.53</i>
Inception Date: 05/31/99					





Implementation and Portfolio Sizing

As of close December 31, 2024, across the pension and insurance trusts KPPA invested approximately \$397.1 million in the U.S. large cap factor-based strategy. This equates to roughly 5.2% of the U.S. equity exposure, or approximately 3.3% of KPPA’s total global public equity investments.

Staff and the consultant believe that it is time to retire from its current factor-based investing efforts. These funds should be utilized to fund calculated risk-aware active investment management. Further, staff and the consultant believe the allocation should be more meaningful in terms of its attribution to performance. As mentioned previously, additional funds would be provided from the internal large cap portfolios.

Standalone, each suggested alternative produces less risk, defined by tracking error, than the current factor-based strategy. Further, by upsizing the allocation and blending the two finalists, expected return can be improved while maintaining current risk levels in the greater portfolio. The two strategies complement one another, while both candidates are expected to outperform the index over a market cycle, they are expected to do so with differentiated return paths. T. Rowe Price’s offering provides a well-diversified large number of incremental bets that historically produce an all-weather portfolio that produces outperformance that compounds overtime. On the other hand, J.P. Morgan’s offering, while diversified, takes larger relative positions versus the index. This creates the opportunity for greater excess return, albeit with a higher level of relative risk, which leads to a less predictable return path. It should be noted that both strategies boast impressive Sharpe and information ratios, pointing to a good risk / reward trade. By blending the two strategies, staff believes that the Systems can benefit from an increased expected return while smoothing the return path. Given the two strategies operate in the same space utilizing the same benchmark, it is expected that they would have a positive correlation; however, because of the differences in portfolio construction and expected return paths, the projected correlation between the two strategies is 0.53, far from perfectly correlated, demonstrating a level of diversification.



Staff is seeking approval for up to a total of 12.5% of the Global Public Equity allocation in the combined mandates, with initial funding of approximately 6.6% of the Global Public Equity allocation.

Initial Approximate Plan Participation based on 12/31/24 Allocations				
KERS	77,000,000.00	KERS INS	40,300,000.00	117,300,000.00
KERS-H	27,300,000.00	KERS-H INS	16,200,000.00	43,500,000.00
CERS	308,800,000.00	CERS INS	111,000,000.00	419,800,000.00
CERS-H	111,600,000.00	CERS-H INS	57,400,000.00	169,000,000.00
SPRS	14,300,000.00	SPRS INS	6,600,000.00	20,900,000.00
	539,000,000.00		231,500,000.00	770,500,000.00

Management Fees

J.P. Morgan

The manager has proposed an effective annual fee for the strategy of 28bps based on an initial funding allocation size of approximately \$383.3 million across both the pension and insurance trusts. This is a competitive rate based on the universe data supplied by Wilshire for similar strategies of similar size. The proposed rate ranks just outside of the top quartile (cheapest) among active U.S. large cap strategies. It should be noted that the manager will offer relational pricing upon funding. This would effectively bring the strategy cost down to 27bps and would create additional savings of 3-4bps on the emerging market strategy currently utilized in the global public equity allocation.

T. Rowe Price

The manager has proposed an effective annual fee for the strategy of 24bps based on an initial funding allocation size of approximately \$383.3 million across both the pension and insurance trusts. This is a competitive rate based on the universe data supplied by Wilshire for similar strategies of similar size. The proposed rate ranks in the top quartile (cheapest) among active U.S. large cap strategies.

Third-Party Provider and Placement Agent Disclosure

In accordance with KRS' & CERS' gating practices, staff has requested the finalist to acknowledge transparency requirements, and to complete a conflict of interest statement and placement agent form. No placement agents have been involved or will be compensated as a result of this recommendation. A copy of the managers' Statement of Conflict of Interest and Placement Agent questionnaire have been attached to this recommendation.

Recommendation

As previously stated, in a continued effort to improve the portfolio, staff has made the determination to recommend terminating the internal US large cap factor-based portfolios. The allocation will serve as the primary funding source to establish the new active relationships in the US large cap space, with secondary funding coming from the Internal S&P 500 mandates.

Staff and the consultant believe the J.P. Morgan's US Large Cap Core Equity and the T. Rowe Price's US Structured Research Equity strategies will be a positive addition to the KPPA investment program. While distinct strategies, the shared philosophical belief in conjunction with differentiated construction methodologies, yields complimentary return profiles. Neither strategy relies on style biases or tilts to drive relative performance, but rather on idiosyncratic stock selection, which helps to insulate relative performance from macro themes. The expected result is a more efficient public equity portfolio, with a better risk/reward profile and increased diversification, as the strategies have low to negative correlations with existing public equity mandates.

Based on the comprehensive search conducted and the compelling opportunity to enhance the overall global public equity allocation, KPPA Staff and Wilshire put forth the following recommendations for the Investment Committee's consideration:

J.P. Morgan – U.S. Large Cap Core Equity Strategy

Up to 6.25% of the total global public equity allocation, with initial funding of approximately 3.3% (approximately \$383.3 million). Primary funding to come from the existing internal factor-based US large cap portfolios, with additional funds from the Internal S&P 500 portfolios.

T. Rowe Price – U.S. Structured Research Equity Strategy

Up to 6.25% of the total global public equity allocation, with initial funding of approximately 3.3% (approximately \$383.3 million). Primary funding to come from the existing internal factor-based US large cap portfolios, with additional funds from the Internal S&P 500 portfolios.

We welcome any comments or questions by the Committee.

Appendix

- Wilshire: Large Cap Core Manager Search Packet (Contains Short-list Candidate Pool)
- J.P. Morgan Conflict of Interest and Placement Agent Disclosure
- T. Rowe Price Conflict of Interest and Placement Agent Disclosure

Wilshire

Kentucky Public Pensions Authority

Large Cap Core Manager Search

February 2025

Introduction

- Wilshire has worked with Staff to identify risk-controlled Large Cap Core strategies to replace the Scientific Beta strategy
- Sizing of the mandate is approximately \$700m which could be awarded to a single investment manager or split between two firms
- Managers and strategies included in the search are:
 - BlackRock US Alpha Tilts
 - Columbia Threadneedle US Contrarian Large Cap
 - JP Morgan US Large Cap Core
 - T. Rowe Price US Structured Research Equity

Search Overview

- Initial screen included both quantitative and qualitative screening criteria resulted in over 100 strategies
 - Performance (Absolute and Excess returns)
 - Tracking Error
 - Sharpe Ratio
 - Information Ratio
 - Up/Down Capture Fees
 - Wilshire Manager Research Ranking
- Evaluated characteristics above over one, three, five, and ten-year periods
- Narrowed the list by relative consistency and ranking of the characteristics over all time periods
- Invited eight firms, spreading across ten strategies, to participate in an RFI (Request for Information)
- Seven firms responded across nine strategies from which virtual interviews were scheduled
- Final interviews were conducted with four firms across four strategies

U.S. Equity Large Cap Core Finalists

Firm	Strategy	Location	Firm AUM (\$MM)	Year Firm Established	Product Inception	Product AUM (\$MM)	Percentage of Assets	Fee Schedule
BlackRock	US Alpha Tilts	Wilmington, DE	\$11,551,251	1988	1985	\$2,814	24.88%	0.30% first \$100M 0.25% on balance
Columbia Threadneedle	US Contrarian Large Cap Core	Stamford, CT	\$649,586	1994	2002	\$29,446 ⁽¹⁾	2.38%	0.32% first \$200M 0.26% next \$200M 0.20% next \$400M
JP Morgan Asset Management	US Large Cap Core	New York, NY	\$3,479,228	1863	1996	\$81,745	0.86%	0.32% first \$250M 0.30% on balance
T. Rowe Price	US Structured Research Equity	Zurich, SWITZ	\$1,574,400 ⁽¹⁾	1937	1999	\$85,469 ⁽¹⁾	0.82%	0.24%

⁽¹⁾ As of 9/30/2024

Wilshire Manager Research

Investment Manager	Overall Decile Rating	Organization (20%)	Information (20%)	Forecasting (20%)	Portfolio Construction (20%)	Implementation (10%)	Attribution (10%)
BlackRock US Alpha Tilts	2 nd	3 rd	3 rd	1 st	1 st	1 st	1 st
Columbia Threadneedle US Contrarian Large Cap	1 st	1 st	1 st	1 st	1 st	3 rd	2 nd
JP Morgan US Large Cap Core	1 st	2 nd	1 st	1 st	1 st	1 st	2 nd
T. Rowe Price US Structured Research Equity	2 nd	1 st	1 st	2 nd	2 nd	4 th	3 rd

- **Organization:** Scores organizational structure and stability
- **Information:** Scores the ability to gather and process unique sources of information
- **Forecasting:** Scores the discipline and consistency of a forecasting process
- **Portfolio Construction:** Scores portfolio construction and risk management
- **Implementation:** Scores a manager's ability to transact in the market
- **Attribution:** Scores the use of attribution information and portfolio feedback
- **Total =** Weighted sum product of the individual criteria

		Rating Scale									
Decile		1	2	3	4	5	6	7	8	9	10
Corresponding Grade		A		B		C		D		E	

Strategy Highlights

BlackRock US Alpha Tilts

The BlackRock Systematic Active Equity (SAE) group, which was formerly known as Barclays Global Investors (BGI) Active Equity, offers a quantitatively engineered US Alpha Tilts portfolio that seeks to outperform the S&P 500 Index. The strategy is managed by a seasoned team of investment professionals that is under the co-Heads of Systematic Active Equity, Raffaele Savi and Jeff Shen. The process incorporates fundamental rationale and is quantitatively driven to produce a diversified portfolio of roughly 100-300 securities. Some of these fundamental insights include Relative Valuation, Earnings Quality, Sentiment, and Macro Themes. The process is research intensive as the team endeavors to maintain a competitive profile by constantly exploring new factors to incorporate. The intent of the strategy is to outperform the benchmark by roughly 1-2% with a tracking error level around 2%.

Columbia Threadneedle US Contrarian Large Cap

The Columbia Contrarian Large Cap Core strategy is a moderately concentrated, active strategy that seeks to produce 150 to 350 basis points of excess returns on an annual basis versus the Russell 1000 Index. The strategy is led by portfolio manager Guy Pope, who leverages the insights of a research platform consisting of industry-specific analysts. Mr. Pope has served as a PM for the firm since 1996 and for this particular strategy since July 2004, gradually becoming the sole PM as his peers resigned in 2005 and 2006. For the management of the strategy, the team leverages the research of the fundamental equity team, which consists of over 20 analysts/associates that demonstrate deep industry knowledge. They are also supported by the six-member quantitative research team. The philosophy seeks out-of-favor companies and hence is contrarian in nature. Overall, the process has impressive depth in research, while maintaining flexibility with respect to exact valuation methodology at the stock level. The team has demonstrated a strong and consistent ability to add value through security selections while not taking excessive risk to do so. The process is flexible and may emphasize value or growth stocks at any given time. The resulting portfolio is risk-minded, but active.

Strategy Highlights

JPM US Large Cap Core

JP Morgan Large Cap Core is a highly competitive large cap product that is designed to outperform the S&P 500 Index by approximately 2% over a full market cycle gross of fees with an expected tracking error of 2-4%. Backing the portfolio management team is a relatively stable and very deep team of sector specific research analysts. The process is robust and forward looking, calculating an internal rate of return through an expected returns framework utilizing proprietary estimates. The investment process is also highly objective using a ranking system. Overall, Wilshire finds the product suitable for standalone large cap core exposure. Scott Davis, who has been a portfolio manager on the strategy since 2014, took over lead portfolio management responsibilities following Tom Luddy's retirement in January 2018.

T. Rowe Price US Structured Research Equity

The T. Rowe Price US Structured Research Strategy represents a "best of breed" option in the fundamental research based enhanced index universe. The firm's Capital Opportunity Fund mirrors this strategy but offers a longer term track record for comparison purposes. The strategy is a low tracking error (<175 bps) product that relies upon a large number of fundamental research analysts to individually manage sleeves of the portfolio. It is somewhat unique in that it has low active risk, a large number of holdings, yet is driven by qualitative research. This strategy is attractive, as it provides the disciplined portfolio construction of quantitative products with the rich insights of fundamental research.

Performance (Absolute and Excess Returns)

December 31, 2024					
Absolute	Quarter	One Year	Three Years	Five Years	Ten Years
BlackRock - US Alpha Tilts	2.09	27.16	9.31	15.19	13.44
Columbia Threadneedle - US Contrarian Large Cap Core	2.52	24.22	10.68	15.87	13.56
JPM - US Large Cap Core	1.31	24.74	9.16	16.45	14.07
T. Rowe Price - US Structured Research Equity	2.95	26.97	10.55	15.95	14.35
<i>S&P 500</i>	<i>2.41</i>	<i>25.02</i>	<i>8.94</i>	<i>14.53</i>	<i>13.10</i>
<i>Russell 1000</i>	<i>2.75</i>	<i>24.51</i>	<i>8.41</i>	<i>14.28</i>	<i>12.87</i>
Excess	Quarter	One Year	Three Years	Five Years	Ten Years
BlackRock - US Alpha Tilts	-0.32	2.14	0.37	0.66	0.34
Columbia Threadneedle - US Contrarian Large Cap Core ⁽¹⁾	-0.23	-0.29	2.27	1.59	0.69
JPM - US Large Cap Core	-1.10	-0.28	0.22	1.92	0.97
T. Rowe Price - US Structured Research Equity	0.54	1.95	1.61	1.42	1.25

(1) Columbia Threadneedle – US Contrarian Large Cap Core is benchmarked against the Russell 1000 Index. All other managers and strategies are benchmarked against the S&P 500 Index.

Annual Returns (Absolute and Excess)

December 31, 2024											
Absolute Returns	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BlackRock - US Alpha Tilts	14.38	1.02	11.33	24.53	-4.51	30.12	19.33	30.12	-18.73	26.40	27.16
Columbia Threadneedle - US Contrarian Large Cap Core	13.88	3.77	9.37	22.49	-8.21	33.83	23.14	25.09	-17.96	33.03	24.22
JPM - US Large Cap Core	15.15	1.38	11.85	22.20	-5.35	32.87	27.40	29.20	-18.50	27.94	24.74
T. Rowe Price - US Structured Research Equity	12.86	3.61	10.88	24.36	-3.93	32.86	20.74	28.49	-18.37	30.34	26.97
S&P 500	13.69	1.38	11.96	21.83	-4.38	31.49	18.40	28.71	-18.11	26.29	25.02
Russell 1000	13.25	0.92	12.05	21.69	-4.78	31.43	20.96	26.45	-19.13	26.53	24.51
Excess Returns	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BlackRock - US Alpha Tilts	0.69	-0.36	-0.63	2.70	-0.13	-1.37	0.93	1.41	-0.62	0.11	2.14
Columbia Threadneedle - US Contrarian Large Cap Core ⁽¹⁾	0.63	2.85	-2.68	0.8	-3.43	2.40	2.18	-1.36	1.17	6.5	-0.29
JPM - US Large Cap Core	1.46	0.00	-0.11	0.37	-0.97	1.38	9.00	0.49	-0.39	1.65	-0.28
T. Rowe Price - US Structured Research Equity	-0.83	2.23	-1.08	2.53	0.45	1.37	2.34	-0.22	-0.26	4.05	1.95

(1) Columbia Threadneedle – US Contrarian Large Cap Core is benchmarked against the Russell 1000 Index. All other managers and strategies are benchmarked against the S&P 500 Index.

Risk (Absolute and Excess)

December 31, 2024				
Standard Deviation of Return	One Year	Three Years	Five Years	Ten Years
BlackRock - US Alpha Tilts	11.07	17.11	18.10	15.31
Columbia Threadneedle - US Contrarian Large Cap Core	10.40	17.05	18.18	15.50
JPM - US Large Cap Core	11.47	17.04	18.27	15.86
T. Rowe Price - US Structured Research Equity	10.71	17.42	18.38	15.53
<i>S&P 500</i>	<i>10.67</i>	<i>17.40</i>	<i>18.21</i>	<i>15.36</i>
<i>Russell 1000</i>	<i>11.04</i>	<i>17.65</i>	<i>18.64</i>	<i>15.65</i>
Standard Deviation of Excess Returns (Tracking Error)	One Year	Three Years	Five Years	Ten Years
BlackRock - US Alpha Tilts	1.41	1.36	1.31	1.47
Columbia Threadneedle - US Contrarian Large Cap Core ⁽¹⁾	2.72	2.80	2.77	2.45
JPM - US Large Cap Core	1.85	1.97	2.25	2.33
T. Rowe Price - US Structured Research Equity	1.08	1.07	1.10	1.07

(1) Columbia Threadneedle – US Contrarian Large Cap Core is benchmarked against the Russell 1000 Index. All other managers and strategies are benchmarked against the S&P 500 Index.

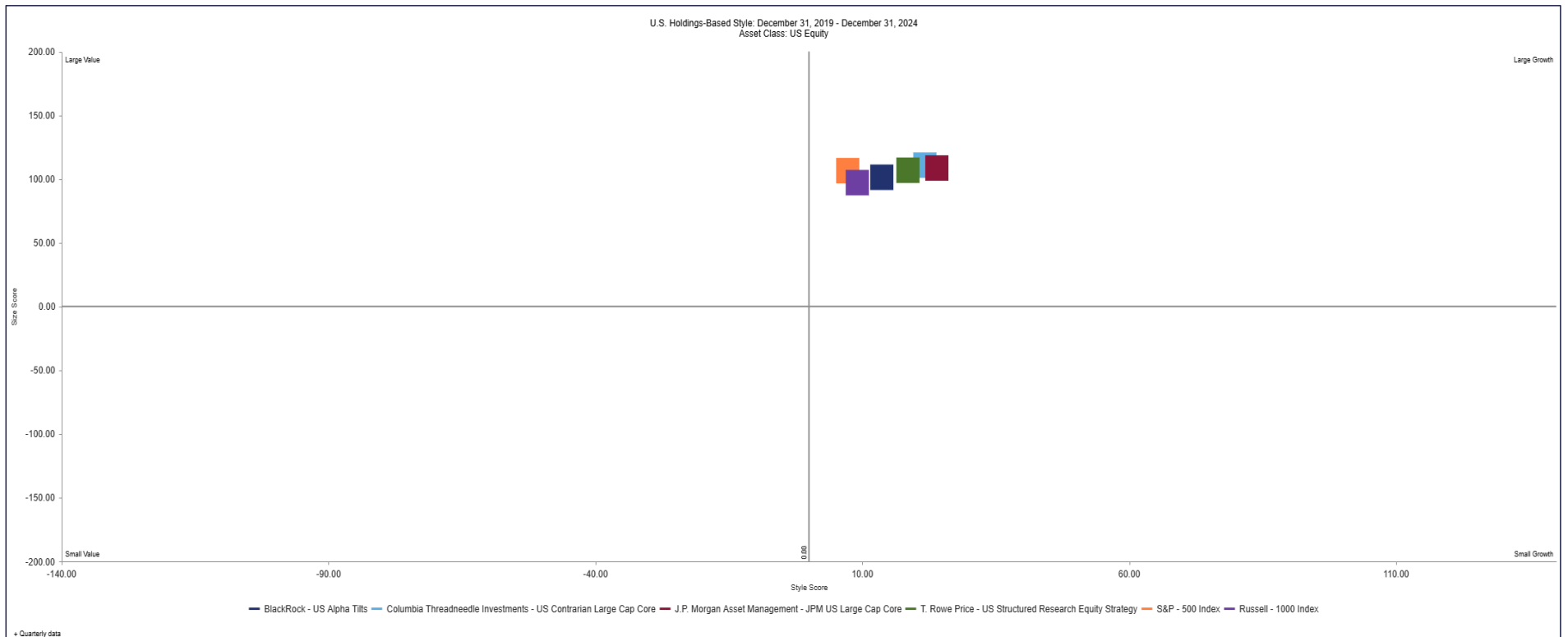
Portfolio Characteristics

Sector	BlackRock US Alpha Tilts	Columbia Threadneedle US Contrarian Large Cap Core	JPM US Large Cap Core	T. Rowe Price US Structured Research	S&P 500 Index	Russell 1000 Index
Beta	0.95	0.95	0.96	0.97	0.96	0.99
R-squared (%)	0.99	0.97	0.98	0.99	0.99	1.00
P/E	28.71	34.13	29.42	31.09	30.46	30.83
P/B	5.19	5.68	5.69	5.27	5.06	4.77
Equity Yield	1.19	1.04	1.13	1.12	1.28	1.27
EPS Growth	14.75	14.99	16.34	16.15	15.54	15.09
Dividend Growth	7.10	6.19	7.29	6.32	6.23	6.23
ROE	53.99	41.25	49.09	56.05	55.91	51.89
D/EQT	0.91	0.88	1.01	0.91	0.89	0.90
Median Mkt Cap (\$BB)	32.10	129.36	105.44	55.43	37.13	14.61
Weighted Mkt Cap (\$BB)	1,162.68	1,094.83	1,158.61	1,114.18	1,054.05	951.53
% > \$25 Billion	91.25	94.62	99.92	93.11	94.63	88.65
% \$25 – 10 Billion	6.45	4.91	0.08	5.81	4.91	7.53
% \$10 – 2 Billion	2.30	0.48	0.00	1.08	0.47	3.77

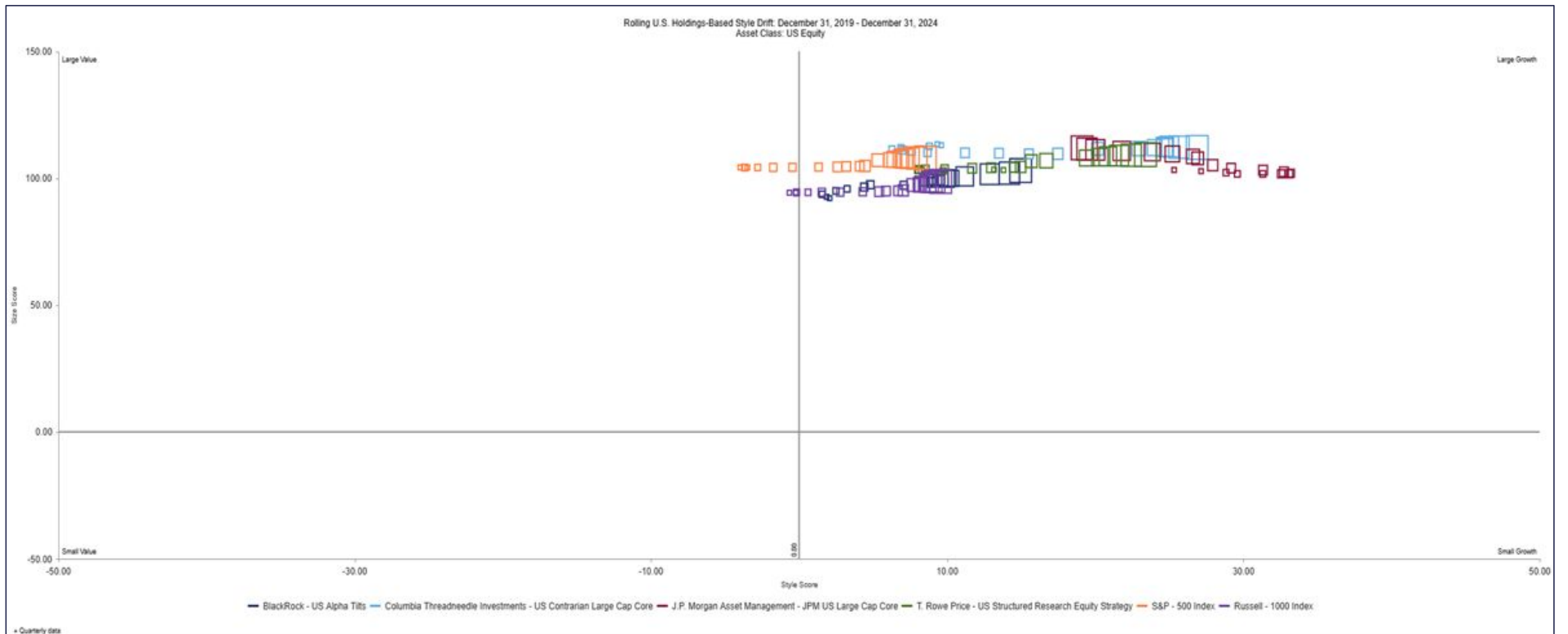
Portfolio Sectors

Sector	BlackRock US Alpha Tilts	Columbia Threadneedle US Contrarian Large Cap Core	JPM US Large Cap Core	T. Rowe Price US Structured Research	S&P 500 Index	Russell 1000 Index
Consumer Discretionary	10.17	10.82	12.47	11.43	11.26	11.48
Consumer Staples	5.11	5.22	1.20	5.32	5.53	5.38
Energy	2.47	3.15	4.85	3.28	3.16	3.29
Financials	14.13	14.63	14.32	14.12	13.62	14.03
Healthcare Services	10.15	9.70	10.10	10.37	10.09	10.06
Industrials	9.55	7.23	9.85	7.22	8.16	9.00
Information Technology	33.5	33.06	34.56	32.79	32.49	30.72
Materials	2.45	0.65	1.91	1.82	1.89	2.20
Real Estate	1.46	1.09	0.80	1.81	2.10	2.39
Telecommunications	9.61	12.60	6.39	9.47	9.37	9.22
Utilities	1.40	1.86	3.56	2.36	2.33	2.23

Holdings Based Style Analysis

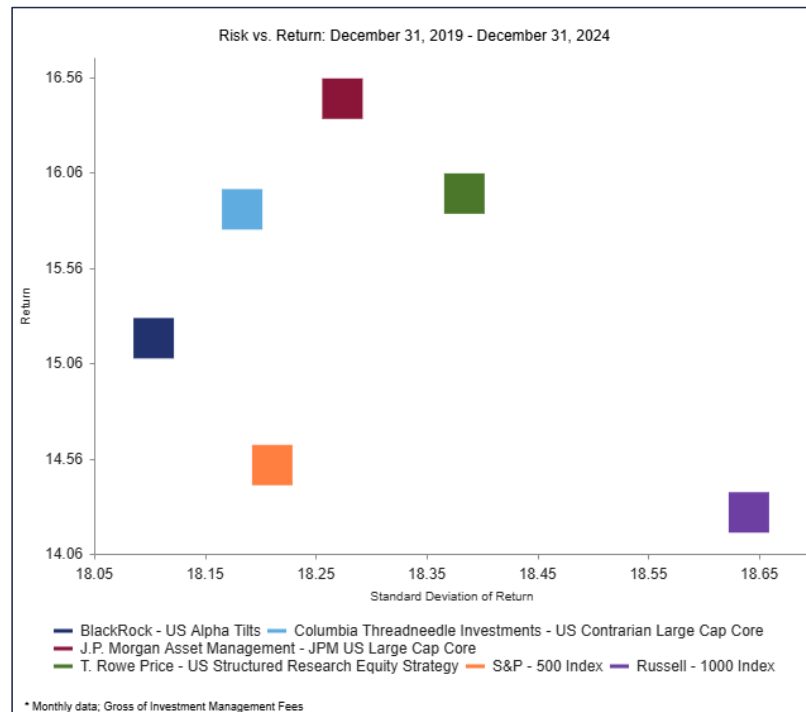


Rolling Holdings Based Style Analysis

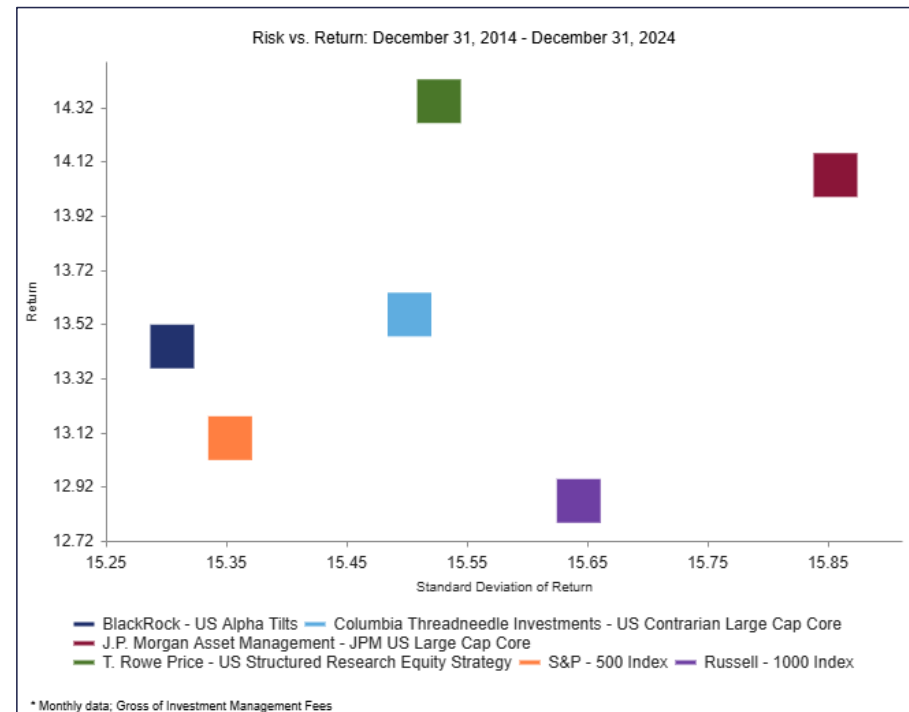


Risk vs. Return – Total

5 year

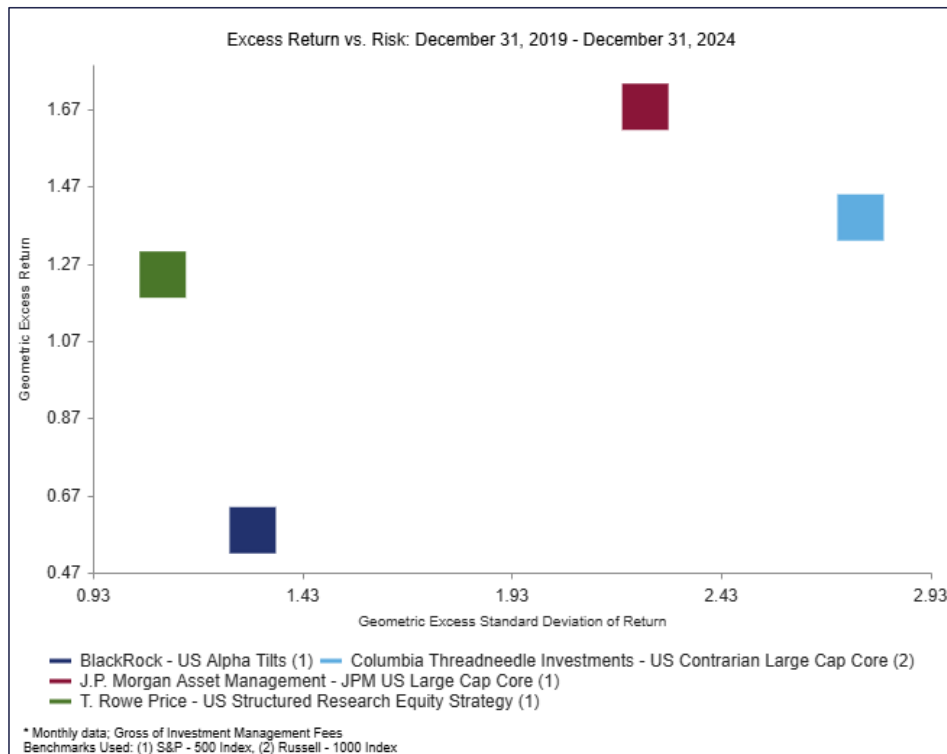


10 year

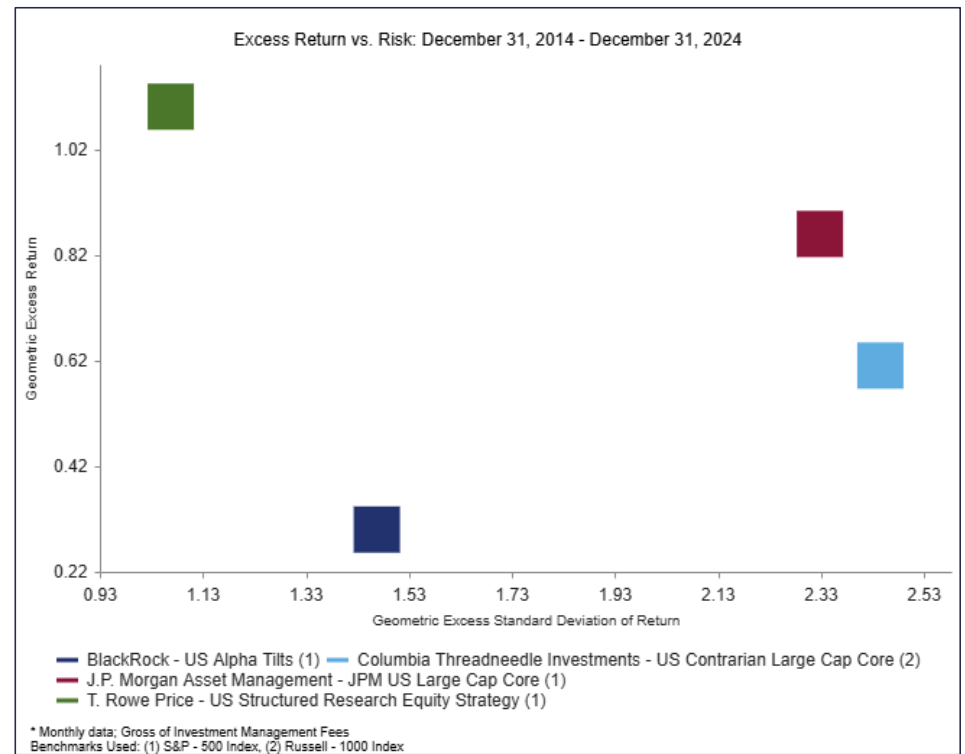


Risk vs. Return – Excess

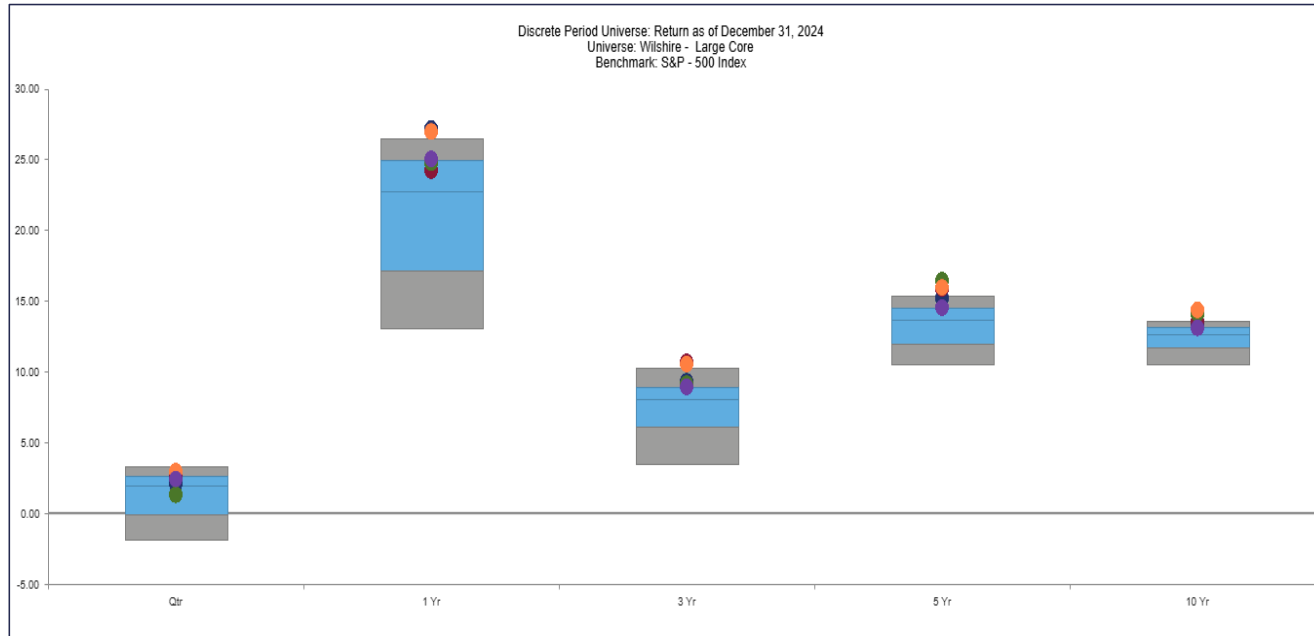
5 year



10 year

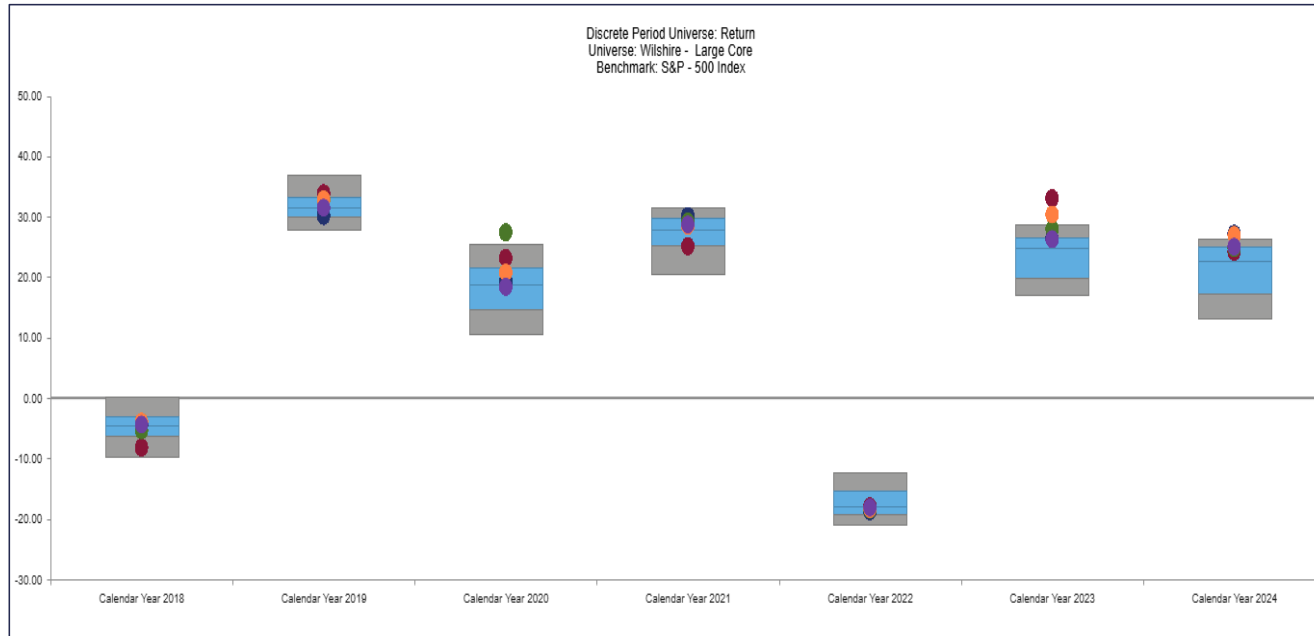


Peer Group / Universe Analysis



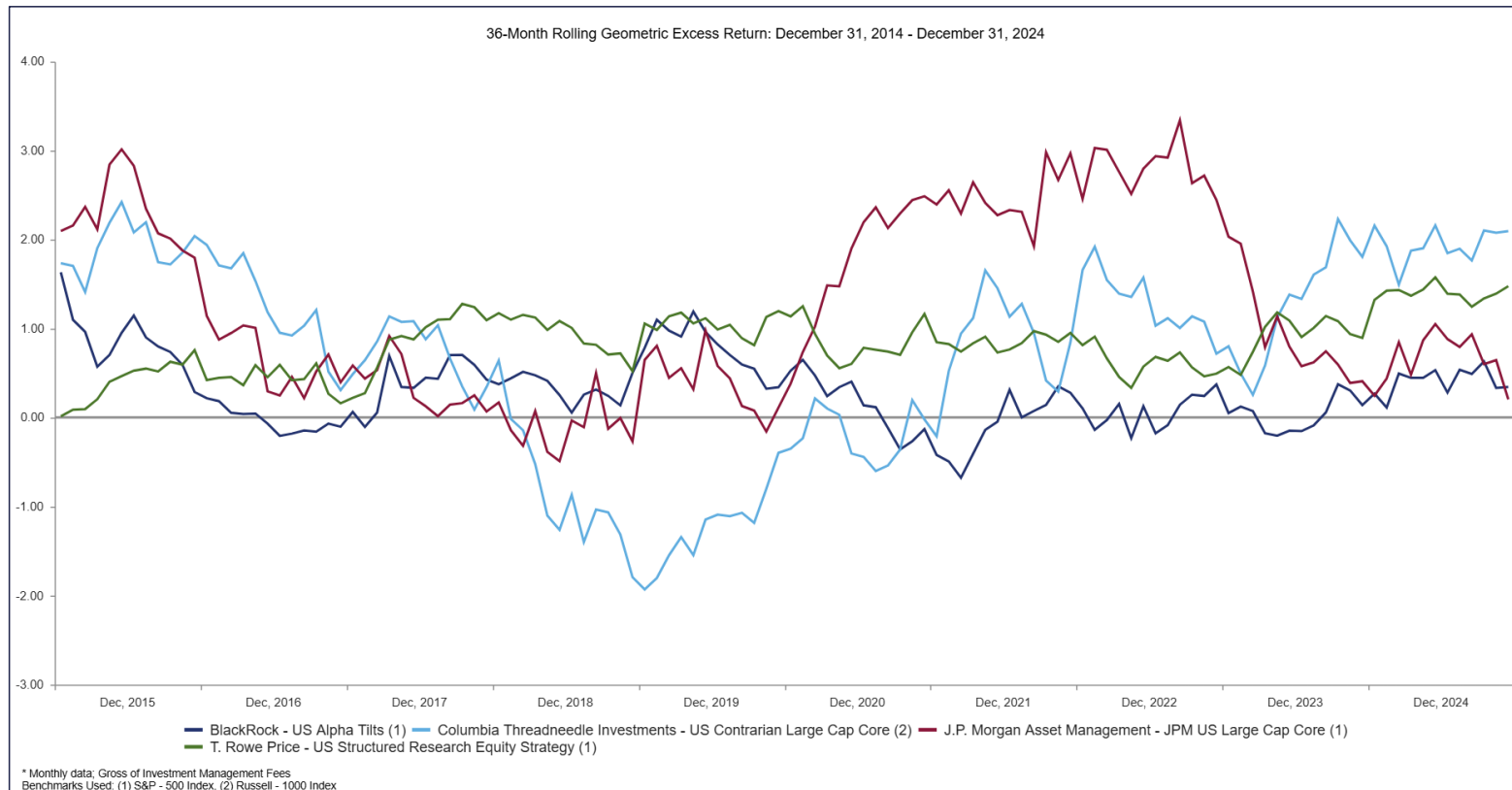
	QTR	1 YR	3 YR	5 YR	10 YR
● BlackRock - US Alpha Tilts	2.09 (48%)	27.16 (8%)	9.31 (21%)	15.19 (12%)	13.44 (14%)
● Columbia Threadneedle Investments - US Contrarian Large Cap Core	2.52 (33%)	24.22 (37%)	10.68 (7%)	15.87 (8%)	13.56 (13%)
● J.P. Morgan Asset Management - JPM US Large Cap Core	1.31 (60%)	24.74 (29%)	9.16 (23%)	16.45 (5%)	14.07 (6%)
● T. Rowe Price - US Structured Research Equity Strategy	2.95 (13%)	26.97 (9%)	10.55 (9%)	15.95 (7%)	14.35 (5%)
● S&P - 500 Index	2.41 (37%)	25.02 (24%)	8.94 (27%)	14.53 (25%)	13.10 (29%)
# of Products	282	282	282	271	240

Peer Group / Universe Analysis (Annual)

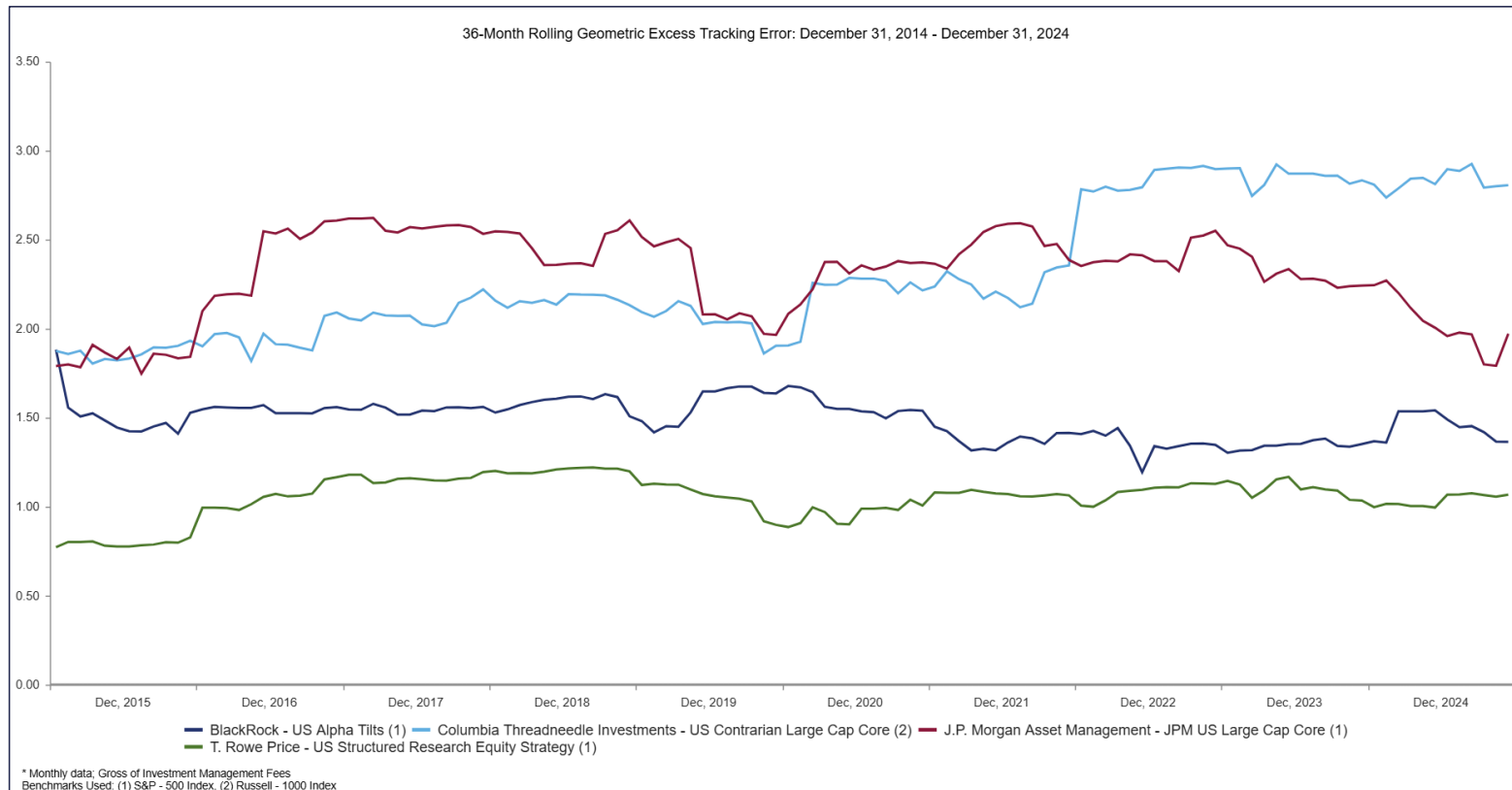


	CALENDAR YEAR 2018	CALENDAR YEAR 2019	CALENDAR YEAR 2020	CALENDAR YEAR 2021	CALENDAR YEAR 2022	CALENDAR YEAR 2023	CALENDAR YEAR 2024
● BlackRock - US Alpha Tilts	-4.51 (50%)	30.12 (73%)	19.33 (46%)	30.12 (22%)	-18.73 (65%)	26.40 (29%)	27.16 (8%)
● Columbia Threadneedle Investments - US Contrarian Large Cap Core	-8.21 (87%)	33.83 (22%)	23.14 (20%)	25.09 (76%)	-17.96 (50%)	33.03 (4%)	24.22 (37%)
● J.P. Morgan Asset Management - JPM US Large Cap Core	-5.35 (69%)	32.87 (29%)	27.40 (6%)	29.20 (30%)	-18.50 (62%)	27.94 (15%)	24.74 (29%)
● T. Rowe Price - US Structured Research Equity Strategy	-3.93 (35%)	32.86 (29%)	20.74 (36%)	28.49 (42%)	-18.37 (61%)	30.34 (8%)	26.97 (9%)
● S&P - 500 Index	-4.38 (46%)	31.49 (50%)	18.40 (55%)	28.71 (37%)	-18.11 (56%)	26.29 (30%)	25.02 (24%)
# of Products	262	270	275	284	286	286	282

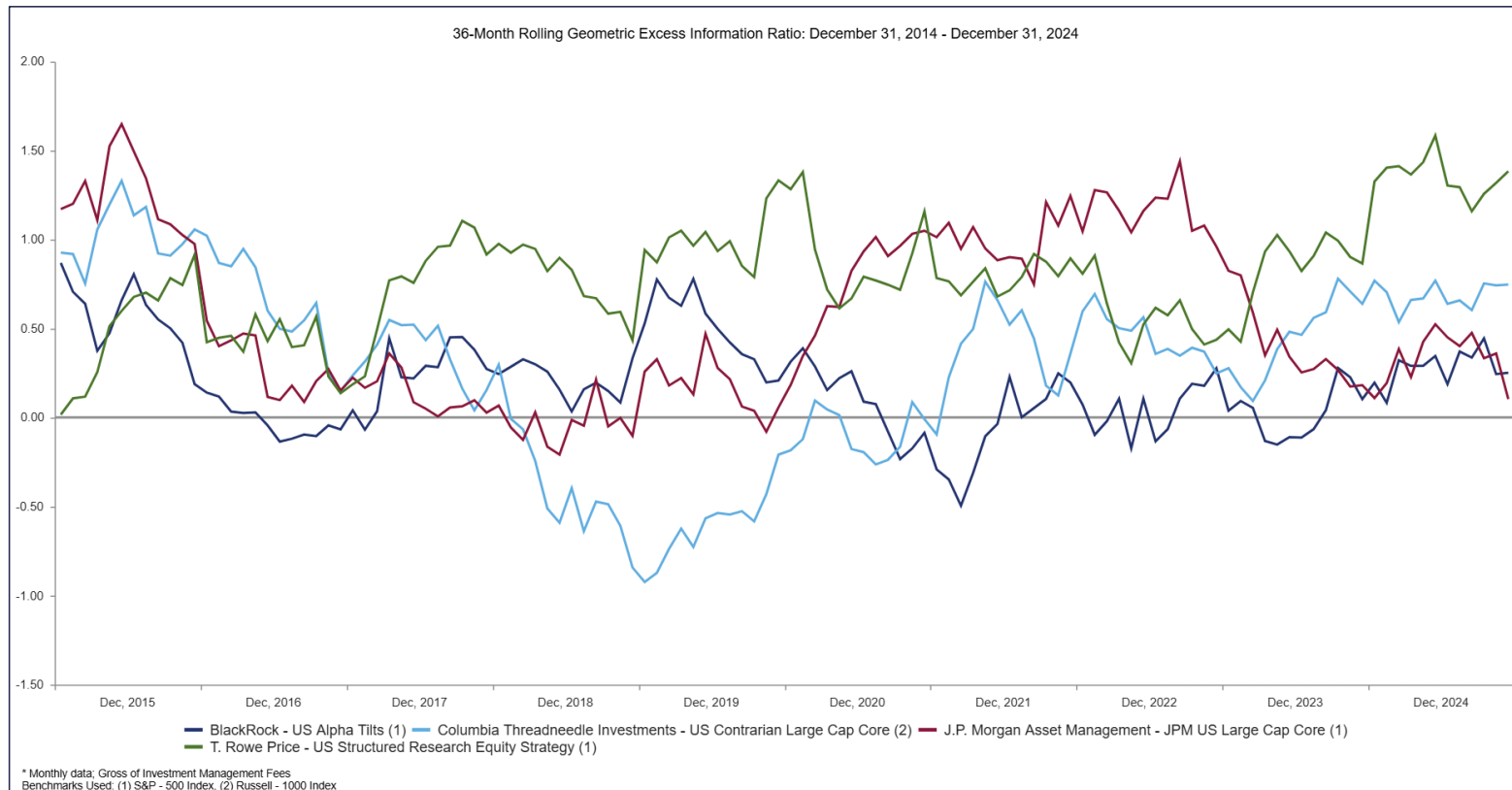
Rolling Excess Return



Rolling Tracking Error



Rolling Information Ratio



Appendix I: Form ADV

Form ADV

Wilshire reviewed the SEC Form ADV Part I and IIA (as posted on the SEC investment advisor search website at <http://www.adviserinfo.sec.gov>) of each investment manager in the table below only to determine whether the manager had made any disclosures in the listed categories. If the manager disclosed information in a category, it is the client's responsibility to review and assess the provided information. The information was collected as of the date(s) indicated and may change. Wilshire assumes no responsibility for the accuracy of the information provided by a manager.

Investment Manager	Review Date	ADV Part I		ADV Part IIA		
		Item 11: Disclosure Information		Item 9: Disciplinary Information	Item 19 (D): Requirements for State-Registered Advisors	
		Form ADV Part I Date	Disclosure (Yes or No)	Disclosure (Yes or No)	Form ADV Part IIA Date	Disclosure (Yes or No)
BlackRock	1/22/2025	1/2/2025	Yes	No	1/2/2025	--
Columbia Threadneedle Investments	1/22/2025	11/18/2024	No	Yes	3/29/2024	--
JP Morgan Asset Management	1/22/2025	3/14/2024	No	No	3/4/2024	No
T. Rowe Price	1/22/2025	10/24/2024	No	No	3/28/2024	--

This material is intended for informational purposes only and should not be construed as legal, investment, or other professional advice. The information is as of the date(s) indicated, and are subject to change without notice. If disclosures were noted, you should consult with your legal counsel to make an assessment on the materiality.

Appendix II: Full Manager Research Evaluations

Wilshire

Manager Research

BlackRock

US Alpha Tilts

Wilshire Manager Research Team

August 22, 2024

Rating Decile	Weight
2nd	100%

Summary

The BlackRock Systematic Active Equity (SAE) group, which was formerly known as Barclays Global Investors (BGI) Active Equity, offers a quantitatively engineered US Alpha Tilts portfolio that seeks to outperform the S&P 500 Index. The strategy is managed by a seasoned team of investment professionals that is under the co-Heads of Systematic Active Equity, Raffaele Savi and Jeff Shen. The process incorporates fundamental rationale and is quantitatively driven to produce a diversified portfolio of roughly 100-300 securities. Some of these fundamental insights include Relative Valuation, Earnings Quality, Sentiment, and Macro Themes. The process is research intensive as the team endeavors to maintain a competitive profile by constantly exploring new factors to incorporate. The intent of the strategy is to outperform the benchmark by roughly 1-2% with a tracking error level around 2%.

	Rating Decile	Weight
I. Organization	3rd	20%
Firm	4th	50%
Team	2nd	50%

BlackRock, founded in 1988, is known for combining sophisticated analytical tools with a systematic process to manage fixed income, equity, and alternative strategies. Through multiple mergers and acquisitions over the past 30+ years, BlackRock has grown to the world's largest asset manager with AUM of approximately \$10.1T as of the end of 4Q23.

BlackRock was founded in 1988 with AUM of \$1B. In the 1990's, BlackRock became fixed-income investment manager for PNC Financial Services. BlackRock went public (NYSE: BLK) in 1999 with PNC as majority shareholder. In the 2000's, BlackRock launched BlackRock Solutions, acquired State Street Research and Management, SSR Realty and also acquired fund of funds business from Quellos Group, LLC. In 2008, BlackRock launched Financial Markets Advisory business as part of BlackRock Solutions. In 2009, BlackRock hired 29 investment professionals from R3 Capital Partners and purchased BGI. In May 2020, PNC announced that it would be divesting its 22.4% stake in BlackRock through a registered offering with BlackRock repurchasing \$1.1B in shares.

The SAE platform is co-headed by Raffaele Savi and Jeff Shen who are responsible for oversight of the investment team responsible for constructing the various SAE-related portfolios. The US Alpha Tilts fund is managed by Raffaele Savi who works with Travis Cooke, Managing Director, and Richard Mathieson, Managing Director. Mr. Mathieson also leads management for the Advantage Small Cap Core, which is the mutual fund vehicle for the strategy. The portfolio managers are supported by the broader team that boasts numerous regional portfolio managers, researchers, and analysts. Important to note, the platform is very team-oriented and applies research collaboratively to manage many quantitative mandates across US and international products. However, this team has experienced some turnover underneath the leadership ranks, which has caused some concern in the past. Despite this, we believe the team is deep enough to withstand occasional changes in personnel. This depth, when coupled with the fairly static nature of the quantitative engine on which they operate, results in a high rating of the team relative to peers.

Wilshire

Manager Research

BlackRock

US Alpha Tilts

Wilshire Manager Research Team

August 22, 2024

	Rating Decile	Weight
II. Information	3rd	20%

Given the quantitative investment process, information gathering is focused on identifying new ideas or insights that help capture abnormal returns. These ideas can be sourced from data vendors, academic research, performance attribution, or an analyst's own revelation. At the start of each year, all PMs are invited to a research offsite where the research agenda for the year is finalized and new or current projects are discussed. When an analysts develops an idea into a hypothesis, it must pass on four categories: "sensible" (must be grounded in solid economic theory), "predictive" (must be able to forecast returns), "consistent" (is it consistent across universes), and "additive" (is it already reflected in the model). Official documentation on new research projects is disseminated across SAE and a formal meeting is held that is open to all SAE team members. There is one dedicated researcher who is formally required to review the research and respond to the lead researcher with any suggestions for improvement. A project can take anywhere between 1 – 12 months to complete depending on its complexity. The team oversees data from roughly 400 third-party vendors and proprietary sources. SAE has dedicated forensic accountants and equity analysts who follow-up on outlier issues and make necessary adjustments to GAAP-reported items. The SAE group has evolved its research process to focus more on new alpha sources in an attempt to be more forward-thinking than its competitors with respect to the power of existing signals (i.e. - analyst revisions, earnings quality, etc.) and future trends (i.e. - themes and baskets). The quantitative research effort is well-resourced and constantly endeavors to generate insight from various projects dedicated to alpha signal improvement, resulting in an above-average rating.

	Rating Decile	Weight
III. Forecasting	1st	20%

The stock selection model consists of three main components: company fundamentals, sentiment, and macro themes. The company fundamentals component ensures the team is buying stocks that are trading cheaply relative to the stock's intrinsic value. The sentiment component measures a stock's trends and the behavior of other market participants. Macro themes measures a stock's exposure to certain factors like the business cycle, currency rates, or monetary policy. On a daily basis, stocks receive an alpha score that reflects the insights in each category. The team constructs and rebalances the portfolio using a proprietary optimizer, which yields a recommended trade list that will move the portfolio to the new optimal portfolio with the goal of maximizing alpha, subject to tracking error and transaction costs. On rare occasions, the team will override the model if there is something material that is uncaptured by the model, such as a corporate action or news headline.

The process is designed to outperform in any environment; however, the greatest headwinds occur when markets ignore fundamentals and positive returns are concentrated in a limited number of names. Performance has outperformed over trailing periods with tracking error falling around the 2% target. The forecasting process has demonstrated an ability to add alpha over short and long periods of time, resulting in a high rating.

Wilshire

Manager Research

BlackRock

US Alpha Tilts

Wilshire Manager Research Team

August 22, 2024

	Rating Decile	Weight
IV. Portfolio Construction	1st	20%

The benchmark for the strategy is the S&P 500 Index and the strategy targets an active return in the 1 – 2% range. The strategy imposes tight benchmark-relative parameters for stocks (+/- 2%), industry (+/- 4%), and sector (+/- 4%) and typically holds between 100 – 300 stocks. Individual position sizes are determined by the proprietary optimizer, which reflects the alpha forecast from the model. PMs can override the optimizer when necessary.

For this portfolio, tracking error is perhaps the most important measurement for risk. BlackRock's Risk and Quantitative Analysis Group (RQA) oversees the risk management process and partners with SAE to monitor the portfolio's risk metrics. The team uses BARRA risk models as the basis for risk management, supplemented by risk controls developed internally. In addition, the team examines the portfolio against the market to ensure the relevance of the team's investment ideas remain intact.

	Rating Decile	Weight
V. Implementation	1st	10%

Trading is led by Dan Veiner and Jatin Vara. The Global Equity Trading Group comprises roughly 220 professionals as of 2Q24. The Global Equity Trading Group resides under the Global Trading Group umbrella, which consists of approximately 50 traders and executes trades on behalf of all portfolio management teams.

The firm uses the proprietary platform called Aladdin which integrates and instantly connects all the functions needed to manage assets: from portfolio management and trading to compliance, operations, and risk oversight. Aladdin provides pre-trade compliance, order management, accessing liquidity pools, and trade execution. The trading operation contains a highly automated compliance process to help ensure that portfolio are managed in accordance with their stated guidelines and applicable regulatory requirements. Key sources of liquidity include: single dealer platforms, an extensive network of broker dealers, including principal liquidity, trading venues such as dark pools, ECNs, MTFs, etc., direct market access, and internal crossing. The firm's Market Structure and Electronic Trading team is responsible for the firm's proprietary transaction cost model. This function is critical as it provides trade cost measurement (quantifies full cost of trading), forecast (estimates of trading using proprietary models), and management (best execution).

Turnover for the US Alpha Tilts strategy is expected to be between 100 – 200% annually and capacity is there is officially no capacity constraint for the strategy. BlackRock maintains a robust trading desk with strong infrastructure, but capacity will need to be monitored as there are no formal constraints. Implementation receives an above average rating for these reasons.

Wilshire

Manager Research

Wilshire Manager Research Team

August 22, 2024

BlackRock

US Alpha Tilts

	Rating Decile	Weight
VI. Attribution	1st	10%

Performance attribution is performed by the SAE team using internally developed analytical tools. The team uses a combination of third-party systems such as BARRA and proprietary programs like Aladdin. The team not only employs traditional performance attribution tools and can better articulate security-level impact than most other quant efforts, but has also established a practice to constantly revisit prior factors, procedures, and research findings for testing. This constant search for alpha is done because the team realizes it cannot continue to succeed on past R&D efforts, and therefore, must continually evolve and reinvest its research effort to keep its performance competitive.

	Rating									
Decile	1	2	3	4	5	6	7	8	9	10
Corresponding Grade	A		B		C		D		F	

Wilshire

Manager Research

BlackRock

US Alpha Tilts

Wilshire Manager Research Team

August 22, 2024

Firm Information

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Wilshire

Wilshire Manager Research Team

July 24, 2024

Manager Research

Columbia Threadneedle Investments

US Contrarian Large Cap Core

Rating Decile	Weight
1st	100%

Summary

The Columbia Contrarian Large Cap Core strategy is a moderately concentrated, active strategy that seeks to produce 150 to 350 basis points of excess returns on an annual basis versus the Russell 1000 Index. The strategy is led by portfolio manager Guy Pope, who leverages the insights of a research platform consisting of industry-specific analysts. Mr. Pope has served as a PM for the firm since 1996 and for this particular strategy since July 2004, gradually becoming the sole PM as his peers resigned in 2005 and 2006. For the management of the strategy, the team leverages the research of the fundamental equity team, which consists of over 20 analysts/associates that demonstrate deep industry knowledge. They are also supported by the six-member quantitative research team.

The philosophy seeks out-of-favor companies and hence is contrarian in nature. Overall, the process has impressive depth in research, while maintaining flexibility with respect to exact valuation methodology at the stock level. The team has demonstrated a strong and consistent ability to add value through security selections while not taking excessive risk to do so. The process is flexible and may emphasize value or growth stocks at any given time. The resulting portfolio is risk-minded, but active.

The strategy is listed under the tickers CCCIX, COFYX, and sub advisory tickers VLCCX and ISFIX.

Rating Decile	Weight
1st	20%
4th	50%
1st	50%

I. Organization

Firm

Team

Columbia Threadneedle Investments North America (Columbia) is a wholly owned subsidiary of Ameriprise (NYSE: AMP), who purchased the firm from Bank of America in 2Q10 and combined them with their existing asset management business, RiverSource. Ted Truscott, the CIO of RiverSource, assumed leadership of the combined organization as CEO. Mike Jones, formerly president of Columbia Management, served as President of the U.S. asset management business immediately after the transaction; however, he left the firm in 1Q12 to join Pyramid. Colin Moore, previously Columbia's Head of Active US Equity, became the CIO. As a result of the transaction, Columbia's organization was left largely intact, while RiverSource experienced significant turnover, including their head of fixed income. Overall, Columbia's transition from a bank owned parent company to an asset management organization is viewed as a positive development. On March 30, 2015, affiliated companies Columbia Management and Threadneedle Investments began doing business under the global brand Columbia Threadneedle Investments. The new brand represents the combined capabilities and resources of both organizations and its offshore asset management affiliates, offering clients access to both firms. However, there is no change to the corporate structure or regulated entities as a result of the new brand. The firm is co-headquartered in Boston, MA for their North American business and London, UK for their EMEA and Asia Pacific businesses, managing \$587B as of 3Q23 staffed with 650+ investment professionals.

Both research analyst and portfolio manager compensation are comprised of a base salary and an annual incentive award. The incentive bonus award can either be all cash, given that the amount is under a pre-specified threshold, or can be a combination of cash, restricted stock/stock options, and deferred compensation. These incentive components are largely performance based on the various accounts.

Guy Pope is the lead PM for the Columbia Contrarian Large Cap Core strategy. Mr. Pope has served as a PM for the firm since 1996 and for this particular strategy since July 2004, gradually becoming the sole PM as his peers resigned in 2005 and 2006. He is supported by Generalist PMs Harvey Liu, Michael Welter and Nicholas Smith. Mr. Liu joined the product in 2010; while, Messrs. Welter and Smith joined the team in 2012. For the management of the strategy, the Contrarian Large Cap Core team leverages the research of the fundamental equity analyst team of 20+ analysts/associates who possess deep industry knowledge. They are also supported by the quantitative research team led by Brian Condon.

The Contrarian Large Cap Core strategy was first managed by the predecessor firm Crabbe Huson in Portland, OR. In 2003, Crabbe Huson was combined under Columbia Management. Overall, Wilshire has a slightly favorable view of the Columbia organization given the quality and the stability of the investment professionals along with the senior management. Wilshire is encouraged by the continual commitment to resources and personnel for the strategy.

Wilshire

Wilshire Manager Research Team

July 24, 2024

Manager Research

Columbia Threadneedle Investments

US Contrarian Large Cap Core

Rating Decile	Weight
1st	20%

II. Information

Fundamental research is done by the strategy's portfolio management team, in collaboration with the firm's 20+ member Fundamental Equity Research team. Effective April 1, 2017, Tom West, Head of Global Equity Research, left the firm and Kirk Moore, former Head of Global Fixed Income research, was appointed Global Head of Research, overseeing both equity and fixed income research efforts.

Approximately 85% of research for the Contrarian LCC strategy is generated internally, with the remaining 15% coming from sell-side brokers. The fundamental analysts conduct management interviews and frequent company visits, in addition to attending conference. The analysts provide ratings for approximately 75% of the domestic indices, using a variety of data and analytical tools including, BARRA, Holt, FactSet, Bloomberg, Zephyr, and STARMINE. Daily discussions take place between the strategy PMs and the research teams via conference call.

The Contrarian Large Cap Core team also leverages the resources of the six-member quantitative research team led by Brian Condon. The quant team primarily conducts performance attribution and risk analysis, but also uses multi-factor models to rate most domestic stocks. The models use a combination of value, quality and momentum factors. Overall, the information gathering process ranks above average due to the impressive resources along with the depth and breadth of industry knowledge of the investment professionals.

Rating Decile	Weight
1st	20%

III. Forecasting

The Contrarian Large Cap Core strategy begins with an evaluation of the investable universe, which consists of securities within the Russell 1000 and ADRs with greater than \$2 billion market cap at the time of purchase. The team uses a proprietary quantitative screening tool to narrow down potential research ideas, attempting to identify out-of-favor securities. Attractive companies are generally in the bottom 1/3 of their 52 week price range and demonstrate attractive risk/reward potential over an 18-24 month time frame. Though there are a variety of names that pass through the initial screen, the next step of the investment process, valuation/fundamental analysis, reduces the universe to a select few.

The Fundamental Research Group tends to focus on discounted cash flow combined with other metrics such as P/E, P/FCF, P/B, Enterprise Value to Sales, and Enterprise Value to EBITDA. The valuation approach depends on the industry and security in question and is reviewed from both an absolute and relative basis. The team evaluates the security, looking for a potential thesis for future growth and tends to rely on normalized earnings power. Before a stock is included in the portfolio, an upside price target and downside target are established and the team runs both a bull and bear case scenario in an attempt to analyze the security from various angles and scenarios. While Mr. Pope pays close attention to relative valuations, he generally prefers companies with strong enough earnings growth to withstand shorter-term periods of turmoil or disruption.

Overall, the process has impressive depth in research, while maintaining flexibility with respect to exact valuation methodology at the stock level. The team has demonstrated a strong and consistent ability to add value through security selections while not taking excessive risk to do so. Opportunistic stock picking in periods of heightened volatility has led to solid performance across a variety of market environments; however, the strategy is expected to perform better in up markets.

Rating Decile	Weight
1st	20%

IV. Portfolio Construction

The 60-80 name portfolio seeks to achieve an excess return of 150-350 bps annually while maintaining a max tracking error of 700 bps (currently ~300 bps) versus the Russell 1000 benchmark. The strategy may invest up to 20% of the portfolio in non-US companies, ADRs, or non-dollar denominated securities not in the benchmark; however, the non-US exposure has typically been in the 7-10% range. Individual securities are limited to a 3.5% active weight. Sector and/or industry weights are a byproduct of the bottom-up process, though each sector is limited to +/- 9% of the benchmark weighting. While sector biases will vary, the team is typically underweight in the Utilities and REIT sectors and relative weights are typically kept within the +/- 6% range.

The team monitors factor exposures such as volatility, size, momentum, beta, and leverage using a proprietary portfolio construction tool called Equity Portfolio Analysis developed by the Quantitative Research Team. The firm's Investment Risk Management Department monitors the risk profile of the strategy on an ongoing basis. Tools utilized include Monte Carlo simulations of VaR, factor analysis, and stress testing/scenario analysis. The portfolio is also subject to the firm's semiannual 5P review, which includes an assessment on the team's process and positioning. With respect to style, the strategy has been slightly more opportunistic with small shifts to growth over time. Overall, the portfolio construction process is active and reasonably concentrated, but remains adequately risk controlled.

Wilshire

Wilshire Manager Research Team

July 24, 2024

Manager Research

Columbia Threadneedle Investments

US Contrarian Large Cap Core

Rating Decile	Weight
3rd	10%

V. Implementation

The Contrarian LCC strategy has experienced outflows in recent years, peaking at ~\$28B in 4Q17 and falling to about \$22B as of 2Q23. Estimated capacity for the strategy is approximately \$30 billion. Columbia has an active, centralized equity block-trading desk that trades issues for this strategy, led by Head of Trading Stephen Harasimowicz. The Centralized Global Equity Trading team consists of 19 professionals based in both Portland, OR and Boston.

The Equity platform uses the LongView Trading System ("LVTS") as both an order entry and guideline-monitoring tool with both pre- and post-trade compliance capabilities. Columbia has also developed an in-house software system to simulate the pre-trade impact on total portfolio risk. Trading costs are measured and reviewed using ITG. Turnover for the strategy has historically averaged 60-80%.

Rating Decile	Weight
2nd	10%

VI. Attribution

The team uses comprehensive reporting systems and metrics including BARRA, Holt, Wilshire, FactSet, Bloomberg and Zephyr style analysis. In addition, FactSet is used to evaluate portfolio performance versus the benchmark. They rely on FactSet for attribution analysis. FactSet attribution analysis applies the Brinson-Fachler Model, a holdings-based model which uses daily returns. In addition, the portfolio is also subject to the firm's semiannual 5P review, which includes an assessment of the product's positioning, philosophy, people, process, and performance. Findings from this review are presented to the firm's Investment Oversight Committee, and recommendations are made as needed to ensure the team is adhering to the started objective. The team utilizes attribution to a greater degree than simple client reporting and attempt to use the results for future improvements on the investment process.

Decile	Rating									
	1	2	3	4	5	6	7	8	9	10
Corresponding Grade	A		B		C		D		F	



July 24, 2024

Manager Research

Columbia Threadneedle Investments

US Contrarian Large Cap Core

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On January 8, 2021, Wilshire was purchased (the "Transaction") by Monica Holdco (US) Inc. ("Buyer"). The Buyer is indirectly controlled by CC Monica Holdings, LLC (which is affiliated with and Motive Monica LLC. As part of the Transaction, Ares Management Corporation became a lender to the Buyer.

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Wilshire

Manager Research

Wilshire Manager Research Team

February 2, 2024

J.P. Morgan Asset Management

JPM US Large Cap Core

Rating Decile	Weight
1st	100%

Summary

JPMorgan Large Cap Core is a highly competitive large cap product that is designed to outperform the S&P 500 Index by approximately 2% over a full market cycle gross of fees with an expected tracking error of 2-4%. Backing the portfolio management team is a relatively stable and very deep team of sector specific research analysts. The process is robust and forward looking, calculating an internal rate of return through an expected returns framework utilizing proprietary estimates. The investment process is also highly objective using a ranking system. Overall, Wilshire finds the product suitable for standalone large cap core exposure. Scott Davis, who has been a portfolio manager on the strategy since 2014, took over lead portfolio management responsibilities following Tom Luddy's retirement in January 2018.

Wilshire

Manager Research

Wilshire Manager Research Team

February 2, 2024

J.P. Morgan Asset Management

JPM US Large Cap Core

	Rating Decile	Weight
I. Organization	2nd	20%
Firm	4th	50%
Team	1st	50%

JP Morgan Asset Management, Inc. (JPMAM) is a wholly owned subsidiary of JPMorgan Chase & Co, a publicly traded and leading global financial services firm with an extensive array of capabilities. The asset management division is headed by George Gatch and is comprised of over 7000 employees and more than 750 investment professionals worldwide. The firm collectively manages ~\$3 trillion in assets (as of 4Q23), which in turn translates into a minor share of the parent company's overall revenue. The asset management division is managed autonomously with distinct separation from the parent organization regarding compensation, product development, and management. The firm's compensation structure is attractive with an annual fixed salary and a variable performance bonus consisting of cash incentives, restricted stock, and in most cases, mandatory deferred comp. For variable bonuses, both relative- and absolute- performance measures (75%) are evaluated with an emphasis placed on three- and five-year statistics, followed by one-year results. The 25% balance is qualitative in nature.

The asset management division has a legacy of acquiring businesses, many of which faced integration issues and resulted in significant senior personnel departures—most notably within the fixed income and international equity divisions. Integrations have also faced challenges in merging technological infrastructures, investment team cultures, and buy-in to the firm's operating structure. In addition, the sheer nature of being a publicly owned institution has moderately constrained the operating environment of the firm, i.e., communication delays/miscues, unanticipated fund closures, abrupt personnel departures/terminations, excessive capacity constraints, etc. While Wilshire has historically held JPMAM's U.S. Equity division in high regards and the firm has a history of closing strategies (typically too late), asset gathering (~\$550B in active domestic equity AUM as of 11/30/23) has become an issue across the division and will likely continue to negatively impact relative performance results going forward. Given these issues, Wilshire has tempered JPMAMs qualitative firm rating, despite maintaining high conviction across a variety of the firm's investment teams/strategies globally.

The Large Cap Core strategy is managed by lead PM Scott Davis - who is supported by a large pool of experienced research analysts with specific sector responsibilities. Mr. Davis took over lead portfolio management responsibilities following the retirement of Tom Luddy in January 2018. Mr. Luddy was with J.P. Morgan for over 40 years and was the lead PM on the Large Cap Core and Large Cap Core 130/30 products. Mr. Davis has been a PM on the US Equity fund since 2014 and has over 25 years of experience. Prior to transitioning to portfolio management, Mr. Davis was one of the firm's research analysts, and he places a high priority on effective communication with the analyst team. In 4Q21 Shilpee Raina was added to the team as a portfolio manager. She has been with the firm for nearly 20 years as a research analyst. Susan Bao, who had been a PM on the 130/30 LCC product since its inception, was removed as PM in 4Q20 in order to focus on the firm's short-enabled strategies. The research analysts on the team possess significant industry experience and solid academic credentials.

The entire team is located in JPMorgan's New York office, allowing the team to discuss investment ideas in a formal and informal fashion on a daily basis. The role of the research analyst at the firm is regarded as a career path as opposed to being a steppingstone to becoming a PM, and the analysts have an average of 20 years of experience. Turnover has been relatively low for a team of this size, with most departures in the form of internal transfers rather than leaving the firm altogether.

Wilshire

Manager Research

Wilshire Manager Research Team

February 2, 2024

J.P. Morgan Asset Management

JPM US Large Cap Core

	Rating Decile	Weight
II. Information	1st	20%

The team employs a robust information gathering process through its commitment to fundamental in-house research. The analysts, all sector specialists, devote 100% of their time to making bottom-up earnings and earnings growth projections, which become the chief inputs for the valuation model. To develop the projections, the analysts spend the majority of their time conducting independent research by meeting with company management and analyzing SEC filings. Due to the firm's large presence in the equity markets, the analysts have a good level of access to company management, aiding in the creation of a sustainable information advantage. In addition, the analysts have the ability to leverage the research conducted by the firm's global network of analysts. Since the companies that constitute the large cap universe have a strong global presence, the analyst's ability to gain independent insight on global markets is a key competitive advantage. The analysts supplement their original research with information available from industry contacts and Wall Street firms; however, the external research is used primarily to compare their independent research with consensus information. Overall, the team adds significant value to the process through its in-depth information gathering process.

	Rating Decile	Weight
III. Forecasting	1st	20%

The forecasting process begins with approximately 500 large and mid-cap domestic companies, where each stock in the universe is categorized into one of 18 industry sectors. The strategy is very much a fundamental bottom-up driven product. Following the screen, the team conducts fundamental research on the narrowed universe of attractive companies. The team seeks favorable supply/demand imbalances, competitive dynamics, attractive business models, a strong management team with a proven track record, and attractive balance sheet metrics. These metrics are generally evaluated using a 3–5-year timeframe. Analysts not only focus on developing mid- to long-term earnings and cash flows, but also, as industry experts, they are focused on structural changes in the industries they cover, as well as the business cycle. This research translates into a proprietary valuation framework. To avoid valuing companies on peak or trough earnings, the analysts use intermediate-term normalized estimates that reflect each company's sustainable level of earnings. Stocks are then ranked into quintiles based on the analyst's determination of the stock's expected return and hence relative attractiveness within each of the 18 sectors. The rest of the process is fairly transparent - overweighting the highest ranked stocks and underweighting the lowest ranked stocks. According to Wilshire attribution analysis, the team has been successful in adding value from stock selection over the life of the product. Additionally, the strategy's long-term track record (absolute and risk-adjusted) is highly competitive within the large cap core universe from both a cumulative and rolling period standpoint. Forecasting rates highly.

Wilshire

Manager Research

Wilshire Manager Research Team

February 2, 2024

J.P. Morgan Asset Management

JPM US Large Cap Core

	Rating Decile	Weight
IV. Portfolio Construction	1st	20%

Portfolio positioning is ultimately driven by the PM, who overlays his conviction on the team's research. The portfolio is actively constructed with 50 to 80 securities with a typical minimum of \$1 billion in market cap. Although the relative rankings by the analysts drive the majority (90%) of the decisions, the PM incorporate macro views into the decision-making process (10%) to determine which stocks are attractive or unattractive given the current market sentiment. The team limits security and sector exposures to within 4% of the S&P 500 Index weight, respectively. As a result of the portfolio construction process, the tracking error for the portfolio is expected to be 2-4%. According to a Compass rolling consistency analysis, the ex-post tracking error has typically ranged from 2-5%. To analyze factor exposures such as risk indices and industries, the team employs BARRA as well as a proprietary multi-factor model. The team looks at these exposures on a daily basis. Overall, the portfolio construction process is solid and adds value.

	Rating Decile	Weight
V. Implementation	1st	10%

The firm has its own in-house trading team of U.S. equity specialists that are responsible for executing all domestic trades. Trading is viewed as a key component of the investment process along with best execution. For best execution, the team uses a broad range of trading strategies that include electronic trading, electronic crossing networks, portfolio trading and traditional block trading. Over two-thirds of the overall trading volume is conducted through state-of-the-art trading techniques such as crossing networks which significantly reduces the average commission costs while limiting market impact. For examining best execution, the team utilizes two external trade cost analysis vendors, Plexus and Abel Noser. The annual turnover of the strategy is roughly 80%.

	Rating Decile	Weight
VI. Attribution	2nd	10%

The team uses BARRA, Factset and Wilshire's third-party analytics tool for its performance attribution analysis. Using these software programs, the team is able to break down returns at the stock and sector level as well as into market timing, industry and asset allocation decisions, and factor exposures. The team expects to realize returns largely from stock selection and its attribution confirms this tendency. Overall, the team's performance attribution is highly ranked due to the depth and breadth of the attribution efforts.

	Rating									
Decile	1	2	3	4	5	6	7	8	9	10
Corresponding Grade	A		B		C		D		F	

Wilshire

Manager Research

Wilshire Manager Research Team

February 2, 2024

J.P. Morgan Asset Management

JPM US Large Cap Core

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Wilshire

Manager Research

T. Rowe Price

US Structured Research Equity Strategy

Wilshire Manager Research Team

January 31, 2024

Rating Decile	Weight
2nd	100%

Summary

The T. Rowe Price U.S. Structured Research Strategy represents a "best of breed" option in the fundamental research based enhanced index universe. The firm's Capital Opportunity Fund mirrors this strategy but offers a longer term track record for comparison purposes. The strategy is a low tracking error (<175 bps) product that relies upon a large number of fundamental research analysts to individually manage sleeves of the portfolio. It is somewhat unique in that it has low active risk, a large number of holdings, yet is driven by qualitative research. This strategy is attractive, as it provides the disciplined portfolio construction of quantitative products with the rich insights of fundamental research.

Rating Decile	Weight
1st	20%
1st	50%
1st	50%

I. Organization

Firm

Team

Founded in 1937, T. Rowe Price represents one of the largest multi-product investment management firms with a significant presence in both the institutional and retail mutual fund markets. The firm has a diverse product lineup, which includes equity, fixed income, and asset allocation capabilities. T. Rowe Price has built a global research platform with investment professionals located in various offices around the world. Approximately 80% of the firm's employees are shareholders in the company and combined with vested but unexercised options own approximately 15-20% of the firm's publicly traded equity (TROW). The firm has established a competitive franchise in both investment management and distribution due to its conservative culture and high emphasis on fiduciary standards.

T. Rowe Price has developed a good reputation for recruiting and retaining talented investment professionals throughout the organization. In terms of compensation for investment professionals, the firm provides a modest base salary and a performance bonus that can be multiples of the base salary. The firm also offers stock options and restricted stock to certain investment and key senior professionals. Restricted stock and options vest over a five-year period. Bonuses are tied closely to performance for both portfolio managers and research analysts, with an emphasis on three- and five-year relative and risk-adjusted results.

During 2020, T. Rowe Price announced its intentions to create a new investment adviser, T. Rowe Price Investment Management (TRPIM), which was completed during 2022. TRPIM has its own investment platform and investment leadership, which is separate and distinct from existing investment adviser, T. Rowe Price Associates (TRPA). Six investment strategies moved to TRPIM which include U.S. Capital Appreciation, U.S. Mid-Cap Growth Equity, U.S. Small-Cap Core Equity, U.S. Small-Cap Value Equity, U.S. Smaller Companies Equity, and U.S. High Yield Bond. In total these six strategies represent approximately 10-15% of total T. Rowe Price AUM. TRPIM is a wholly owned subsidiary of T. Rowe Price Associates.

The Structured Research Strategy portfolio is a low tracking error, active risk strategy driven by the firm's equity research analyst group. The strategy is directed by a portfolio oversight committee, comprised of five investment professionals: Ann Holcomb, Jason Polun, Jay Nogueira, Alexa Gagliardi, and Tamzin Manning. Ms. Gagliardi is new to the team as associate portfolio manager is responsible for managing the day-to-day management of cash flows while Ms. Manning is the team's new client portfolio manager. The oversight committee does not make stock selections; rather, the strategy leverages the insights of approximately 25 analysts, each of whom is responsible for making the final buy and sell decisions for a sleeve of the portfolio. Five of the analysts are currently responsible for control of ~45% of the portfolio. The oversight committee is responsible for ensuring adherence to portfolio constraints and risk controls, in addition to managing inter-analyst communication and activity. While analyst turnover has historically been modest at around 10% per annum, it appears to have increased modestly. Overall, the analyst staff is very experienced and many of the analysts have prior industry backgrounds in the areas they cover.

Wilshire

Manager Research

T. Rowe Price

US Structured Research Equity Strategy

Wilshire Manager Research Team

January 31, 2024

	Rating Decile	Weight
II. Information	1st	20%

T. Rowe's approach to fundamental research encompasses the same degree of Porter's Five Force analysis that other large firms with centralized research groups engage in. The firm's sector-specific analysts conduct over 4,000 on-site visits a year and complement these visits with telephone conversations, participation in conference calls, and attending industry and investment conferences. In addition, the firm hosts over a 1,000 company meetings in their offices annually. The analysts primarily meet with senior- and mid-level managers but will also meet with competitors and various stakeholders up and down the supply chain to truly assess a company's position in the marketplace. During these visits, the analysts focus on gathering information about the viability and sustainability of a company's business model; the quality of the management team and alignment of interests with shareholders; and the company's financial position as well as the drivers and obstacles to continued financial success. Each of the firm's analysts are responsible for creating 3-5 year forecasts for 30-50 companies and for issuing a 1-5 rating on each company falling under their coverage.

Research analysts in the firm can be career analysts and most of them have extensive prior industry experience. We continue to rank T. Rowe highly in information gathering due to the depth and the breath of the firm's research resources.

	Rating Decile	Weight
III. Forecasting	2nd	20%

The Structured Research Strategy uses a variety of valuation models to create a security outlook and forecast. The techniques utilized by the analysts will vary depending on what is relevant within a given industry/sector. The valuation models include Price-to-Earnings, Price-to-Book, Price-to-Sales, Price-to-Cash Flow, Dividend Yield and Price-to-Earnings Growth. When creating the forecast, the analyst gives strong consideration to the viability/sustainability of the business model, the quality and shareholder orientation of management and a complete understanding of the company's financial statements. Each forecast is expressed by an analyst rating of 1 (Strong Buy) to 5 (Strong Sell), using a 12-month forecast horizon.

While the analysts cover and recommend stocks across the value to growth spectrum, one common theme is that the firm's research culture favors companies with attributes that lead to long-term outperformance: high quality management teams, high or increasing return on capital, attractive valuation, etc. In keeping with the long-term orientation employed across the firm, there is little focus on the highest growth companies that are priced for perfection or major turnaround stories that represent a call option on the survivability of the firm.

The forecasting effort is necessarily robust given the broad style composition of a core benchmark. A premium is placed on the experience and knowledge of each individual analyst to be able to appropriately value the wide universe of stocks, as opposed to relying on the expertise of one portfolio manager. Our attribution analysis shows that stock selection has been favorable strong over the long-term.

Wilshire

Manager Research

Wilshire Manager Research Team

January 31, 2024

T. Rowe Price

US Structured Research Equity Strategy

	Rating Decile	Weight
IV. Portfolio Construction	2nd	20%

To construct the portfolio for the Structured Research Strategy, each analyst is provided a capital allocation which is proportional to the industry weight in the S&P 500 Index. From there, each analyst makes buy or sell decisions by overweighting highly rated securities and underweighting or excluding poorly rated securities. In addition, there are sector, industry, and position limits of +/- 150 bps, +/- 100 bps and +/- 100 bps, respectively. For stocks representing more than 3% of the index, the constraints are +/- 150 bps. Stocks not represented in the S&P 500 index can be purchased, but these non-benchmark names are limited to 50 bps, while a total aggregate limit of 10% placed on non-benchmark names.

The final portfolio typically holds 200-275 securities. The targeted active risk of the strategy is 125 – 175 basis points. The firm uses a Daily Risk Monitoring Report, which integrated several internal applications as well as the Barra Aegis model. This serves as another source of risk management, ensuring that the portfolio's aggregate characteristics are not overly exposed to any unintended risk factors. (Any portfolio risk exposure approaching a 0.2 standard deviation variance from the index exposure will be trimmed back by the oversight committee.)

As opposed to many other enhanced index strategies, this is a relatively simple portfolio construction effort. It does not ensure the optimal balance between the return opportunities described by the forecast and the risks described by the risk model. Thus, even though the risk management effort monitors such risk factors as style, size, and momentum, there is no process that integrates the risk management feedback into the stock selection effort. Compared to most large cap core managers, the portfolio construction is very strong, but compared to other enhanced index efforts, it lacks some robustness. Overall, the effort scores above average.

	Rating Decile	Weight
V. Implementation	4th	10%

T. Rowe Price has approximately 25 equity traders with an average of 15 years of trading experience. The firm utilizes the Macgregor Financial Trading Platform for their order management system and for pre-trade compliance. Once inputted into the system, the trade is placed with a broker via telephone or through one of the over 100 FIX connections on the Macgregor network. To minimize trading costs, T. Rowe searches out alternative pools of liquidity and adapts their style, approach, and venue where appropriate. The firm trades with more than 200 regional and national broker-dealers, including several ECNs and alternative sources of liquidity. The firm internally monitors execution costs and subscribes to ITG for third-party transaction cost analysis. The firm does manage a considerable amount of assets in the U.S. large cap space, but this strategy is highly diversified and annual turnover is fairly low.

Wilshire

Manager Research

Wilshire Manager Research Team

January 31, 2024

T. Rowe Price

US Structured Research Equity Strategy

	Rating Decile	Weight
VI. Attribution	3rd	10%

The strategy uses various third party and proprietary risk models to monitor performance and risk. In addition, each analyst is measured on their own predictive capabilities which are used to determine, in part, the compensation of each analyst. The use of risk models to monitor exposures is commendable in general. However, the portfolio construction process described above precludes the strategy from accruing the full potential benefit from these systems. It is not clear how the attribution process is used to help analysts improve their effort.

	Rating									
Decile	1	2	3	4	5	6	7	8	9	10
Corresponding Grade	A		B		C		D		F	

Wilshire

Manager Research

Wilshire Manager Research Team

January 31, 2024

T. Rowe Price

US Structured Research Equity Strategy

Firm Information

T. Rowe Price

Baltimore, MD

USA

CONTACT :

Andrew Gospodarek

Phone: 415-772-1105

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Manager evaluations are based on investment due diligence conducted by Wilshire and do not include operational due diligence. Information and opinions are as of the date indicated and are subject to change without notice. This material may include estimates, projections, assumptions and other "forward-looking statements." Forward-looking statements represent Wilshire's current beliefs and opinions in respect of potential future events. These statements are not guarantees of future performance and undue reliance should not be placed on them. Such forward-looking statements necessarily involve known and unknown risks and uncertainties, which may cause actual events, performance and financial results to differ materially from any projections. Wilshire undertakes no obligation to update or revise any of the information provided herein. Past performance is not indicative of future results.

Third party information contained herein has been obtained from sources believed to be reliable. Wilshire makes no representations or warranties as to the accuracy of such information, and accepts no responsibility or liability (including for indirect, consequential or incidental damages) for any error, omission or inaccuracy in such information and for results obtained from its use.

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Wilshire recognizes that conflicts of interest arise in the provision of its services. Specifically, there are conflicts of interest between Wilshire's obligation to provide objective advice to clients and Wilshire's business relationships (including being a competitor) with the investment managers and financial services providers we recommend to those clients. It is Wilshire's policy to make evaluations, recommendations and decisions based solely upon the best interests of clients and without regard to any benefit (economic or otherwise) that Wilshire receives or might receive. Wilshire is committed to ensuring that it does not consider an investment manager's or financial service provider's business relationship with Wilshire, or lack thereof, in performing evaluations for or making recommendations to its advisory clients. Wilshire has implemented policies and procedures that seek to mitigate conflicts of interest through appropriate oversight, transparency and controls. Wilshire's policy is to disclose material conflicts of interest to its clients and prospective clients. Additional information regarding conflicts of interest is available in Wilshire's ADV Part 2.

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In preparing the analysis in this report, Wilshire has used information and data provided to us by third parties believed to be reliable, including the investment managers and market index providers discussed herein. We have relied on such data and information as being complete and accurate. We have not independently verified and make no representations or warranties as to the accuracy or completeness of the data or information. Wilshire accepts no responsibility or liability (including for indirect, consequential or incidental damages) for any error, omission or inaccuracy in such information and for results obtained from its use. Information and opinions are as of the date indicated and are subject to change without notice. Wilshire assumes no duty to update this material.

Research viewpoints may be based on investment due diligence conducted by Wilshire and do not include any form of operational due diligence. This material is intended for informational purposes only and should not be construed as legal, accounting, tax, investment, or other professional advice.

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**Kentucky Retirement Systems
&
Kentucky Retirement Systems Insurance Trust Fund (collectively, "KRS")

Gating Issues for Investing

(version November 2019)**

Below are KRS's "gating items," with which the GP/investment manager needs to agree in order for KRS to make the proposed fund investment. Following confirmation that the GP/investment manager agrees with KRS on these gating issues, KRS will provide a comment memo and a full side letter.

We are disseminating the gating items list at the beginning of the process, so that internal counsel for the GP/ investment manager (and its law firm) can unambiguously understand that the side letter will need to be consistent with these gating items, and KRS will not accept the fund's "standard" provisions if they are in any way inconsistent with these gating items.

1. Disclsoure/Public Records Law. The GP/investment manager understands that KRS is subject to Kentucky's public records/disclosure laws and that KRS will disclose certain fund-level information, all contracts/offering documents, and other fee information, as described in KRS's side letter request and applicable Kentucky law. (See Exhibit A for a copy of the provision.)

Particularly, the GP/investment manager understands that:

(a) Pursuant to Kentucky Revised Statutes sections 61.645(19)(l) and (20), KRS is required to disclose all contracts or offering documents for services, goods, or property purchased or utilized by KRS. KRS intends to post any contracts with the GP/investment manager/fund on its website, which may include partnership agreements, side letters or similar documents. KRS may also post offering documents to its website if such offering documents contain substantive legal terms that are not contained in KRS's contracts with the GP/investment manager/fund or if there is no separate contract governing the investment. The GP/investment manager is invited to send KRS a redacted version of the contracts/offering documents.

(b) With respect to redacted documents, the GP/investment manager can only redact information that is exempt under Kentucky Revised Statutes sections 61.878(1)(c)(1); 61.878(1)(k) or 61.645(20) (i.e., information that is proprietary or otherwise exempt under Kentucky Revised Statutes section 61.878). Redacted documents should be reviewed by KRS prior to closing. ***KRS will NOT wire initial funding of any investment until redacted fund documents have been received and accepted by KRS internal legal staff.***

(c) In KRS's side letter (or in other relevant document executed by KRS), the GP/investment manager must clearly state the final closing date of the fund, and acknowledge that the final closing date is the date on which all redacted documents will be/may be posted on KRS's website or disclosed to the public. Further, the side letter must state that the fund/GP/investment manager will

not make any claim against KRS if it makes available to the public any document, report, notice or other information that KRS received from the fund, which was required to be made public by KRS pursuant to the Open Records Act, the Fee Disclosure Law, or the Document Disclosure Law (even if a court or the Attorney General later determines that certain information disclosed by KRS falls within an exemption under the Open Records Act, the Fee Disclosure Law, or the Document Disclosure Law.)

(d) pursuant to Kentucky Revised Statutes section 61.645(19)(i), KRS is required to disclose certain fee information. (See paragraph 1(d) in Exhibit A.)

2. Compliance with and Adherence to Investment Advisers Act of 1940, et.al. The GP/investment manager confirms that the GP and the investment manager shall comply with Kentucky Revised Statutes Section 61.650(1)(d)(2). (See paragraph 2 in Exhibit A for standard letter provision.)

3. KRS's Indemnification Obligation. KRS's indemnification obligations under the Subscription Agreement and the Partnership Agreement are not expressly authorized by the laws of the Commonwealth of Kentucky. Thus, KRS can't make any payment constituting such indemnification to the extent not authorized under such laws. (See paragraph 3 in Exhibit A.)

4. Sovereign Immunity. As a public agency, KRS reserves all immunities, defenses, rights or actions arising out of its sovereign status or under the 11th Amendment to the U.S. Constitution. (See paragraph 4 in Exhibit A.)

5. Jurisdiction/Venue.

(a) KRS requires its side letter to be governed by the laws of the Commonwealth of Kentucky, to the extent the terms in the side letter require interpretation or enforcement of a law, regulation or publicly policy of Kentucky. (See paragraph 5 in Exhibit A.); and

(b) The GP/investment manager agrees to the exclusive jurisdiction of the Franklin County Circuit Court in the Commonwealth of Kentucky, in connection with any legal proceeding involving any claim asserted by or against KRS arising out of the Partnership Agreement, the Subscription Agreement or related documents.

6. Conflict of Interest Statement. As part of KRS' internal policy, the GP/manager is required to sign and return KRS' Conflict of Interest Statement. (See Exhibit B.)

7. Statement of Disclosure and Placement Agent. As part of KRS' internal policy, the GP/manager is required to complete and return KRS' Statement of Disclosure and Placement Agent (Exhibit C: See KRS's Statement of Disclosure and Placement Agents – Manager Questionnaire).

EXHIBIT A - Side Letter Provisions1. Public Records.

(a) The Partnership hereby acknowledges that the Investor is a public agency subject to (i) Kentucky's public record law (Kentucky Revised Statutes sections 61.870 to 61.884, the "Open Records Act"), which provide generally that all records relating to a public agency's business are open to public inspection and copying unless exempted under the Open Records Act, (ii) Kentucky Revised Statutes section 61.645(19)(i) (the "Fee Disclosure Law"), and (iii) Kentucky Revised Statutes sections 61.645 (19)(l) and (20) (the "Document Disclosure Law"), which provide generally that all contracts or offering documents for services, goods, or property purchased or utilized by the Investor shall be made available to the public unless exempted under the Document Disclosure Law. Notwithstanding any provision in the Partnership Agreement or the Subscription Agreement to the contrary, the Partnership hereby agrees that (i) the Investor will generally treat all information received from the General Partner or the Partnership as open to public inspection under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, unless such information falls within an exemption under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, and (ii) the Investor will not be deemed to be in violation of any provision of the Partnership Agreement or the Subscription Agreement relating to confidentiality if the Investor discloses or makes available to the public (e.g., via Investor's website) any information regarding the Partnership to the extent required pursuant to or under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, including the Fund-Level Information in paragraph 1(b) (even if a court or the Attorney General later determines that certain information disclosed by the Investor falls within an exemption under the Open Records Act, the Fee Disclosure Law, or the Document Disclosure Law).

(b) The General Partner acknowledges that the Investor considers certain fund level information public under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law and that the Investor has concluded that it is obligated to disclose such information upon request (e.g., via Investor's website). Notwithstanding any provision in the Partnership Agreement or Subscription Agreement to the contrary, the General Partner agrees that the Investor may disclose the following information without notice to the General Partner or the Partnership: (i) the name of the Partnership, (ii) the vintage year of the Partnership and/or the date in which the Investor's initial investment was made in the Partnership; (iii) the amount of the Investor's Capital Commitment and unfunded Capital Commitment, (iv) aggregate funded contributions made by the Investor and aggregate distributions received by the Investor from the Partnership as of a specified date; (v) the estimated current value of the Investor's investment in the Partnership as of any previous date, (vi) the net asset value of the Partnership as of a specified date, (vii) the estimated IRR of the Investor's investment in the Partnership as of a specified date, and (viii) the amount of fees and commissions (including, but not limited to, the Management Fees, amounts paid in lieu of the Management Fees, and Carried Interest Distributions) paid to the General Partner and its Affiliates with respect to the Investor's interests (the "Fund-Level Information"). Nothing contained herein shall require the General Partner to disclose to the Investor information not otherwise made available to all Limited Partners pursuant to the Partnership Agreement.

(c) The General Partner agrees that the Investor may disclose the redacted versions of [Confidential Private Placement Memorandum of the Partnership,¹ the Partnership Agreement, this Side Letter, and the Investor's Subscription Documents] (collectively, the "Partnership Documents"), in each case to the extent required by the Document Disclosure Law, once

¹ Please note KRS may be able to remove the PPM from the list if the PPM includes all substantial legal terms that are addressed in the LPA. If the PPM has substantial legal terms that are not addressed in the LPA, it should be included in the list.

the offering period ends and the final closing date [FUND TO INSERT THE FINAL CLOSING DATE] occurs. It is further understood and agreed that the parties hereto shall amend and restate this Side Letter to reflect any elections under [MFN paragraph] hereof and shall amend the redacted version of this Side Letter in connection therewith.

(d) Notwithstanding any provision in the Partnership Agreement or Subscription Agreement to the contrary, the General Partner shall provide the Investor on at least a quarterly basis the information set forth in the Fee Disclosure Law, including but not limited to, (i) the dollar value of fees and commissions paid by the Investor (including via Capital Contributions) to the Partnership (including any Alternative Investment Vehicle), General Partner, Management Company or their respective Affiliates; (ii) the dollar value of the Investor's pro rata share of any profit sharing, Carried Interest Distributions or any other incentive arrangements, partnership agreements, or any other partnership expenses paid to the Partnership, General Partner, Management Company or their Affiliates; and (iii) if applicable, the name and address of all individual underlying managers or partners in any fund of funds in which Investor's assets are invested.

(e) The General Partner agrees that the Investor may disclose confidential information to any governmental body that has oversight over it and its statutory auditor, without notice to the General Partner or the Partnership; provided that such information retains the same confidential treatment with the recipient.

(f) The General Partner agrees to provide reporting to the Investor in accordance with the Fee Template published by the Institutional Limited Partners Association (available at ilpa.org).

(g) The General Partner and the Partnership acknowledge and agree that pursuant to the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, the Investor may publicly disclose the information set forth in this paragraph 1 without further notice to the General Partner.

2. Investment Advisers Act of 1940. The General Partner confirms that pursuant to Kentucky Revised Statutes Section 61.650(1)(d)(2), the General Partner and the Management Company shall comply with (a) the Investment Advisers Act of 1940, as amended, and the rules and regulations promulgated thereunder, and (b) all other federal securities statutes and related rules and regulations applicable to investment managers. **[Note to GP/Manager: To the extent the manager views itself exempt from the registration with the SEC, KRS expects that the manager would act as if they were a registered investment adviser (i.e., comply with substantive provisions of the Advisers Act (everything except filing requirements) and provide a private action to KRS in the event of violations of the Advisers Act terms).]**

3. Indemnification. The General Partner acknowledges that the Investor has advised it that indemnification obligations under the Investor's Subscription Agreement and the Partnership Agreement that may be attributed to the Investor are not expressly authorized by the laws of the Commonwealth of Kentucky. As a result thereof, the Investor shall not be obligated to make any payment constituting such indemnification to the extent not authorized under such laws. Representations, warranties or covenants made by the Investor in the Partnership Agreement or the Investor's Subscription Agreement respecting limited partner interests in the Partnership shall be deemed to be modified so as to be consistent with the provisions of the preceding sentence. Nothing contained herein, however, shall relieve the Investor of any obligation it may have under the Partnership Agreement to contribute capital in respect of its Capital Commitment under the terms and conditions of the Partnership Agreement.

4. Reservation of Immunities. The Investor hereby reserves all immunities, defenses, rights or actions arising out of its sovereign status or under the Eleventh Amendment to the United

States Constitution, and no waiver of any such immunities, defenses, rights or actions shall be implied or otherwise deemed to exist by its entry into the Partnership Agreement, the Subscription Agreement or this Side Letter (the "Investment Agreements"), by any express or implied provision thereof or by any actions or omissions to act on behalf of the Investor or any representative or agent of the Investor, whether taken pursuant to the Partnership Agreement or the Subscription Agreement or prior to the entry by the Investor into the Partnership Agreement or the Subscription Agreement.

Notwithstanding the foregoing sentence, the Investor hereby acknowledges that the foregoing sentence in no way compromises or otherwise limits the obligations (including the contractual liability) of the Investor under the Investment Agreements nor shall it reduce or modify the rights of the General Partner and the Partnership to enforce such obligations at law or in equity, in each case including but not limited to (a) Investor's obligations to make contributions and (b) any obligation to reimburse or otherwise pay the Partnership or any other Partner for any loss, damage or liability arising from a breach of any representation, warranty or agreement of the Investor contained in the Partnership Agreement or the Investor's Subscription Agreement.

5. Governing Law; Jurisdiction. Except to the extent the terms hereof require interpretation or enforcement of a law, regulation or public policy of the Commonwealth of Kentucky, in which case the laws of the Commonwealth of Kentucky shall govern, this Side Letter shall be governed by the laws of the [State of Delaware] without regard to principles of conflicts of law. Notwithstanding anything to the contrary in the Partnership Agreement or the Subscription Agreement, the General Partner agrees with the Investor that any legal proceeding involving any claim asserted by or against the Investor arising out of the Partnership Agreement or the Subscription Agreement may be brought only in and subject to the exclusive jurisdiction of the Franklin County Circuit Court in the Commonwealth of Kentucky.

6. Conflicts Interest Statement. The General Partner acknowledges and agrees it will act in accordance with the Conflict of Interest Statement attached hereto as Exhibit B and will promptly notify the Investor if it becomes aware of a violation of such Exhibit.

7. Statement of Disclosure and Placement Agent. The General Partner acknowledges and agrees it will promptly notify KRS in writing if any of the responses set forth in the Statement of Disclosure and Placement Agents attached hereto as [Exhibit ___] cease to be accurate.

EXHIBIT B – Conflict of Interest Statement

**KENTUCKY RETIREMENT SYSTEMS
CONFLICT OF INTEREST STATEMENT**

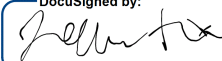
In consideration of the investment by Kentucky Retirement Systems and Kentucky Retirement Systems Insurance Trust Fund (collectively, "KRS") in a vehicle or account ("Account") managed by J.P. Morgan Investment Management Inc. (the "Manager"), the Manager acknowledges the need to maintain the public's confidence and trust in the integrity of KRS and the Commonwealth of Kentucky. In light of the forgoing, the Manager agrees to:

- Diligently identify, disclose, avoid and manage conflicts of interest that may arise through its relationship with KRS.
- Conduct activities with KRS so as not to advance or protect its own interests or the private interests of others with whom it has a relationship in a way that is detrimental to the interests of KRS.
- Conduct its activities in a manner to best promote the interests of KRS, but subject to the Manager's duty which requires it not to put the interests of one investor ahead of those of another investor.
- Upon discovery of an actual or potential conflict of interest involving KRS, disclose such conflict of interest to KRS and work with KRS in good faith to resolve or mitigate such conflict.
- Not engage directly or indirectly in any financial or other transactions with a trustee or employee of KRS that would violate the standards of the Executive Branch Ethics provisions as set forth in KRS Chapter 11A.

Agreed this the 10th day of February, 2025

MANAGER

For itself and on behalf of the Account

DocuSigned by:

By: _____
175F098FF357440...

Name: Jeffrey Fox

Title: Managing Director, Client Advisor

J.P. Morgan Investment Management Inc. has carefully reviewed the Gating Terms (including the Conflict of Interest Statement – Exhibit B) and, while we do not believe there are any material issues that cannot be resolved to our mutual benefit, we respectfully reserve the right to further discuss with you how we may tailor certain provisions of the Gating Terms to the vehicle and structure you ultimately decide on so as to appropriately address any legal, regulatory or operational requirements that pertain to the services being offered.

EXHIBIT C – Statement of Disclosure and Placement Agents

Kentucky Retirement Systems
Statement of Disclosure and Placement Agents – Manager Questionnaire

1. Did your firm use a placement agent as defined in the KRS “Statement of Disclosure and Placement Agents” policy in an effort to solicit an Investment from KRS Please indicate fund vehicle title if relevant? If yes, please continue to question 2; if no, please proceed to question 10.

No, J.P. Morgan Investment management Inc. (“JPMIM”) does not hire 3rd party marketing or placement agents. JPMIM provides a salary, discretionary incentive award and benefits to JPMIM employees. Salaries are paid on a semi-monthly basis, while the discretionary incentive award is distributed annually in the form of cash and JPMorgan Chase & Co. (“JPMC”) Restricted Stock Units. Discretionary incentive awards are determined by management based upon factors that include individuals, JPMIM, and over-all JPMC performance. All compensation and benefits are believed to be commensurate with what is provided by competitor organizations. Employees will receive compensation under these provisions whether or not Kentucky Retirement Systems decide to invest in the Proposed Investment.

2. Please disclose the name of the placement agency used, the names of the individuals contracted by the placement agency (either as employees or as sub-agents) in order to solicit an investment from KRS, and the fees paid or payable to the placement agent in connection with a prospective KRS investment.

N/A

3. Please represent that any fees paid to placement agents are the sole obligation of the investment manager and not that of KRS or the limited partnership.

N/A

4. Please disclose the names of any current or former Kentucky elected or appointed government officials (federal, state, and local government), KRS Board of Trustees members, employees, or consultants of KRS, or any other person, if any, who suggested the retention of the placement agent.

N/A

5. Please provide evidence of the regulatory agencies, if any, in any Federal, state or foreign jurisdiction the placement agent or any of its affiliates are registered with, such as the Securities and Exchange Commission (“SEC”), FINRA, or any similar regulatory agency.

N/A

6. Please provide a resume for each officer, partner or principal of the Placement Agent detailing the person’s education, professional designations, regulatory licenses and investment and work experience.

N/A

7. Please describe the services to be performed by the Placement Agent.

N/A

8. Please disclose whether the Placement Agent, or any of its affiliates, is registered as a lobbyist with any and all Kentucky state and local (county) governments.

N/A

9. Please disclose any political contributions made by the Placement Agent to any Kentucky official within the prior 2 years.

N/A

10. Please disclose the names of any current or former Kentucky elected or appointed government officials (federal, state, and local government) KRS Board of Trustees members, employees, or consultants of KRS that are receiving any fees or compensation from the External Manager and/or placement agent. Please disclose any additional known relationships or conflicts with same.

None.

11. Please disclose any political contributions made by External Manager or principals of the External Manager in the prior 2 years.


To the best of our knowledge, information and belief, no political contributions were identified from JPMIM or JPMIM's principals to any current or former Kentucky elected or appointed government officials (federal, state, and local government) in the prior two years.

12. Please disclose whether any principals of the firm have been involved in any regulatory proceedings, and if so, details concerning the same.

JPMorgan Chase & Co. and/or its subsidiaries (collectively, the "Firm") are defendants or putative defendants in numerous legal proceedings, including private civil litigations and regulatory/government investigations. The litigations range from individual actions involving a single plaintiff to class action lawsuits with potentially millions of class members. Investigations involve both formal and informal proceedings, by both governmental agencies and self-regulatory organizations. These legal proceedings are at varying stages of adjudication, arbitration or investigation, and involve each of the Firm's lines of business and geographies and a wide variety of claims (including common law tort and contract claims and statutory antitrust, securities and consumer protection claims), some of which present novel legal theories. Based on current knowledge, the Firm believes it has asserted meritorious defenses to the claims asserted against it in its currently outstanding legal proceedings, intends to defend itself vigorously in all such matters, and does not believe that any pending legal proceeding would have a material effect on the Firm's performance of the services contemplated by the Request for Proposal. For further discussion, please refer to JPMorgan Chase & Co.'s publicly-filed disclosures, including its most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q filed with the U.S. Securities and Exchange Commission (available at: <https://jpmorganchaseco.gcs-web.com/ir/sec-other-filings/overview>).

13. Please provide a statement representing and warranting the accuracy of the information provided to KRS regarding the Statement of Disclosure, and acknowledge that similar language will be included in any final written agreement with a continuing obligation to update any such information within 10 business days of any change in the information.

JPMIM represents and warrants (i) that the information provided to KRS regarding the Statement of Disclosure is accurate and (ii) acknowledges that a similar language will be included in any final written agreement with a continuing obligation to update any such information within 10 business days of any change in the information.

DocuSigned by:

175F035FF337440...
External Manager Signature Feb 10, 2025 | 10:34 AM PST
Date

**Kentucky Retirement Systems
&
Kentucky Retirement Systems Insurance Trust Fund (collectively, "KRS")**

Gating Issues for Investing

(version November 2019)

Below are KRS's "gating items," with which the GP/investment manager needs to agree in order for KRS to make the proposed fund investment. Following confirmation that the GP/investment manager agrees with KRS on these gating issues, KRS will provide a comment memo and a full side letter.

We are disseminating the gating items list at the beginning of the process, so that internal counsel for the GP/ investment manager (and its law firm) can unambiguously understand that the side letter will need to be consistent with these gating items, and KRS will not accept the fund's "standard" provisions if they are in any way inconsistent with these gating items.

1. Disclsoure/Public Records Law. The GP/investment manager understands that KRS is subject to Kentucky's public records/disclosure laws and that KRS will disclose certain fund-level information, all contracts/offering documents, and other fee information, as described in KRS's side letter request and applicable Kentucky law. (See Exhibit A for a copy of the provision.)

Particularly, the GP/investment manager understands that:

(a) Pursuant to Kentucky Revised Statutes sections 61.645(19)(l) and (20), KRS is required to disclose all contracts or offering documents for services, goods, or property purchased or utilized by KRS. KRS intends to post any contracts with the GP/investment manager/fund on its website, which may include partnership agreements, side letters or similar documents. KRS may also post offering documents to its website if such offering documents contain substantive legal terms that are not contained in KRS's contracts with the GP/investment manager/fund or if there is no separate contract governing the investment. The GP/investment manager is invited to send KRS a redacted version of the contracts/offering documents.

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2. Compliance with and Adherence to Investment Advisers Act of 1940, et.al. The GP/investment manager confirms that the GP and the investment manager shall comply with Kentucky Revised Statutes Section 61.650(1)(d)(2). (See paragraph 2 in Exhibit A for standard letter provision.)

3. KRS's Indemnification Obligation. KRS's indemnification obligations under the Subscription Agreement and the Partnership Agreement are not expressly authorized by the laws of the Commonwealth of Kentucky. Thus, KRS can't make any payment constituting such indemnification to the extent not authorized under such laws. (See paragraph 3 in Exhibit A.)

4. Sovereign Immunity. As a public agency, KRS reserves all immunities, defenses, rights or actions arising out of its sovereign status or under the 11th Amendment to the U.S. Constitution. (See paragraph 4 in Exhibit A.)

5. Jurisdiction/Venue.

(a) KRS requires its side letter to be governed by the laws of the Commonwealth of Kentucky, to the extent the terms in the side letter require interpretation or enforcement of a law, regulation or publicly policy of Kentucky. (See paragraph 5 in Exhibit A.); and

(b) The GP/investment manager agrees to the exclusive jurisdiction of the Franklin County Circuit Court in the Commonwealth of Kentucky, in connection with any legal proceeding involving any claim asserted by or against KRS arising out of the Partnership Agreement, the Subscription Agreement or related documents.

6. Conflict of Interest Statement. As part of KRS' internal policy, the GP/manager is required to sign and return KRS' Conflict of Interest Statement. (See Exhibit B.)

7. Statement of Disclosure and Placement Agent. As part of KRS' internal policy, the GP/manager is required to complete and return KRS' Statement of Disclosure and Placement Agent (Exhibit C: See KRS's Statement of Disclosure and Placement Agents – Manager Questionnaire).

EXHIBIT A - Side Letter Provisions

1. Public Records.

(a) The Partnership hereby acknowledges that the Investor is a public agency subject to (i) Kentucky's public record law (Kentucky Revised Statutes sections 61.870 to 61.884, the "Open Records Act"), which provide generally that all records relating to a public agency's business are open to public inspection and copying unless exempted under the Open Records Act, (ii) Kentucky Revised Statutes section 61.645(19)(i) (the "Fee Disclosure Law"), and (iii) Kentucky Revised Statutes sections 61.645 (19)(l) and (20) (the "Document Disclosure Law"), which provide generally that all contracts or offering documents for services, goods, or property purchased or utilized by the Investor shall be made available to the public unless exempted under the Document Disclosure Law. Notwithstanding any provision in the Partnership Agreement or the Subscription Agreement to the contrary, the Partnership hereby agrees that (i) the Investor will generally treat all information received from the General Partner or the Partnership as open to public inspection under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, unless such information falls within an exemption under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, and (ii) the Investor will not be deemed to be in violation of any provision of the Partnership Agreement or the Subscription Agreement relating to confidentiality if the Investor discloses or makes available to the public (e.g., via Investor's website) any information regarding the Partnership to the extent required pursuant to or under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, including the Fund-Level Information in paragraph 1(b) (even if a court or the Attorney General later determines that certain information disclosed by the Investor falls within an exemption under the Open Records Act, the Fee Disclosure Law, or the Document Disclosure Law).

(b) The General Partner acknowledges that the Investor considers certain fund level information public under the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law and that the Investor has concluded that it is obligated to disclose such information upon request (e.g., via Investor's website). Notwithstanding any provision in the Partnership Agreement or Subscription Agreement to the contrary, the General Partner agrees that the Investor may disclose the following information without notice to the General Partner or the Partnership: (i) the name of the Partnership, (ii) the vintage year of the Partnership and/or the date in which the Investor's initial investment was made in the Partnership; (iii) the amount of the Investor's Capital Commitment and unfunded Capital Commitment, (iv) aggregate funded contributions made by the Investor and aggregate distributions received by the Investor from the Partnership as of a specified date; (v) the estimated current value of the Investor's investment in the Partnership as of any previous date, (vi) the net asset value of the Partnership as of a specified date, (vii) the estimated IRR of the Investor's investment in the Partnership as of a specified date, and (viii) the amount of fees and commissions (including, but not limited to, the Management Fees, amounts paid in lieu of the Management Fees, and Carried Interest Distributions) paid to the General Partner and its Affiliates with respect to the Investor's interests (the "Fund-Level Information"). Nothing contained herein shall require the General Partner to disclose to the Investor information not otherwise made available to all Limited Partners pursuant to the Partnership Agreement.

(c) The General Partner agrees that the Investor may disclose the redacted versions of [Confidential Private Placement Memorandum of the Partnership,¹ the Partnership Agreement, this Side Letter, and the Investor's Subscription Documents] (collectively, the "Partnership Documents"), in each case to the extent required by the Document Disclosure Law, once

¹ Please note KRS may be able to remove the PPM from the list if the PPM includes all substantial legal terms that are addressed in the LPA. If the PPM has substantial legal terms that are not addressed in the LPA, it should be included in the list.

the offering period ends and the final closing date [FUND TO INSERT THE FINAL CLOSING DATE] occurs. It is further understood and agreed that the parties hereto shall amend and restate this Side Letter to reflect any elections under [MFN paragraph] hereof and shall amend the redacted version of this Side Letter in connection therewith.

(d) Notwithstanding any provision in the Partnership Agreement or Subscription Agreement to the contrary, the General Partner shall provide the Investor on at least a quarterly basis the information set forth in the Fee Disclosure Law, including but not limited to, (i) the dollar value of fees and commissions paid by the Investor (including via Capital Contributions) to the Partnership (including any Alternative Investment Vehicle), General Partner, Management Company or their respective Affiliates; (ii) the dollar value of the Investor's pro rata share of any profit sharing, Carried Interest Distributions or any other incentive arrangements, partnership agreements, or any other partnership expenses paid to the Partnership, General Partner, Management Company or their Affiliates; and (iii) if applicable, the name and address of all individual underlying managers or partners in any fund of funds in which Investor's assets are invested.

(e) The General Partner agrees that the Investor may disclose confidential information to any governmental body that has oversight over it and its statutory auditor, without notice to the General Partner or the Partnership; provided that such information retains the same confidential treatment with the recipient.

(f) The General Partner agrees to provide reporting to the Investor in accordance with the Fee Template published by the Institutional Limited Partners Association (available at ilpa.org).

(g) The General Partner and the Partnership acknowledge and agree that pursuant to the Open Records Act, the Fee Disclosure Law or the Document Disclosure Law, the Investor may publicly disclose the information set forth in this paragraph 1 without further notice to the General Partner.

2. Investment Advisers Act of 1940. The General Partner confirms that pursuant to Kentucky Revised Statutes Section 61.650(1)(d)(2), the General Partner and the Management Company shall comply with (a) the Investment Advisers Act of 1940, as amended, and the rules and regulations promulgated thereunder, and (b) all other federal securities statutes and related rules and regulations applicable to investment managers. **[Note to GP/Manager: To the extent the manager views itself exempt from the registration with the SEC, KRS expects that the manager would act as if they were a registered investment adviser (i.e., comply with substantive provisions of the Advisers Act (everything except filing requirements) and provide a private action to KRS in the event of violations of the Advisers Act terms).]**

3. Indemnification. The General Partner acknowledges that the Investor has advised it that indemnification obligations under the Investor's Subscription Agreement and the Partnership Agreement that may be attributed to the Investor are not expressly authorized by the laws of the Commonwealth of Kentucky. As a result thereof, the Investor shall not be obligated to make any payment constituting such indemnification to the extent not authorized under such laws. Representations, warranties or covenants made by the Investor in the Partnership Agreement or the Investor's Subscription Agreement respecting limited partner interests in the Partnership shall be deemed to be modified so as to be consistent with the provisions of the preceding sentence. Nothing contained herein, however, shall relieve the Investor of any obligation it may have under the Partnership Agreement to contribute capital in respect of its Capital Commitment under the terms and conditions of the Partnership Agreement.

4. Reservation of Immunities. The Investor hereby reserves all immunities, defenses, rights or actions arising out of its sovereign status or under the Eleventh Amendment to the United

States Constitution, and no waiver of any such immunities, defenses, rights or actions shall be implied or otherwise deemed to exist by its entry into the Partnership Agreement, the Subscription Agreement or this Side Letter (the "Investment Agreements"), by any express or implied provision thereof or by any actions or omissions to act on behalf of the Investor or any representative or agent of the Investor, whether taken pursuant to the Partnership Agreement or the Subscription Agreement or prior to the entry by the Investor into the Partnership Agreement or the Subscription Agreement.

Notwithstanding the foregoing sentence, the Investor hereby acknowledges that the foregoing sentence in no way compromises or otherwise limits the obligations (including the contractual liability) of the Investor under the Investment Agreements nor shall it reduce or modify the rights of the General Partner and the Partnership to enforce such obligations at law or in equity, in each case including but not limited to (a) Investor's obligations to make contributions and (b) any obligation to reimburse or otherwise pay the Partnership or any other Partner for any loss, damage or liability arising from a breach of any representation, warranty or agreement of the Investor contained in the Partnership Agreement or the Investor's Subscription Agreement.

5. Governing Law; Jurisdiction. Except to the extent the terms hereof require interpretation or enforcement of a law, regulation or public policy of the Commonwealth of Kentucky, in which case the laws of the Commonwealth of Kentucky shall govern, this Side Letter shall be governed by the laws of the [State of Delaware] without regard to principles of conflicts of law. Notwithstanding anything to the contrary in the Partnership Agreement or the Subscription Agreement, the General Partner agrees with the Investor that any legal proceeding involving any claim asserted by or against the Investor arising out of the Partnership Agreement or the Subscription Agreement may be brought only in and subject to the exclusive jurisdiction of the Franklin County Circuit Court in the Commonwealth of Kentucky.

6. Conflicts Interest Statement. The General Partner acknowledges and agrees it will act in accordance with the Conflict of Interest Statement attached hereto as Exhibit B and will promptly notify the Investor if it becomes aware of a violation of such Exhibit.

7. Statement of Disclosure and Placement Agent. The General Partner acknowledges and agrees it will promptly notify KRS in writing if any of the responses set forth in the Statement of Disclosure and Placement Agents attached hereto as [Exhibit ___] cease to be accurate.

EXHIBIT B – Conflict of Interest Statement

**KENTUCKY RETIREMENT SYSTEMS
CONFLICT OF INTEREST STATEMENT**

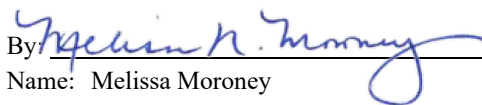
In consideration of the investment by Kentucky Retirement Systems and Kentucky Retirement Systems Insurance Trust Fund (collectively, "KRS") in a vehicle or account ("Account") managed by T. Rowe Price Associates, Inc. (the "Manager"), the Manager acknowledges the need to maintain the public's confidence and trust in the integrity of KRS and the Commonwealth of Kentucky. In light of the forgoing, the Manager agrees to:

- Diligently identify, disclose, avoid and manage conflicts of interest that may arise through its relationship with KRS.
- Conduct activities with KRS so as not to advance or protect its own interests or the private interests of others with whom it has a relationship in a way that is detrimental to the interests of KRS.
- Conduct its activities in a manner to best promote the interests of KRS, but subject to the Manager's duty which requires it not to put the interests of one investor ahead of those of another investor.
- Upon discovery of an actual or potential conflict of interest involving KRS, disclose such conflict of interest to KRS and work with KRS in good faith to resolve or mitigate such conflict.
- Not engage directly or indirectly in any financial or other transactions with a trustee or employee of KRS that would violate the standards of the Executive Branch Ethics provisions as set forth in KRS Chapter 11A.

Agreed this the 10th day of February, 2025

MANAGER

For itself and on behalf of the Account

By  _____

Name: Melissa Moroney

Title: Vice President

(Rev. Feb 2018)

EXHIBIT C – Statement of Disclosure and Placement Agents



**Kentucky Retirement Systems
Statement of Disclosure and Placement Agents – Manager Questionnaire**

1. Did your firm use a placement agent as defined in the KRS “Statement of Disclosure and Placement Agents” policy in an effort to solicit an Investment from KRS Please indicate fund vehicle title if relevant? If yes, please continue to question 2; if no, please proceed to question 10.
No.
2. Please disclose the name of the placement agency used, the names of the individuals contracted by the placement agency (either as employees or as sub-agents) in order to solicit an investment from KRS, and the fees paid or payable to the placement agent in connection with a prospective KRS investment.
3. Please represent that any fees paid to placement agents are the sole obligation of the investment manager and not that of KRS or the limited partnership.
4. Please disclose the names of any current or former Kentucky elected or appointed government officials (federal, state, and local government), KRS Board of Trustees members, employees, or consultants of KRS, or any other person, if any, who suggested the retention of the placement agent.
5. Please provide evidence of the regulatory agencies, if any, in any Federal, state or foreign jurisdiction the placement agent or any of its affiliates are registered with, such as the Securities and Exchange Commission (“SEC”), FINRA, or any similar regulatory agency.
6. Please provide a resume for each officer, partner or principal of the Placement Agent detailing the person’s education, professional designations, regulatory licenses and investment and work experience.
7. Please describe the services to be performed by the Placement Agent.
8. Please disclose whether the Placement Agent, or any of its affiliates, is registered as a lobbyist with any and all Kentucky state and local (county) governments.

9. Please disclose any political contributions made by the Placement Agent to any Kentucky official within the prior 2 years.

10. Please disclose the names of any current or former Kentucky elected or appointed government officials (federal, state, and local government) KRS Board of Trustees members, employees, or consultants of KRS that are receiving any fees or compensation from the External Manager and/or placement agent. Please disclose any additional known relationships or conflicts with same.

Not applicable.

11. Please disclose any political contributions made by External Manager or principals of the External Manager in the prior 2 years.

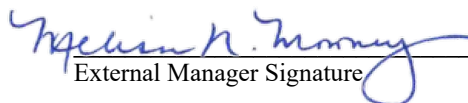
There have been no political contributions made concerning any Kentucky federal, state or local government organizations or persons.

12. Please disclose whether any principals of the firm have been involved in any regulatory proceedings, and if so, details concerning the same.

Not applicable.

13. Please provide a statement representing and warranting the accuracy of the information provided to KRS regarding the Statement of Disclosure, and acknowledge that similar language will be included in any final written agreement with a continuing obligation to update any such information within 10 business days of any change in the information.

External Manager represents and warrants the information provided to KRS regarding the Statement of Disclosure is accurate and acknowledges that similar language will be included in any final written agreement with a continuing obligation to update any such information within 10 business days of any change in the information.

 02/10/2025
External Manager Signature Date



KENTUCKY PUBLIC PENSIONS AUTHORITY



INVESTMENTS

To: KRS Investment Committee

From: Anthony Chiu, Deputy CIO

Date: February 17, 2025

Subject: Investment Recommendation – Arctos American Football Fund

KPPA Investment Staff is proposing an investment in the Arctos American Football Fund (“AAFF” or the “Fund”) contingent on successful IMA negotiations. Based in Dallas, Arctos Sports Partners (“Arctos” or the “Firm”) provides liquidity and strategic capital to the owners of major professional sports franchises, with a focus on what they call the United States’ Big 5 sports leagues - Major League Baseball (“MLB”), the National Basketball Association (“NBA”), the National Hockey League (“NHL”), Major League Soccer (“MLS”), and the National Football League (“NFL”). This mandate would be part of the Real Return asset allocation.

In February 2023, KPPA committed \$250 million (including co-investment) to Arctos Sports II (“Arctos II” or “Fund II”), which had a final close in April 2024 at more than \$4 billion (including co-investment). When KPPA made its commitment, the NFL was the only one of the major US sports leagues that had not approved institutional private equity investment in its teams. However, based on media reports and discussions, it appeared that the NFL had been observing and studying the other leagues’ experiences with institutional investment - and Staff was confident that the Arctos Sports II investment would eventually include NFL exposure.

In August 2024, the NFL announced that it would open to private equity investment, with a very select group of four investors provisionally approved: Arctos, Ares, Sixth Street, and a consortium that includes Blackstone, Carlyle, and CVC. While the league’s guidelines were similar to the other US leagues, the NFL had some additional requirements, including at least \$2 billion of committed capital and a maximum of 10% ownership in any single team.

Arctos created AAFF to invest in multiple NFL franchises and additional sports assets. In December, the first private equity investments in NFL teams were approved and announced, including Arctos’s investment with the Buffalo Bills.

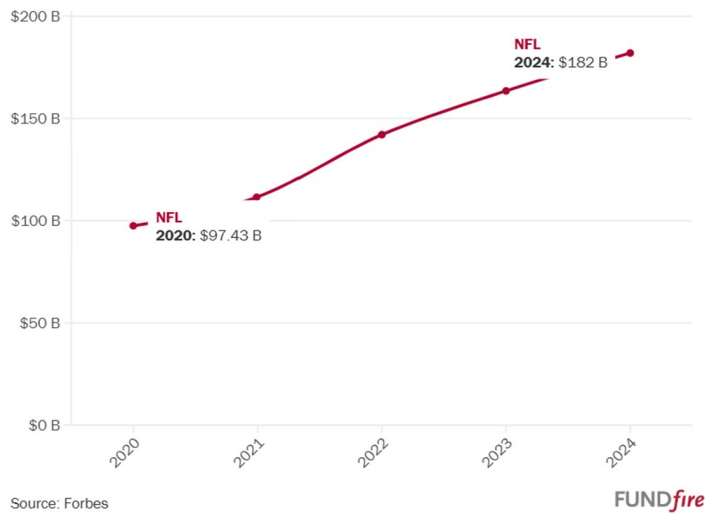
KPPA will have a small indirect investment in AAFF through Arctos II, and Staff is proposing an additional investment in AAFF to have a more meaningful exposure to the unique asset that is the NFL. This proposed investment will also help all KPPA plans continue to move toward their Real Return target allocations and replace the existing proxy real asset exposures in portfolios.

Investment Opportunity:

As with any investment, valuation is a key driver of future returns. And as discussed 2 years ago during the Arctos II approval process, a potential key risk for this strategy is that Arctos is providing liquidity to sellers of vanity assets that are underpinned by consumer and corporate spending near a market top.

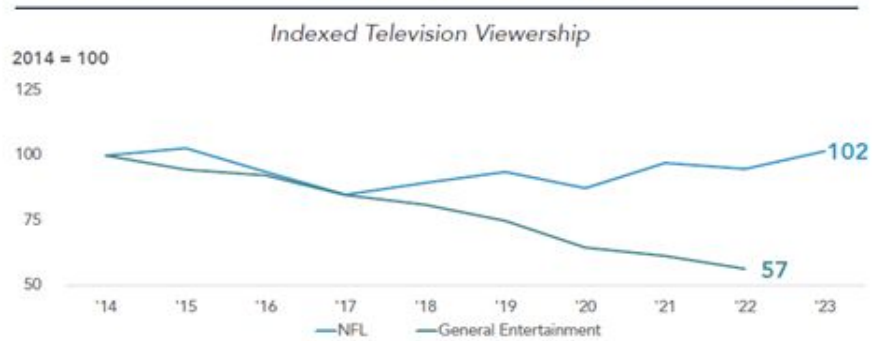
NFL's Rocketing Valuations

The combined worth of the National Football League's 32 franchises has nearly doubled since the pandemic, even before the league permitted its first investments by private equity firms.

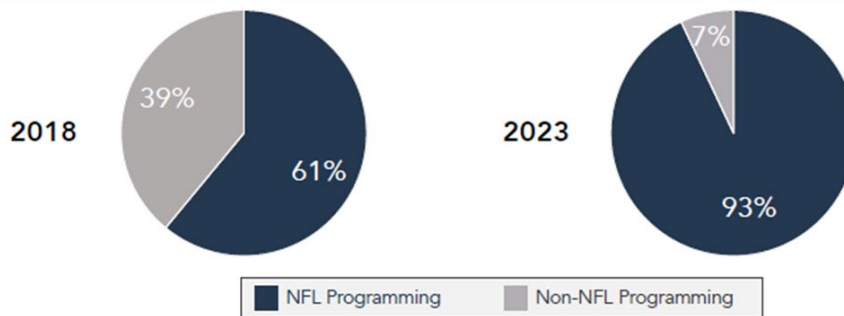


Subsequent to our commitment, US major league sports team valuations have continued to rise, but this has been fundamentally underpinned by their increasingly valuable media rights. Today people have essentially infinite choices for content consumption, and the resulting fragmentation of consumer attention has made live sports one of the few assets that can reliably deliver audiences at scale. The charts below show just how far the viewership for scripted and other produced shows has fallen compared to sports in just the past 5 to 10 years.

THE NFL IS CAPTURING GREATER LEVERAGE OVER LINEAR

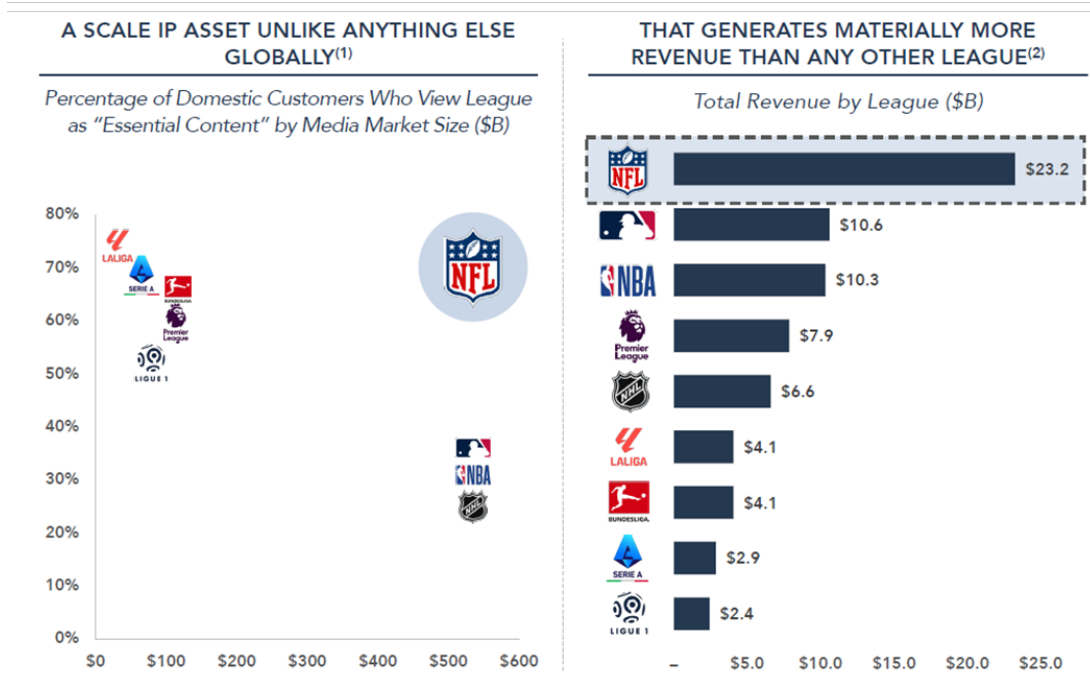


Top 100 TV Broadcasts by Category



Thus, both linear television networks and streaming providers **need** premium sports content – TV networks simply for survival and streaming services for subscriber growth. And among sports leagues, the NFL is literally in a league of its own for the fan interest and revenue that it drives.

The NFL is an Unrivaled Global IP Asset



The resulting cash flow streams (which are contracted and growing) combined with the scarcity of the underlying assets (the last NFL expansion team added was Houston in 2002, more than 20 years ago) make this a compelling real asset exposure for KPPA.

HIGHLY RECURRING CORE REVENUE



Performance:

Fund	Vintage	Size (\$ MM)	Net	
			Net IRR	Multiple
Arctos Sports I	2020	\$2,137	19%	1.5x
Arctos Sports II	2022	\$3,445	18%	1.3x

Source: Arctos as of 9/30/24

As of 9/30/24, Fund I is marked at 1.7x gross, with key positions including Sacramento Kings, Houston Astros, Golden State Warriors, and Tampa Bay Lightning. Fund II is marked at 1.5x gross and includes stakes in the Utah Jazz, Philadelphia 76ers / New Jersey Devils, and Los Angeles Dodgers among its top positions.

Conclusion: Given the compelling opportunity Staff is recommending an investment of up to \$30 million to be shared among all K and S plans. When fully funded, this would represent an additional ~0.3% of portfolio assets and provide ~0.35 – 0.50% of NFL exposure to each plan (depending on fluctuations in market value).

Investment and Terms Summary

Type of Investment: Real Return

Structure: GP / LP

Management Fee: Years 1-5: 1.75% on committed capital
Thereafter: 1.25% on invested capital, net of write-offs and distributions

Performance Fee: 20% over an 8% preferred return

Purpose: Capture the long-term valuation growth of scarce NFL league and team assets, which are backed by sizable contracted cash flow streams and profitability.

Risks: Equity, Liquidity, Lack of Control, Valuation, Key Person

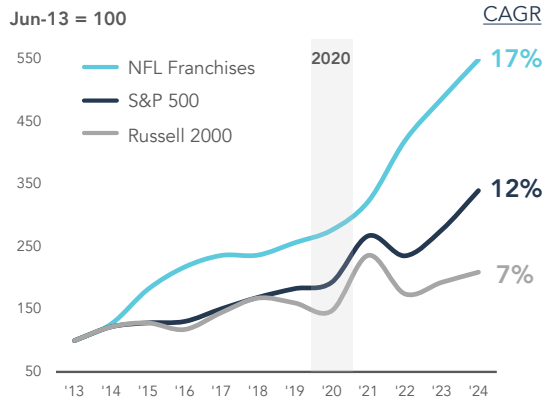
Exp. Net Return: 8% - 12%

Strong Performance Across Economic Cycles Driven by Fundamentals

NFL valuation growth driven by growing revenue, increasing quality of revenue, and margin expansion

STRONG LONG-TERM PERFORMANCE

Indexed Return from 2013-2024⁽¹⁾

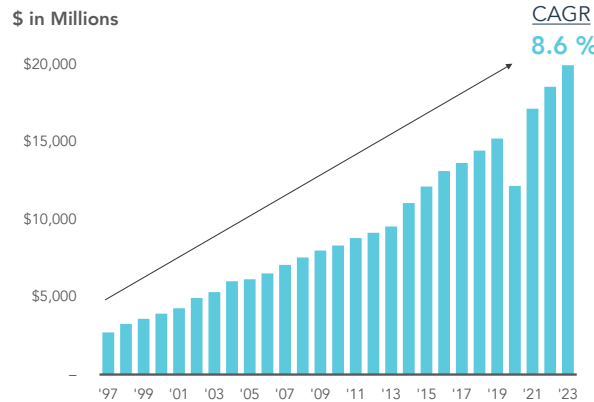


Pooled Asset Class Returns (IRR – 2013-2024⁽²⁾)



CONSISTENTLY GROWING REVENUES

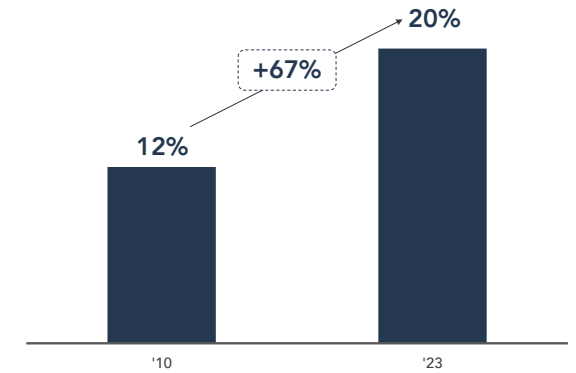
NFL Franchise Total Revenue (Per Forbes)⁽³⁾



~65% of 2024 NFL Franchise revenue is contracted through 2032 (Per Forbes)⁽³⁾⁽⁴⁾

AND GROWING PROFITABILITY

Avg. Franchise Margin Profile (Per Forbes)⁽³⁾



48.5% maximum of football-related revenue paid to players, which is contracted until 2030

Risk Reducer and Return Enhancer for an Institutional Portfolio

The return characteristics of NFL franchises are generally non-correlated and highly differentiated from traditional private investment strategies

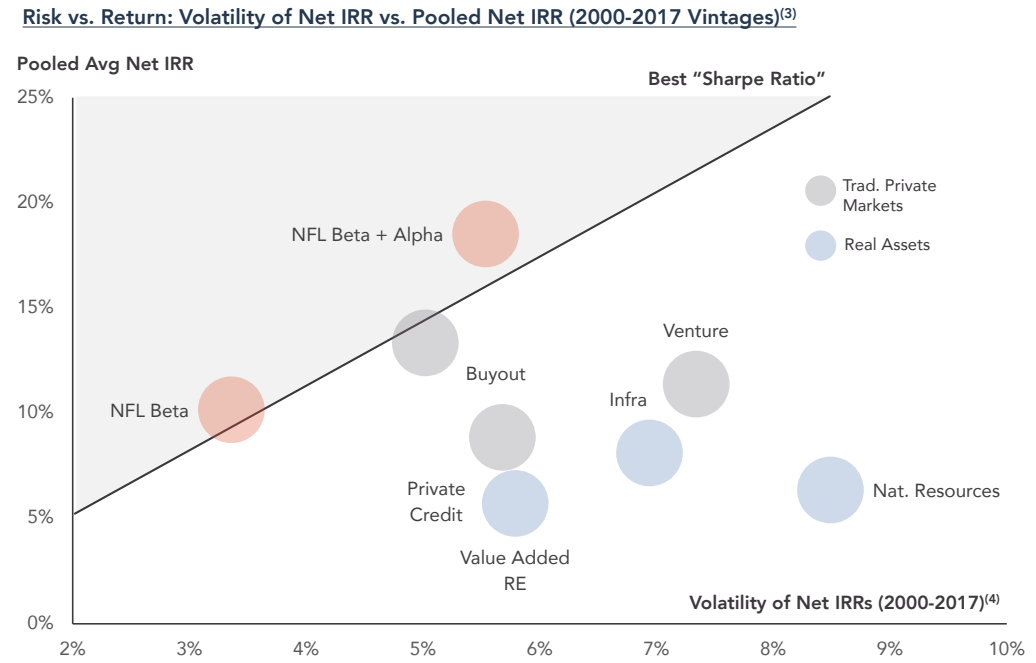
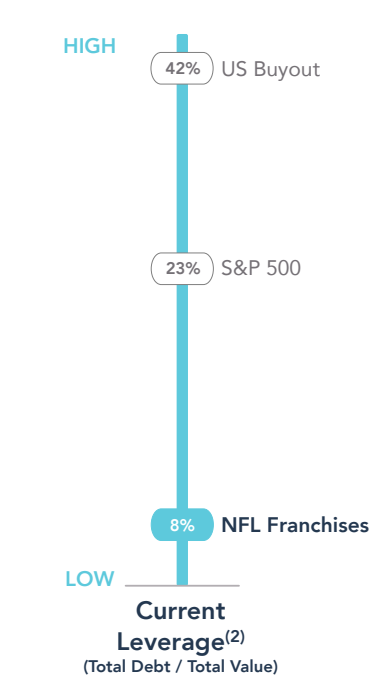
LOW CORRELATION...

...AND LOW LEVERAGE

...WITH RETURN OUTPERFORMANCE ON A RISK-ADJUSTED BASIS

NFL Franchises vs. Asset Class Correlations (1999-2024)⁽¹⁾

(0.0) vs. LBO	(0.1) vs. Venture
0.3 vs. Real Estate	0.1 vs. Infra.
(0.0) vs. Private Credit	(0.1) vs. US Equities



PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS. THE BENCHMARKS AND INDICES PROVIDED HEREIN WERE SELECTED BY ARCTOS FOR ILLUSTRATIVE PURPOSES ONLY. SELECTION OF SUCH BENCHMARKS OR INDICES IS INHERENTLY SUBJECTIVE AND OTHERS MIGHT SELECT OTHER BENCHMARKS OR INDICES BASED ON THEIR ASSESSMENT OF THE MARKET. ACTUAL RESULTS MAY DIFFER, PERHAPS MATERIALLY, FROM THE TRENDS PRESENTED HEREIN. PLEASE REFER TO ADDITIONAL DISCLAIMERS FOR IMPORTANT INFORMATION AS WELL AS ENDNOTE (G) FOR ADDITIONAL DISCLAIMERS.

(1) SOURCE: FORBES, BURGESS, MSCI, BLOOMBERG. CORRELATION OF NFL RETURNS TO SELECTED CATEGORY BASED ON ANNUAL TOTAL RETURNS ENDING JUNE 30 IN EACH YEAR FROM 1999 TO 2023. INDEX ASSIGNMENTS FOR THE CATEGORIES IN THE CORRELATION MATRIX ARE AS FOLLOWS: LBO (BURGISS GLOBAL BUYOUT MODIFIED DIETZ RETURNS), VENTURE (BURGISS GLOBAL VENTURE MODIFIED DIETZ RETURNS), REAL ESTATE (BURGISS GLOBAL VALUE-ADDED & OPPORTUNISTIC REAL ESTATE MODIFIED DIETZ RETURNS), INFRASTRUCTURE (BURGISS GLOBAL INFRASTRUCTURE MODIFIED DIETZ RETURNS), PRIVATE CREDIT (BURGISS GLOBAL PRIVATE DEBT MODIFIED DIETZ RETURNS), U.S. EQUITIES (MSCI USA), AND NFL (CONSTRUCTED FROM FORBES TEV). (2) NFL FRANCHISES: FORBES 2024 VALUATION DATA AS OF AUGUST 2024; US BUYOUT: BURGESS PRIVATE CAPITAL INDEX, ARCTOS ESTIMATE BASED ON 5X LEVERAGE / 12X ASSUMED PURCHASE MULTIPLE; S&P500: CAPITAL IQ AS OF AUGUST 2024 - S&P500 TOTAL LTM DEBT DIVIDED BY TOTAL TEV. (3) SOURCE: BURGESS, ARCTOS ANALYSIS AS OF AUGUST 2024. MINIMUM 7-YEAR OF FUND PERFORMANCE REQUIRED FOR COMPARABLE PERFORMANCE. NFL BETA IS THE ILLUSTRATIVE INVESTMENT RETURN OF A SYNTHETIC FUND ASSUMING \$1,000M OVER THE SELECTED TIME PERIOD ASSUMING NO PRICING OR DEAL STRUCTURE ALPHA GENERATION. NFL BETA + ALPHA INCLUDES BETA RETURN AS DESCRIBED PREVIOUSLY AS WELL AS ALPHA ASSOCIATED WITH DEAL SELECTION AND PRICING. (4) CALCULATED AS THE STANDARD DEVIATION OF VINTAGE YEAR POOLED NET IRRS, EXCLUDING OUTLIERS DUE TO LOW SAMPLE SIZES - ONLY APPLIES TO NATURAL RESOURCES (REMOVED 2000) AND INFRASTRUCTURE (REMOVED 2012).






Highly Differentiated and Durable Business Model

NFL franchises have unique ownership attributes and return drivers that Arctos believes are difficult to find in other asset classes

OWNERSHIP ATTRIBUTES

- 1 Ratable Ownership of Highly Cash Flowing, Global League Business
- 2 Regionally Protected Franchise Areas
- 3 Passionate and Sticky Customers (Fans)
- 4 Long-term and Recurring Revenues
- 5 Highly Visible Player Costs and Increasing Profitability
- 6 Attractive Supply Demand Dynamics and High Barriers to Entry

NFL OWNERSHIP IN ACTION⁽¹⁾

IP and Content Royalty Stream	Local & International Market Rights	Call Option on Platform Growth
 <p>~\$12.9Bn</p> <p>1/32nd League Ownership Distributable League Revenue⁽²⁾</p>	 <p>Bay Area (Exclusive) Mexico and U.K. (Non-Exclusive)</p>	 <p>Venue Optimization Real Estate Platform Building</p>
<p><i>Examples</i></p> 	<p><i>Examples</i></p> 	<p><i>Examples</i></p> 
<p>~\$400M</p> <p>Contracted Annual Distribution from League</p>	<p>~\$150M – \$650M</p> <p>Reoccurring Annual Revenue</p>	<p>Franchise Dependent</p> <p>Potential Upside</p>

SOURCE: ARCTOS PROPRIETARY RESEARCH, FORBES, THE ATHLETIC AS OF DECEMBER 2022; PLEASE REFER TO ADDITIONAL DISCLAIMERS FOR IMPORTANT INFORMATION.
 (1) THE FRANCHISE PRESENTED HEREIN IS FOR ILLUSTRATIVE PURPOSES ONLY AND DOES NOT REFLECT ANY ARCTOS INVESTMENT. IT SHOULD NOT BE ASSUMED THAT INVESTMENTS MADE IN THE FUTURE WILL BE COMPARABLE TO THE NFL FRANCHISES DESCRIBED HEREIN. CERTAIN INFORMATION WAS PROVIDED BY THIRD PARTIES AND CERTAIN STATEMENTS REFLECT ARCTOS' BELIEFS AS OF MAY 2024 BASED ON PRIOR EXPERIENCE AND CERTAIN ASSUMPTIONS THAT ARCTOS BELIEVES ARE REASONABLE BUT MAY PROVE INCORRECT.
 (2) SOURCE: SPORTS BUSINESS JOURNAL, "NFL SHARED REVENUE GROWS, BUT PACKERS' PROFITS FALL", AS OF JULY 2024.



To: KRS Investment Committee
From: Investment Staff
Subject: Public Equity Performance Benchmark Recommendation
Date: February 19, 2025

Recommendation

The Investment Policy Statement currently prescribes the MSCI All Country World Index Net USD (MSCI ACWI \$ net) as the performance benchmark for the Public Equity Asset Class. Staff and Wilshire have made the determination that this Index does not represent the current investment exposure and strategy of the asset class and embeds an unintended bias in the Global Equity allocation. Staff and Wilshire recommend adopting the MSCI All Country World Investable Market Index (MSCI ACWI IMI) as this benchmark represents a better alignment of the actual exposure and strategy of the portfolio as well as the desires of the Board.

History

Investment Policy Statements (IPS) prior to April 2022 provided a target allocation to both US Public Equities and to NonUS Public Equities. Accordingly, these previous IPSs prescribed regional performance benchmarks for measurement of those asset classes. With the adoption of the April 2022 IPS, the individual targets to both US and NonUS Public Equity allocations were removed in favor of the adoption of a Global Public Equity target using the MSCI ACWI \$ net as the performance benchmark.

Staff managed these changes in Asset Class targets and classifications utilizing the existing roster of investment managers and strategies in a manner appropriate to provide the desired Global Public Equity exposure, with the aim of minimizing both the direct and indirect costs of a significant portfolio turnover event.

Public Equity

04/30/22	Current	MSCI ACWI Net	100.0%					
01/31/16	03/31/22	Ruseell 3000	50.0%	MSCI ACWI ex US IMI Net	50.0%			
07/31/13	12/31/15	Russell 3000	45.5%	MSCI ACWI ex US	45.5%	MSCI EM Index	9.0%	

US Equity

04/31/13	Current	Russell 3000	100.0%
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Non US Equity

10/31/17	Current	MSCI ACWI es US IMI Net	100.0%
01/31/16	09/30/17	MSCI ACWI ex US IMI	100.0%
07/31/13	12/31/15	MSCI ACWI ex US	100.0%

Issue

It is expected that relative performance deviations will occur regularly due to tracking error, whether the result of active management or actively managed positioning tilts within the portfolio, surrounding style, region, or market cap. Those deviations should be attributed to a known source. In the recent market environment of large cap



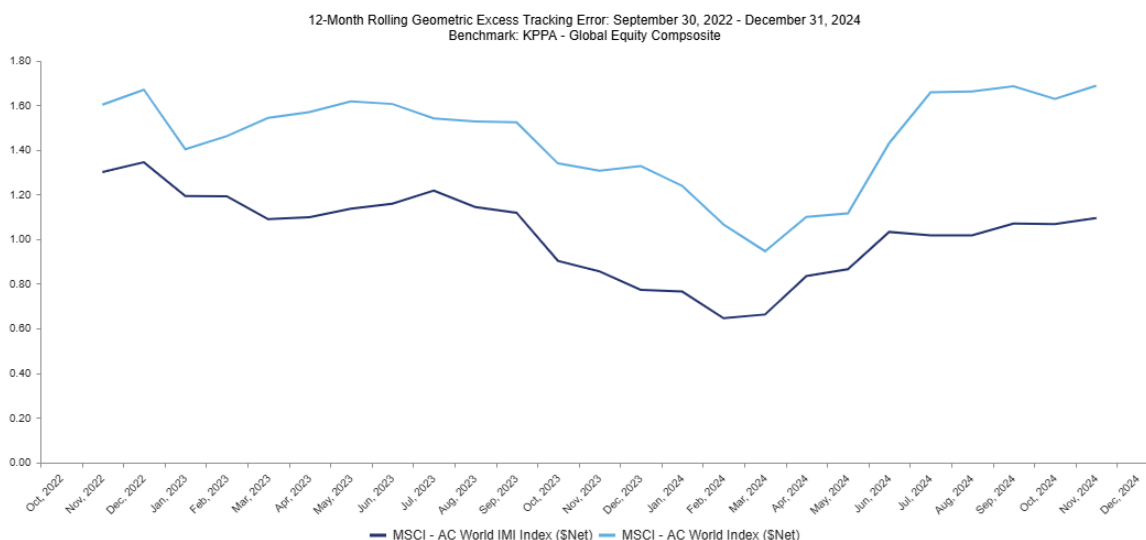
dominance, the degree of relative performance deviations at the Global Public Equity asset class level could not be fully explained by identifiable performance attributes or positioning.

This prompted staff to initiate an investigation into the current performance benchmark utilized in terms of its appropriateness given the actual portfolio’s exposures. Historically for the Public Equity asset class given the legacy strategies and asset class categorizations, staff utilized the Russell family of indices for the US portfolios and the MSCI family of indices for Non-US mandates. While blending two distinct index families can be difficult, the methodology employed by staff to build the Global Equity exposure has proven effective and has performed as expected. Legacy benchmarks (shown above) utilized included the R3000 and MSCI ACWI ex US IMI, providing the broadest definition of the investable universe.

The most recent IPS’s adoption of the MSCI ACWI \$ Net as the Global Equity performance benchmark created what Staff believes was an unintended structural small cap bias within the Global Equity portfolio, embedding an increased level of tracking error. This unintended embedded bias surfaced due to the significant performance deviations between US Public Equity market caps.

After discussions with MSCI (the index provider) and Wilshire, it has been confirmed that the MSCI ACWI \$ Net Index does not incorporate the bottom 15% of companies (by market cap), confirming the structural bias.

The following chart provided by Wilshire, demonstrates the shift in tracking error had KPPA employed the MSCI ACWI IMI. As demonstrated, tracking error would have been consistently decreased, at times by as much as +40%. A tighter tracking error is indicative of a more appropriate benchmark given a portfolio’s exposure.



Recommendation

Staff and Wilshire recommend that the IPS performance benchmark for Global Public Equity allocation be changed from the MSCI ACWI \$ Net to the more appropriate MSCI ACWI IMI. This change would expand the investable universe of the performance benchmark to one that is more appropriate given the exposures and strategy of the KPPA Global Public Equity portfolio.



Performance - 12/31/24	FYTD	1YR	3YR	5YR
KPPA Global Equity	5.04%	15.22%	4.43%	9.28%
<i>MSCI ACWI</i>	5.56%	17.49%	5.41%	10.06%
<i>MSCI ACWI IMI</i>	5.52%	16.37%	4.90%	9.67%

To: Kentucky Public Pensions Authority
From: Wilshire Advisors
Subject: Global Equity Benchmark
Date: January 30, 2025

Background

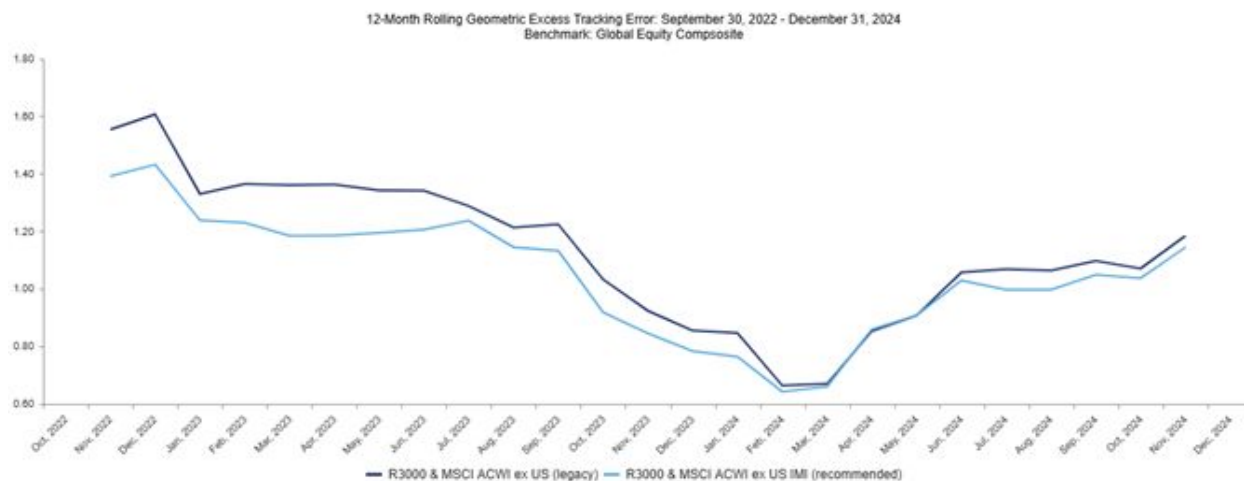
In 2021/2022 the U.S. and Non-U.S. Equity composites were combined into a Global Equity composite. This combination provided staff with a single public equity target instead of static regional targets between the U.S. and Non-U.S. markets. Static benchmark weights do not enable the benchmarking process to reflect the natural shifts that occur over time between U.S. and Non-U.S. market weights. The U.S. Equity composite had previously been benchmarked to the Russell 3000 index while the Non-U.S. composite was benchmarked to the MSCI All Country World ex. U.S. IMI Index (ACWI ex US IMI). Both of these indexes are commonly used by institutional investors. Upon the creation of the new Global Equity composite, the MSCI ACWI was selected as the new asset class benchmark.

According to the CFA Institute, a valid benchmark should possess the following characteristics, aligning the benchmark's style and risk with the asset class or manager:

- **Specified in advance**: The benchmark should be known at the start of the period
- **Appropriate/Relevant**: The benchmark should be consistent with the investment approach and style
- **Measurable**: Its value and return can be determined on a reasonably frequent basis
- **Unambiguous**: Clearly defined identities and weights of securities constituting the benchmark
- **Reflective of the current investment options**: The managers have current knowledge of and expertise with the securities in the benchmark
- **Accountable**: The manager(s) should accept the applicability of the benchmark and recognize differences in performance between the portfolio and benchmark as the results of active management
- **Investable**: The benchmark should be possible to replicate passively

Analysis

Upon a recent review of the Global Equity composite, it was determined that the experienced tracking error of the composite vs. its benchmark was higher than expected. Staff and Wilshire investigated the sources of tracking error within the portfolio and determined that while the MSCI ACWI represents the qualities above of a good benchmark, the MSCI ACWI IMI index was a better fit due to the construction methodology of the IMI index. Specifically, the MSCI ACWI index only covers 85% of the market capitalization per MSCI's construction methodology. Given the implementation of the public equity composite within small and micro-capitalization strategies, the MSCI ACWI IMI index is a better reflection of the current investment options in the portfolio as it covers 99% of the global equity investment opportunity set.



Given the tracking error above incorporates active management in addition to benchmark differences, analysis was performed to compare the underlying benchmarks at the region level to quantify the impact of using the standard MSCI regional index vs. the IMI counterpart. It was determined that by using the IMI version of the index as the global equity benchmark, over 65% of the systematic tracking error could be removed, reducing the one-year tracking error from 81bps down to 27bps.

Recommendation

Wilshire and staff are in agreement that the MSCI ACWI IMI Index is a better benchmark for the reasons listed above and would recommend that the global equity benchmark be changed accordingly within the Investment Policy Statement and used for performance reporting purposes.

Quarterly Investment Compliance Report

Quarter Ending December 31, 2024



Investment Guideline Compliance Review

Quarterly Investment Compliance Report Quarter Ending
12/31/2024

2

19 Guidelines In Compliance

0 Guidelines Not In Compliance

Guideline Category	Guideline	Compliance Status
General	The assets managed by any one active or passive investment manager shall not exceed 15% of the overall assets of the systems.*	In Compliance
	Total assets assigned to a selected manager shall not exceed 25% of the management firm's total assets under management.	In Compliance
	Total assets assigned to a selected manager shall not exceed 25% of the management firm's total assets under management in a commingled product.	In Compliance
	Derivative investments shall not cause the systems' portfolios to be leveraged beyond a 100% invested position.	In Compliance
	The maximum investment in any co-investment vehicle shall not exceed 50% of the total capital committed by all partners at the time of the final closing.	In Compliance
	The maximum investment in any single direct co-investment shall not exceed 20% of the original partnership commitment.	In Compliance
	Total investment in direct co-investments shall not exceed 20% of the asset class portfolio on a cost basis at the time of investment.	In Compliance
	An external investment manager's cash holdings shall not exceed 5% of the manager's allocation, unless such cash holdings are an integral part of a fixed income manager's investment strategy.	In Compliance
Equity	Externally and internally managed portfolio investment guidelines.	In Compliance
	The amount of stock in the domestic or international equity allocation in any single corporation shall not exceed 5% of the aggregate market value of the assets of the systems.	In Compliance
	The amount of stock held in the domestic or international equity allocation shall not exceed 3% of the outstanding shares of any single corporation.	In Compliance
	Investment in "frontier" markets shall not exceed 5% of the international equity assets of the systems.	In Compliance
Fixed Income	No more than 15% of the systems' total allocation to private equity investments may be committed to any one partnership.	In Compliance
	The duration of the core fixed income portfolios combined shall not vary from that of the systems' Fixed Income Index by more than +/- 25% as measured by effective duration, modified duration, or dollar duration except when the Investment Committee has determined a target duration to be used for an interim basis.	In Compliance
	The amount invested in the debt of a single issuer shall not exceed 5% of the total market value of the systems' fixed income assets, with the exception of U.S. Government issued, guaranteed, or agency obligations and certain derivative securities.	In Compliance
Real Return	50% of the core fixed income assets shall have stated liquidity that is trade date plus three (3) days or better.	In Compliance
	No more than 20% of the total net assets of the systems' Real Return portfolios shall be invested in any single closed-end or open-end limited partnership or other unregistered investment vehicle.	In Compliance
Cash Equivalent Securities	No more than 50% of the total net assets of the systems' Real Return portfolio shall be invested in any one registered investment vehicle, mutual fund, or separately managed account.	In Compliance
	All instruments in the liquidity allocation shall have a maturity at the time of purchase that does not exceed 397 days.	In Compliance

*Only applies to external managers and not to assets managed by KPPA Investment Staff.

Quarterly Investment Compliance Report Quarter Ending
12/31/2024

4

Guideline Compliance Overview

- Guidelines included are those “yes/no” requirements stated in Kentucky Retirement Systems’ Investment Policy Statement and the Investment Guidelines of external and internally managed portfolios.
- Guideline compliance reviews will look at the entire quarter.
- When there is an “out of compliance” finding for one (1) or more guidelines, the Quarterly Investment Compliance Report will include an “Exception Report.” The “Exception Report” will include the following information for each guideline for which an “out of compliance” finding is noted:
 - Guideline
 - Date exception began
 - Cause of exception
 - Date of resolution
 - Description of resolution
- Continued work with BNY to enhance reporting on compliance with investment guidelines.

Quarterly Investment Compliance Report Quarter Ending
12/31/2024

5

Asset Allocation Compliance Review (Exceptions Only)

Quarterly Investment Compliance Report Quarter Ending
12/31/2024

6

Exception Report

None – All asset classes in range.

Asset Allocation Compliance Report Overview

- If one (1) or more asset class falls outside the allowable range for that asset class as stated in Kentucky Retirement Systems' Investment Policy Statement, it will be noted in the Asset Allocation Compliance Review.
- Asset Allocation Compliance Report will look at the entire quarter.
- Reporting will include exceptions only.
- When an asset class exceeds or is less than the allowable range, the Quarterly Investment Compliance Report will include the following information for each asset class outside of the allowable range:
 - Asset class
 - Allowable range
 - Date exception began
 - Cause of exception
 - Date of resolution
 - Description of resolution

Quarterly Investment Compliance Report Quarter Ending
12/31/2024