

**Kentucky Retirement Systems
Investment Committee Meeting
November 10, 2022 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 | Legal Services |
| 3. | Roll Call | Sherry Rankin |
| 4. | Public Comment | Sherry Rankin |
| 5. | Approval of Minutes* - August 9, 2022 | Prewitt Lane |
| 6. | Quarterly Trust Budget | Steve Willer |
| 7. | Investment Review and Update* | Steve Willer |
| 8. | Investment Policy Statement Discussion* | Prewitt Lane |
| 9. | Investment Compliance Report | Jared Crawford |
| 10. | Staffing Update and Other Planning Issues | David Eager
Steve Willer |
| 11. | Adjourn* | Prewitt Lane |

** Committee Action May be Taken*

**MINUTES OF MEETING
KENTUCKY RETIREMENT SYSTEMS
INVESTMENT COMMITTEE MEETING
AUGUST 9, 2022, 10:00 A.M., E.T.
VIA LIVE VIDEO TELECONFERENCE**

At the August 9, 2022 meeting of the Kentucky Retirement Systems' (KRS) Investment Committee, the following Committee members were present: Prewitt Lane (Chair), John Cheshire, Lynn Hampton, David Adkins, and Pamela Thompson. Staff members present were David Eager, Victoria Hale, Kristen Coffey, Steve Willer, Joseph Gilbert, Jared Crawford, Ashley Gabbard, Phillip Cook, and Sherry Rankin. Also in attendance were Kentucky Retirement Systems' CEO John Chilton and County Employees Retirement System's (CERS) CEO Ed Owens, III, and KRS Trustees Ramsey Bova and William Summers, V. Others in attendance included David Lindberg, Craig Morton, and Chris Tessman with Wilshire Advisors, LLC.

Mr. Lane called the meeting to order.

Ms. Hale read the Legal Opening Statement.

Mr. Lane took a moment to express concern for all friends, retirees, and active members affected by the devastating flooding in Eastern Kentucky. He also congratulated Mr. Steve Willer and Mr. Anthony Chiu on their recent promotions.

Ms. Rankin took Roll Call.

There being no *Public Comment*, Mr. Lane introduced agenda item *Approval of Minutes – May 16, 2022*. Mr. Adkins made a motion and was seconded by Mr. Cheshire to approve the minutes as presented. The motion passed unanimously.

Mr. Lane introduced agenda item *Quarterly Trust Budget*. Mr. Steve Willer presented the Quarterly Trust Budget. Mr. Willer stated that this was the first year that KPPA budgeted trust expenditures. KPPA is required to report all investment expenses to the Public Pension Oversight Board (PPOB) by statute beginning November of 2022. In response, a working group was formed to discuss the Administrative Budget, as well as the Trust Budget. Mr. Willer advised that the Trust Budget will be reported to the CERS and KRS Investment Committees on a quarterly basis moving forward. The Trust Budget includes four main categories: consulting, legal, audit and contractual services. Mr. Willer stated that investment-related expenditures are paid directly from trust funds, but are not included in the administrative budget. Mr. Lane added that the working group discussed performance fees in detail and stated that it was difficult to establish a baseline for the line item. However, the working group was able to find a reasonable solution based on expected returns. Mr. Willer explained that high performance fees are indicative of outperformance well above and beyond benchmark thresholds and stated that the goal across all expenses is to minimize and get the most efficient use of the fees that are paid. Mr. Adkins commended Mr. Willer and the working group for compiling a great level of transparency. Mr. Adkins advised that members may not understand the context of the budgeted items; therefore, Mr. Adkins suggested that footnotes be added to include benchmarks and explanations. Mr. Willer agreed with the suggestion and stated that he will add footnotes moving forward to describe the services that each category provides. Mr. Eager also requested that important year-to-year changes also be footnoted. Next, Mr. Willer

commented on manager expenses. He reported that manager expenses are broken out by plan, by asset type, and then by fee type. Mr. Willer stated that Staff is very efficient in the use of fees and negotiates fees. Staff works to minimize fees by focusing on opportunities to bring assets in-house and to manage more assets by the Office of Investments Staff. Mr. Willer stated that private markets, private equity, specialty credits, and real estate are higher fee markets; whereas, public equities and core fixed income tend to be lower fee markets.

Mr. Lane introduced agenda item *Investment Review and Update*. Mr. Willer presented the Investment Review and Update. He stated that June was a difficult month for markets with rising rates and high inflation. There was deceleration in economic growth and concern whether or not growth would stabilize or increase, especially in the United States. Uncertainty has led to significant volatility across markets, stated Mr. Willer. Global equities were down about 8%, high-yield was down almost 7%, and core fixed income was down about 150 basis points. KERS Hazardous, KERS Nonhazardous, and SPRS all modestly underperformed their IPS benchmarks in June; resulting in underperformance and underweights in private equity and real estate allocations. This underperformance was offset by a strong performance in the specialty credit allocation. Ms. Bova asked what the management fee for the cash portfolio covers if the portfolio is managed internally. Mr. Willer stated that there is no fee for the cash portfolio and further reviewed the cash subcategories listed on page 7 of the meeting materials. Ms. Bova thanked Mr. Willer for the additional explanation. The KERS Nonhazardous portfolio was down 3.74%, KERS Hazardous was down 4.21%, and SPRS was down 2.92%. SPRS outperformed due to the overweight in cash which was a result of a general fund appropriation that was received in May of 2022. Mr. Willer presented the United States Fixed Income as of June 30, 2022 and reported that

fixed income had decreased by 10.3% which was a historic measure. High-yield bonds had also decreased by 12.8% and loans were down by 4.6%. Commodities, private equity, and real estate produced positive performance for the fiscal year, stated Mr. Willer. Next, the Total Fund Attribution was reviewed. Mr. Willer stated that all plans held up relatively well against their relative benchmarks and peer universe; the KERS Nonhazardous was down 5.19%, KERS Hazardous was down 5.95%, and SPRS was down 4.63%. Mr. Willer reported that asset allocation was a negative driver of performance for the fiscal year across plans. He stated that the largest positive contributors to performance in an asset allocation within an asset class were high-yield, specialty credit, and core fixed income. The Plan Sponsor Peer Group Analysis was also reviewed: multi-statistics including return, standard deviation, and sharpe ratio. Median performance estimates were down about 9% for the fiscal year. Ms. Hampton asked if there was a reason that the one-year sharpe ratio was significantly lower than the three-year and five-year sharpe ratio metrics. Mr. Willer explained that the dispersion among plans was larger in the one-year metric; as shorter periods of the sharpe ratio are used, the bands on the graph extend. Mr. Eager added that if the plan is in the top quartile each year for a five-year period due to performance, then over the five years the plan is likely to be in the top 5% within the five-year universe. Mr. Willer stated that the plans tend to be out of range with real estate and real return underweights and overweights in cash, specialty credit, and core fixed income. However, the main focus is moving towards the allocation targets, said Mr. Willer. He advised that the Office of Investments has shifted away from commodity only mandates and are working to move to a multi-asset and inflation sensitive type of mandate which relies on inflation as a driver. This change would allow more capital to be deployed quickly, stated Mr. Willer. Mr. Adkins asked who sets the asset allocation targets, what the consequences are for not hitting or maintaining the targets, and who approves deviations from the

targets. Mr. Willer advised that the CERS and KRS Investment Committees are responsible for setting the asset allocation targets and ranges. These guidelines are found in the Investment Policy Statements (IPS) which have been approved by the Investment Committees and ratified by their Board. Further, Mr. Willer assured Mr. Adkins that any deviations have been approved by the Investment Committee. Mr. Adkins asked if there is a set lifespan of these approved targets. Mr. Willer advised that there is no set lifespan; however, they are reviewed at least annually with revisions to capital market assumptions and efficient frontier analysis. Mr. Willer stated that the targets can change formally within the IPS and that there have been revisions to the IPS allocation targets and ranges in the past. Mr. Summers added that based on his experience, asset allocations are typically set for a 12-month period and are reevaluated if the allocations are not in range and or yielding the amount of return desired. Mr. Summers expressed the importance of being within the established asset allocation ranges. Mr. Eager reiterated that the managers do not make the decisions to amend the allocation ranges and targets. Mr. Lane advised that KRS does not operate on a 12-month window and that the expected returns are typically modeled out to 10 years. Further, Mr. Lane stated that the KRS Investment Committee and Investment Staff have made tactical decisions in the past and have a plan in place for the asset allocations that are out of range. Ms. Victoria Hale with the Office of Legal Services, advised that the KRS Investment Policy Statement states that "...the Board recognizes that each plan and any underlying fund have their own capacity to tolerate investment volatility or risk. The asset allocation guidelines of each fund will be reviewed annually..." In summary, the asset allocation must be reviewed at least annually, however, the Board or Investment Committee may choose to do so more often. Additionally, the KRS IPS states that "...the individual asset allocations of each pension and insurance fund constituent will be reviewed monthly by Staff relative to its target and asset allocation," said Ms.

Hale. Mr. Willer stated that Staff reviews the allocations on a daily basis. Mr. Lane thanked Mr. Willer and stated that the presentation was a great review and educational regarding asset allocations.

Mr. Lane introduced agenda item *Investment Compliance Report*. Mr. Jared Crawford, Investment Research Officer and Compliance Officer, presented the Investment Compliance Report for the quarter ending June 30, 2022. Mr. Crawford stated that the report is a work-in-progress and welcomed feedback from the Investment Committee. He reviewed the various visual aids and graphics in the report illustrating plan asset allocations and their targets. Mr. Crawford stated that he receives a compliance report daily. The only area not in compliance was the S&P 500 portfolio due to fractional shares held. Mr. Crawford suggested that a de minimus rule be established for exceptions. Mr. Joseph Gilbert advised that he is able to clean up these fractional shares via BNY Mellon. Mr. Lane thanked Mr. Crawford for his due diligence in ensuring that Trustees understand asset allocation clearly and efficiently.

Mr. Lane introduced agenda item *Staffing Update*. Mr. Willer provided an update on staffing within the KPPA Office of Investments. He announced that he is working with KPPA Human Resources and the Governor's Office on the development of new positions within the Division i.e. Senior Investment Analyst and an Investment Analyst. Mr. Willer believes three to four individuals could be hired for those roles to provide support across asset classes and functions. Mr. Willer stated that recruiting has been challenging and it will take time to fill these roles with the right candidates. Mr. Eager added that a search has begun for a Chief Financial Officer (CFO).

Ms. Hampton asked about rescheduling the November Investment Committee meeting to allow the Office of Investments more time to prepare. Mr. Eager stated that the change to the schedule would need to be voted on at a Board meeting to amend the schedule. Mr. Eager agreed to look at the schedule to determine if rescheduling is needed. Ms. Hale advised that the Chair may cancel the scheduled meeting and call a special called meeting to avoid the Board vote. Mr. Cheshire stated that rescheduling often causes attendance issues among Trustees who have planned their other engagements around the set calendar of meetings. It was agreed to not reschedule the meeting at this time.

There being no further business, Ms. Hampton made a motion and was seconded by Mr. Cheshire to adjourn the meeting. Copies of all documents presented are incorporated as part of the minutes of the Kentucky Retirement Systems Investment Committee meeting held August 9, 2022.

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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 August 9, 2022 were approved by the Kentucky Retirement Systems Investment Committee on November 10, 2022.

Committee Chair

I have reviewed the Minutes of the Kentucky Retirement Systems Investment Committee Meeting on August 9, 2022 for form, content, and legality.

Office of Legal Services

KRS Investment Committee Meeting - Quarterly Trust Budget

TRUST BUDGET

Account Name	2019	2020	2021	2022	Proposed Trust Budget FY 2023	Q1 FY 2023 (through 9/30/2022)
CONSULTING SERVICES						
Wilshire Associates	1,021,799	1,238,170	1,225,671	1,021,175	1,190,000	288,972
Albourne					270,000	104,250
MercerInsight					160,000	
SUBTOTAL					1,620,000	
LEGAL & AUDITING SERVICES						
Faegre Drinker			96,039	202,502	375,000	3,545
Intelligent Management Solutions (IMS)	620,001	202,140	155,701	69,884	75,000	73,859
McClain/Goldberg			891	0	25,000	
Reinhart	317,909	671,269	663,689	619,509	437,500	23,623
Stoll-Keenon-Ogden	10,314	135,353	254,211	463,560	250,000	89,384
Haystack				0	140,000	
Umberg Zipser			289,101	498,058	360,000	44,952
Frost Brown Todd					50,000	
Miscellaneous					200,000	
SUBTOTAL					1,912,500	
CONTRACTURAL SERVICES						
Bloomberg	68,722	71,810	98,164	102,243	150,000	25,712
BNYM Custodial Fees	2,056,390	2,088,475	2,379,838	2,565,169	4,000,000	568,625
eVestment (Solovis RMS)				30,000	35,000	33,800
Solovis (Reporting & Analytics)				245,000	265,000	257,250
FactSet	222,476	162,295	109,662	140,098	150,000	30,440
Russell Index Subscription	1,075	1,250	1,000	1,000	1,500	250
S&P Global		94,500	26,250	68,250	75,000	
TradeWeb				6,000	7,500	1,200
State Street/Elkins McSherry	10,000	5,000	15,000	10,000	10,000	5,000
ISS	32,050	32,050	28,288	35,813	37,000	4,250
MSCI	1,000	1,000	1,000	1,000	1,000	1,000
KPMG Tax Guarantor Services		7,606	22,050	7,350	7,500	
Jayant Ghevaria and CO		10,050		52,085	55,000	
India Renewal Fee (SEBI)				3,000	3,000	
Miscellaneous & New Services				0	250,000	
SUBTOTAL					5,047,500	

TRUST BUDGET

Account Name	2019	2020	2021	2022	Proposed Trust Budget FY 2023	Q1 FY 2023 (through 9/30/2022)
INACTIVE CONTRACTURAL SERVICES						
Dean Dorton	9,719				0	250
Hirschler		4,794			0	
INFORMA	12,904				0	
Lighthouse Solutions	3,093				0	
London Stock Exchange GBP (GREAT BRITISH POUNDS)	6,467	3,544			0	
Deutsche Bank Trust	3,000		3,000		0	
Morris James LLP	94,192	20,154			0	
Calcaterra Pollack Manatt		90,798	1,200,000	30,757	0	
ORG	162,344				0	
TOTAL	4,653,455	4,576,660	6,251,845	6,459,875	8,580,000	1,556,362

KRS Investment Committee Meeting - Quarterly Trust Budget

TRUST 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
Reinhart	Bay Hills counsel
Stoll-Keenon-Ogden	Mayberry counsel
Haystack	Conduct Mayberry eDiscovery
Umberg Zipser	PAAMCO-Prisma (California litigation)
Frost Brown Todd	Currently has no investment-related cases
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

Kentucky Retirement Systems

Investment Review and Update

Quarter Ending: September 30, 2022

Kentucky Retirement Systems

Economic and Market Update

Quarter Ending: September 30, 2022

Asset Class Performance

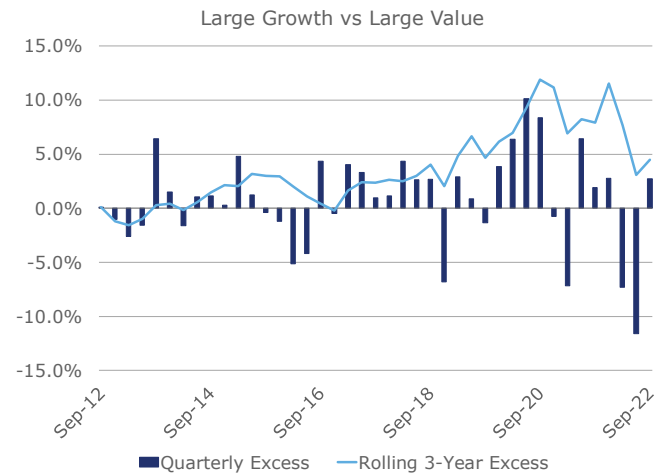
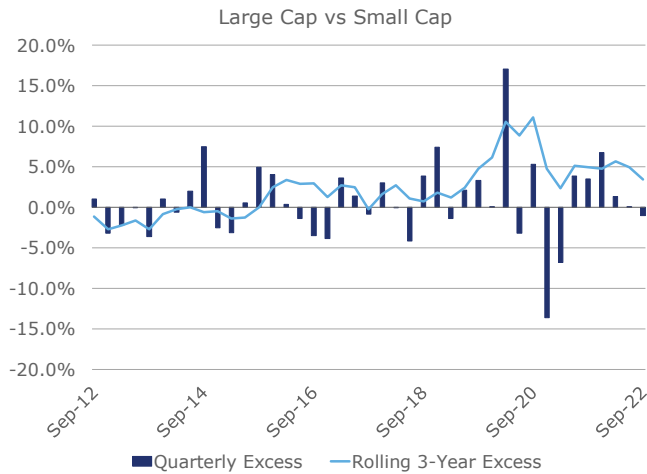
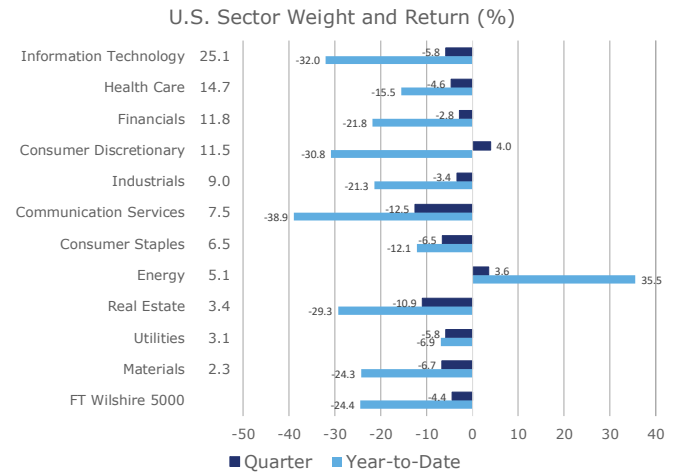
Asset Class Returns - Best to Worst						Annualized 5-Year as of 9/22
2017	2018	2019	2020	2021	2022 YTD	
Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 13.6%	U.S. Equity 8.8%
Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 0.4%	Commodities 7.0%
U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	U.S. TIPS -13.6%	REITs 2.9%
High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	Core Bond -14.6%	U.S. TIPS 2.0%
REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	High Yield -14.7%	High Yield 1.6%
Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	U.S. Equity -24.4%	T-Bills 1.1%
U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	Developed -26.8%	Core Bond -0.3%
Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -26.9%	Developed -0.4%
T-Bills 0.8%	Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -29.7%	Emrg Mrkts -1.4%

Data Sources: Bloomberg

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

U.S. Equity Market

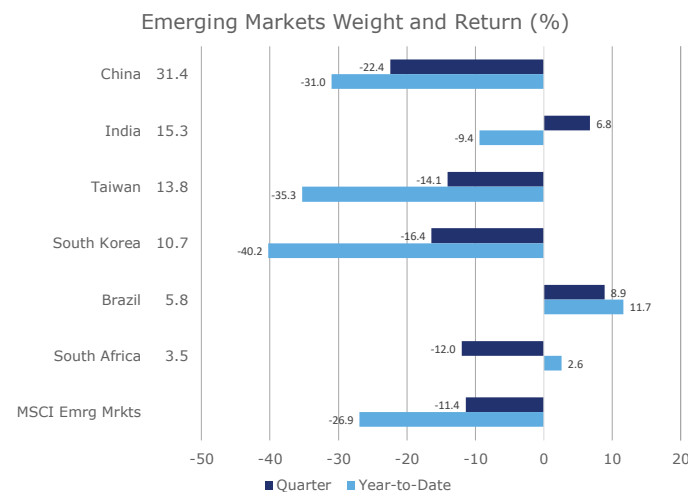
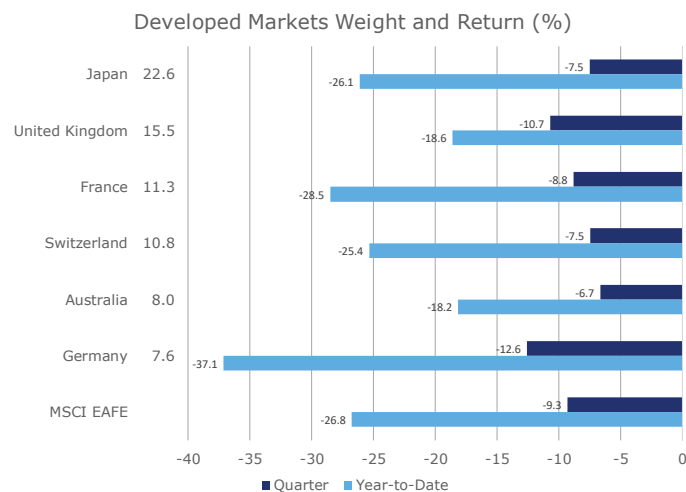
As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	-4.4	-24.4	-17.2	8.1	8.8	11.5
Wilshire U.S. Large Cap	-4.5	-24.4	-16.6	8.4	9.3	11.8
Wilshire U.S. Small Cap	-3.5	-24.6	-22.1	4.8	4.2	9.2
Wilshire U.S. Large Growth	-3.3	-30.1	-22.0	10.7	11.4	13.4
Wilshire U.S. Large Value	-5.8	-16.9	-9.8	6.0	7.2	10.1
Wilshire U.S. Small Growth	-2.0	-28.2	-26.9	4.1	4.5	9.3
Wilshire U.S. Small Value	-4.9	-21.1	-17.3	5.4	3.8	8.9
Wilshire REIT Index	-10.2	-29.7	-17.6	-2.2	2.9	6.1
MSCI USA Min. Vol. Index	-5.4	-17.3	-8.7	2.9	7.7	10.7
FTSE RAFI U.S. 1000 Index	-5.7	-17.7	-10.3	8.2	7.9	11.1



Data Sources: Bloomberg, Wilshire Atlas

Non-U.S. Equity Market

As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	-9.8	-26.2	-24.8	-1.1	-0.3	3.5
MSCI EAFE (\$G)	-9.3	-26.8	-24.7	-1.4	-0.4	4.2
MSCI Emerging Markets (\$G)	-11.4	-26.9	-27.8	-1.7	-1.4	1.4
MSCI Frontier Markets (\$G)	-8.6	-24.8	-23.3	-6.4	-4.6	-0.1
MSCI ACWI ex-US Growth (\$G)	-9.3	-31.6	-30.0	-1.1	0.5	4.3
MSCI ACWI ex-US Value (\$G)	-10.1	-21.1	-20.1	-1.3	-1.4	2.8
MSCI ACWI ex-US Small (\$G)	-8.2	-29.1	-28.6	0.8	-0.2	4.8
MSCI ACWI Minimum Volatility	-5.9	-16.9	-11.6	0.4	4.5	7.4
MSCI EAFE Minimum Volatility	-9.3	-24.1	-22.2	-5.0	-1.1	3.9
FTSE RAFI Developed ex-US	-10.1	-23.1	-21.1	-0.4	-0.8	3.9
MSCI EAFE LC (G)	-3.5	-14.1	-10.7	3.0	3.3	7.9
MSCI Emerging Markets LC (G)	-8.0	-20.5	-21.1	1.4	1.5	4.8

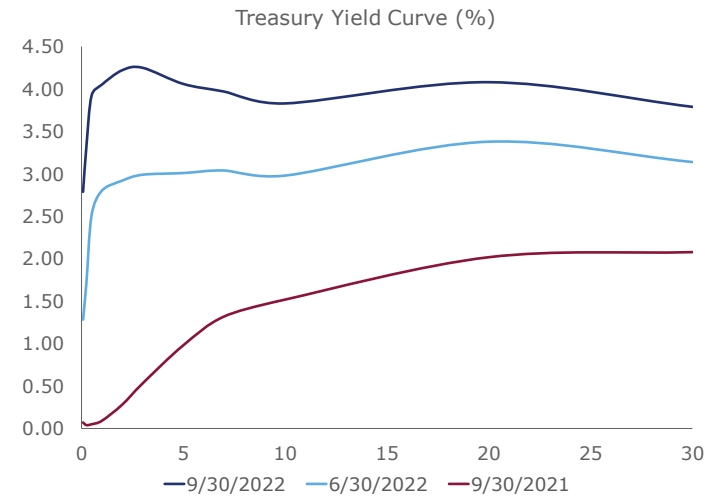
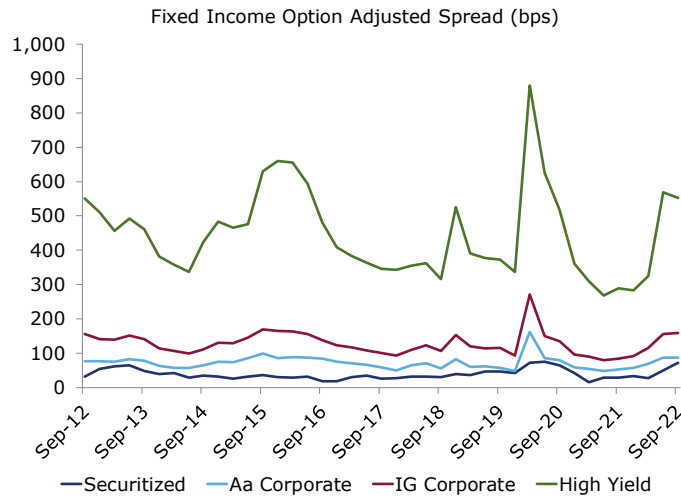


Data Sources: Bloomberg

U.S. Fixed Income

As of 9/30/2022	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.8	6.2	-4.8	-14.6	-14.6	-3.3	-0.3	0.9
Bloomberg Treasury	4.1	6.1	-4.3	-13.1	-12.9	-3.1	-0.2	0.5
Bloomberg Gov't-Rel.	4.7	5.1	-3.9	-12.7	-12.7	-2.9	0.0	1.0
Bloomberg Securitized	4.9	5.8	-5.2	-13.4	-13.8	-3.5	-0.8	0.6
Bloomberg Corporate	5.7	7.1	-5.1	-18.7	-18.5	-3.7	0.0	1.7
Bloomberg LT Gov't/Credit	5.0	14.3	-9.0	-28.9	-27.4	-7.3	-1.2	1.4
Bloomberg LT Treasury	4.0	16.3	-9.6	-28.8	-26.6	-8.5	-1.6	0.6
Bloomberg LT Gov't-Rel.	5.7	11.6	-7.9	-25.8	-24.4	-7.2	-1.3	1.4
Bloomberg LT Corporate	5.9	12.8	-8.7	-29.4	-28.4	-7.0	-1.1	1.8
Bloomberg U.S. TIPS *	3.8	7.8	-5.1	-13.6	-11.6	0.8	2.0	1.0
Bloomberg High Yield	9.7	4.1	-0.6	-14.7	-14.1	-0.5	1.6	3.9
S&P/LSTA Leveraged Loan	8.0	0.3	1.4	-3.3	-2.5	2.2	3.0	3.5
Treasury Bills	3.2	0.3	0.4	0.4	0.4	0.6	1.1	0.7

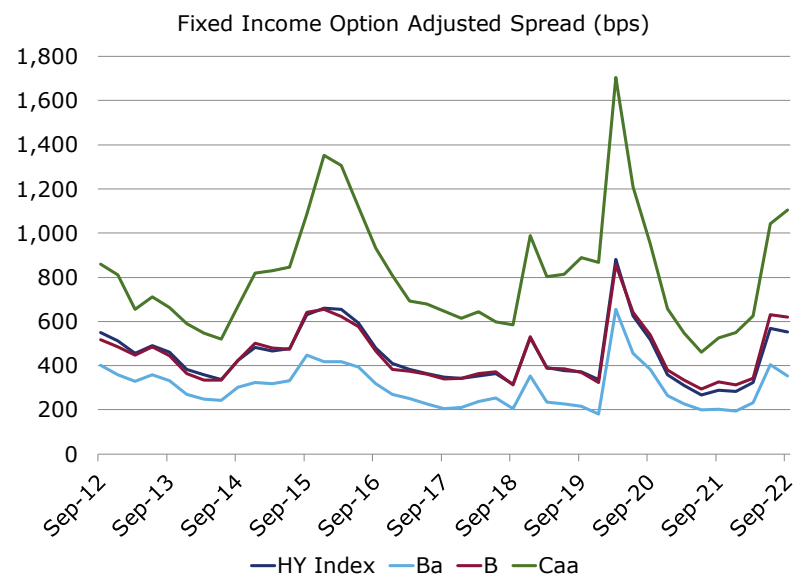
* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index



Data Sources: Bloomberg

High Yield Bond Market

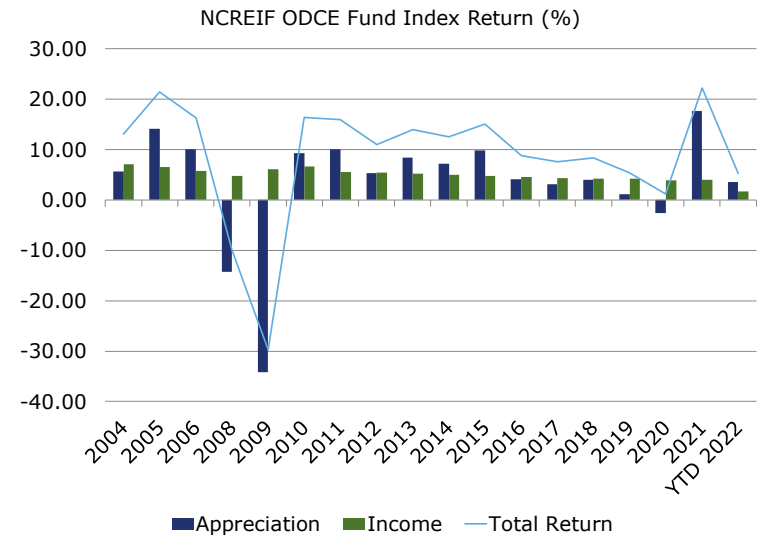
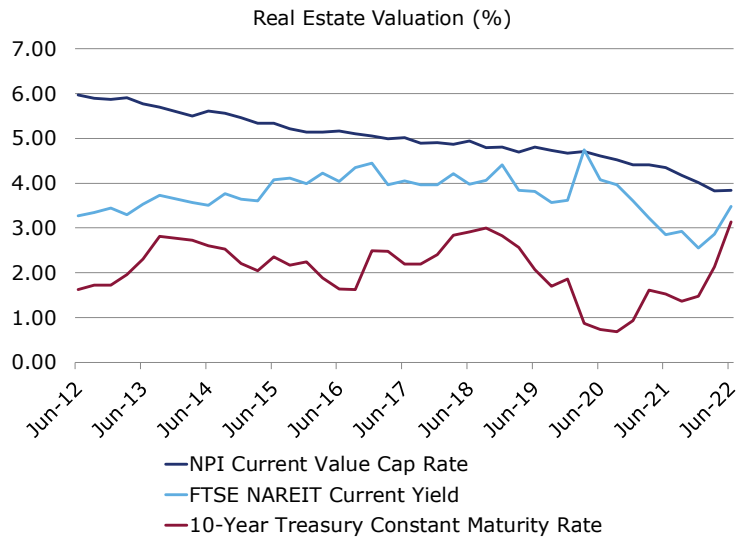
As of 9/30/2022		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		9.7	-0.6	-14.7	-14.1	-0.5	1.6	3.9
S&P LSTA Leveraged Loan		8.0	1.3	-4.3	-3.9	1.4	2.5	3.0
High Yield Quality Distribution	Weight							
Ba U.S. High Yield	51.6%	7.8	-0.7	-14.5	-13.8	0.3	2.2	4.2
B U.S. High Yield	36.7%	10.2	-0.7	-14.5	-13.8	-1.3	1.3	3.5
Caa U.S. High Yield	10.9%	15.2	-0.4	-16.7	-16.3	-1.4	-0.3	3.7
Ca to D U.S. High Yield	0.7%	34.0	-3.0	-21.3	-31.5	-5.6	-2.0	-5.6



Data Sources: Bloomberg

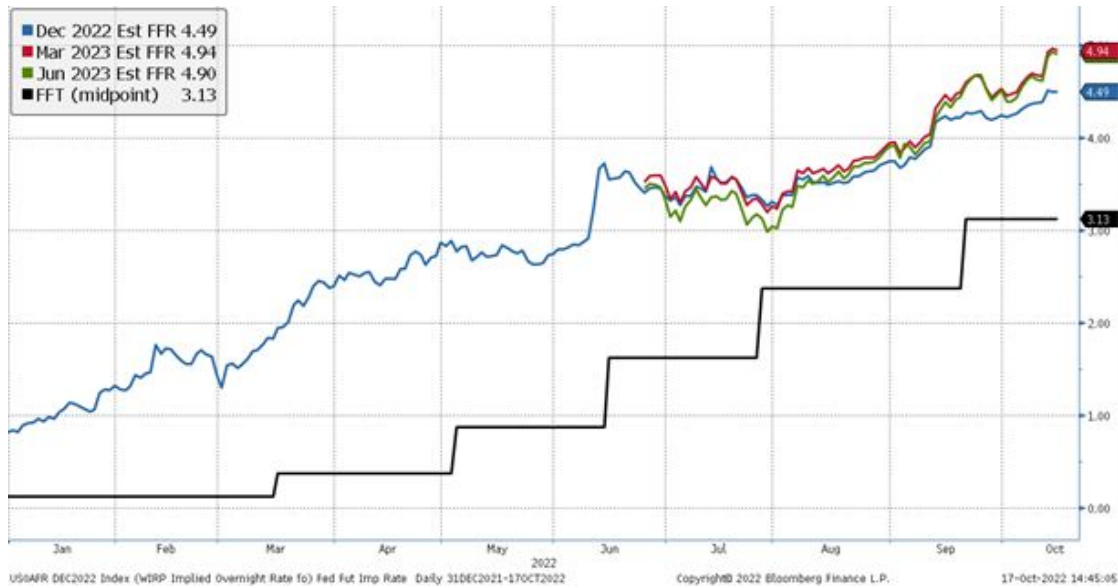
Real Assets

As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-5.1	-13.6	-11.6	0.8	2.0	1.0
Bloomberg Commodity Index	-4.1	13.6	11.8	13.5	7.0	-2.1
Bloomberg Gold Index	-7.9	-9.3	-5.7	2.8	4.2	-1.5
Wilshire Global RESI Index	-11.2	-29.4	-20.1	-4.3	1.0	4.6
NCREIF ODCE Fund Index	0.5	13.1	22.1	12.4	10.2	10.9
NCREIF Timberland Index	2.4	7.6	12.5	5.8	4.7	5.9
FTSE Global Core Infrastructure 50/50	-8.9	-12.3	-5.5	0.6	4.1	7.3
Alerian Midstream Energy	-1.0	12.1	11.7	6.7	5.0	n.a.
Bitcoin	3.7	-58.1	-55.3	33.1	36.0	108.7

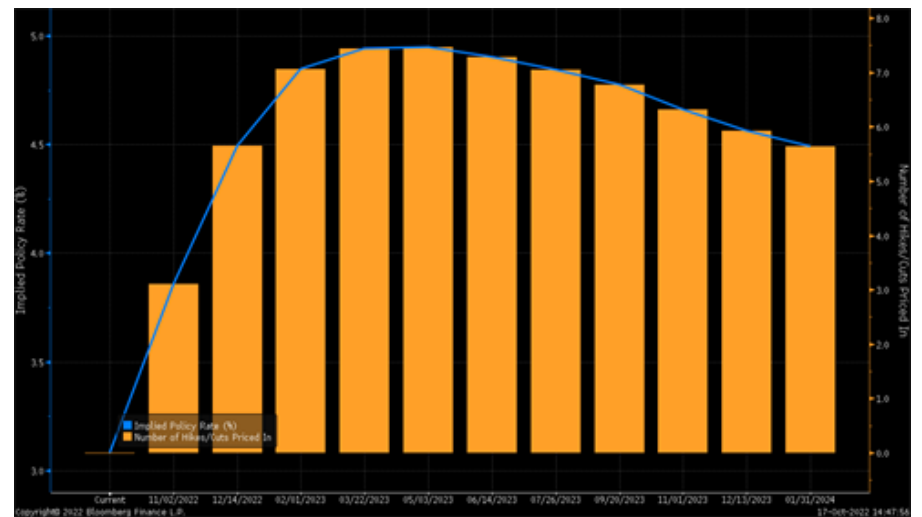


Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

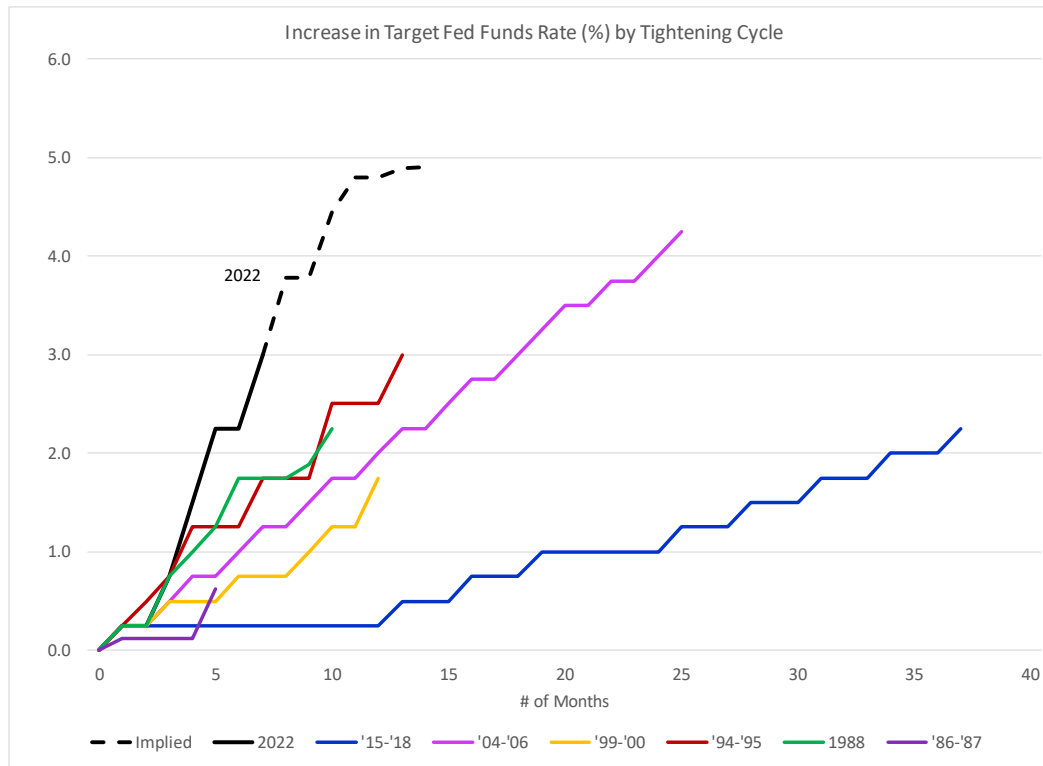
Center Stage: Fed Actions & Expectations



Data Source: Bloomberg



Most Aggressive Tightening in Modern Era... When/If it Bites, It Might Hurt



“While higher interest rates, slower growth, and softer labor market conditions will bring down inflation, they will also bring some pain to households and businesses. These are the unfortunate costs of reducing inflation. But a failure to restore price stability would mean far greater pain.”

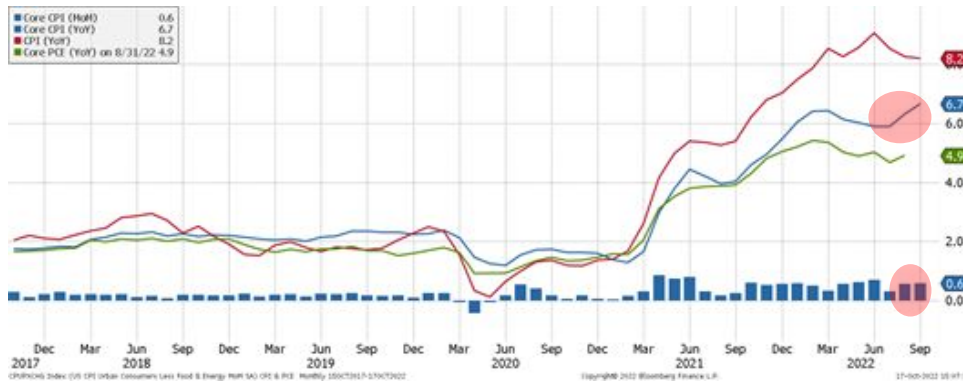


Jerome Powell

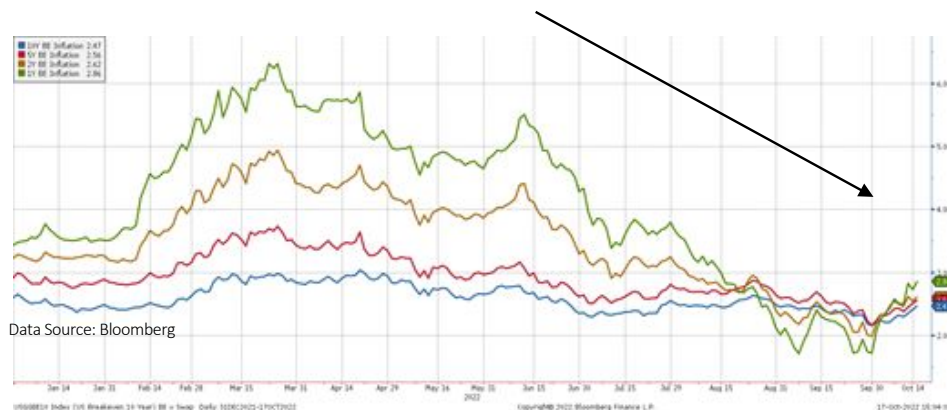
August 2022, Jackson Hole

Data Source: Bloomberg

The Fed's Dashboard: Realized & Expected Inflation

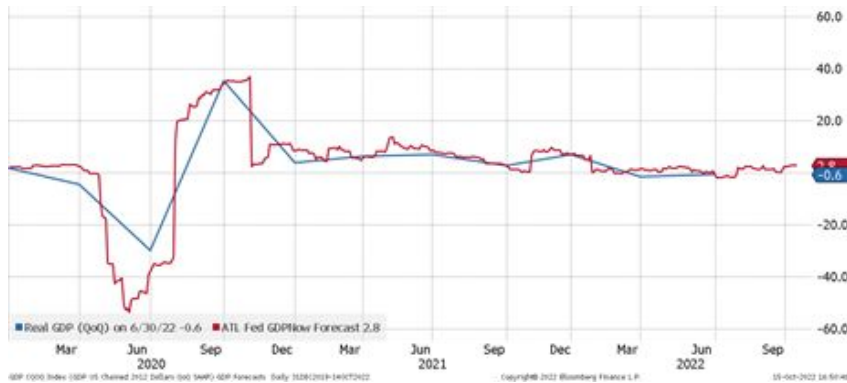


- Realized inflation remains stubbornly high
 - Sept & Oct Core CPI exceeded expectations
 - Core CPI (YoY) has ticked higher in recent months (as we anticipated last quarter)
 - Wage inflation & labor market imbalances add to inflation persistency/stickiness



- Inflation expectations have come down
 - Suggests that inflation anchoring at high levels may not yet be fully entrenched in consumer/business sentiment
 - Expectational anchoring at higher-levels would make the Fed's job even more challenging

The Fed's Dashboard: Economic Growth & Labor Market

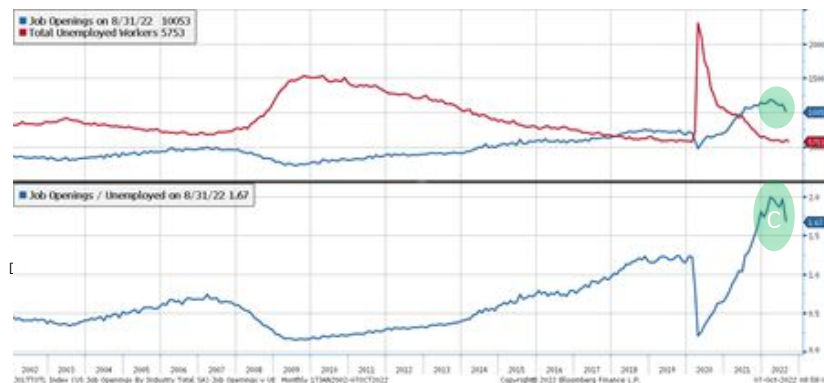


- The odds of a “soft landing” diminish as inflation persists (as the Fed is pressured to tighten aggressively)
 - Potential outcome may be somewhere between a hard and soft landing
 - Powell’s “Sully” Sullenberger moment...



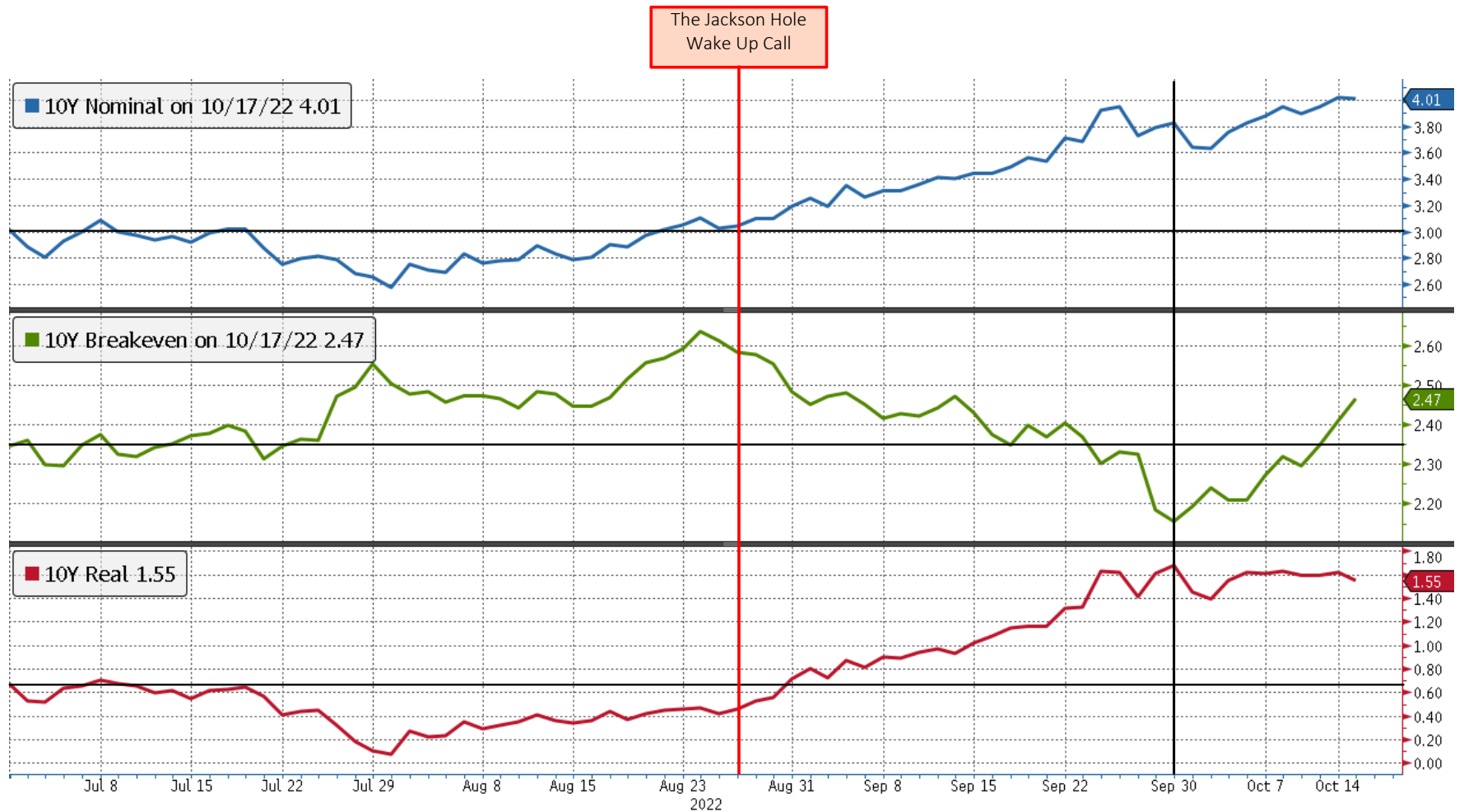
“We’re going to be in the Hudson”

Chesley Burnett "Sully" Sullenberger III
Pilot of US Airways 1549, January 15, 2009



- Labor markets remain historically tight
 - Difficult to see inflation pressures easing to acceptable levels without these tensions reversing
 - Recent jobs reports remain strong (good news is bad news as it relates to the Fed’s current objectives)

Rate Moves (10Y Nominal, Real & BEI)



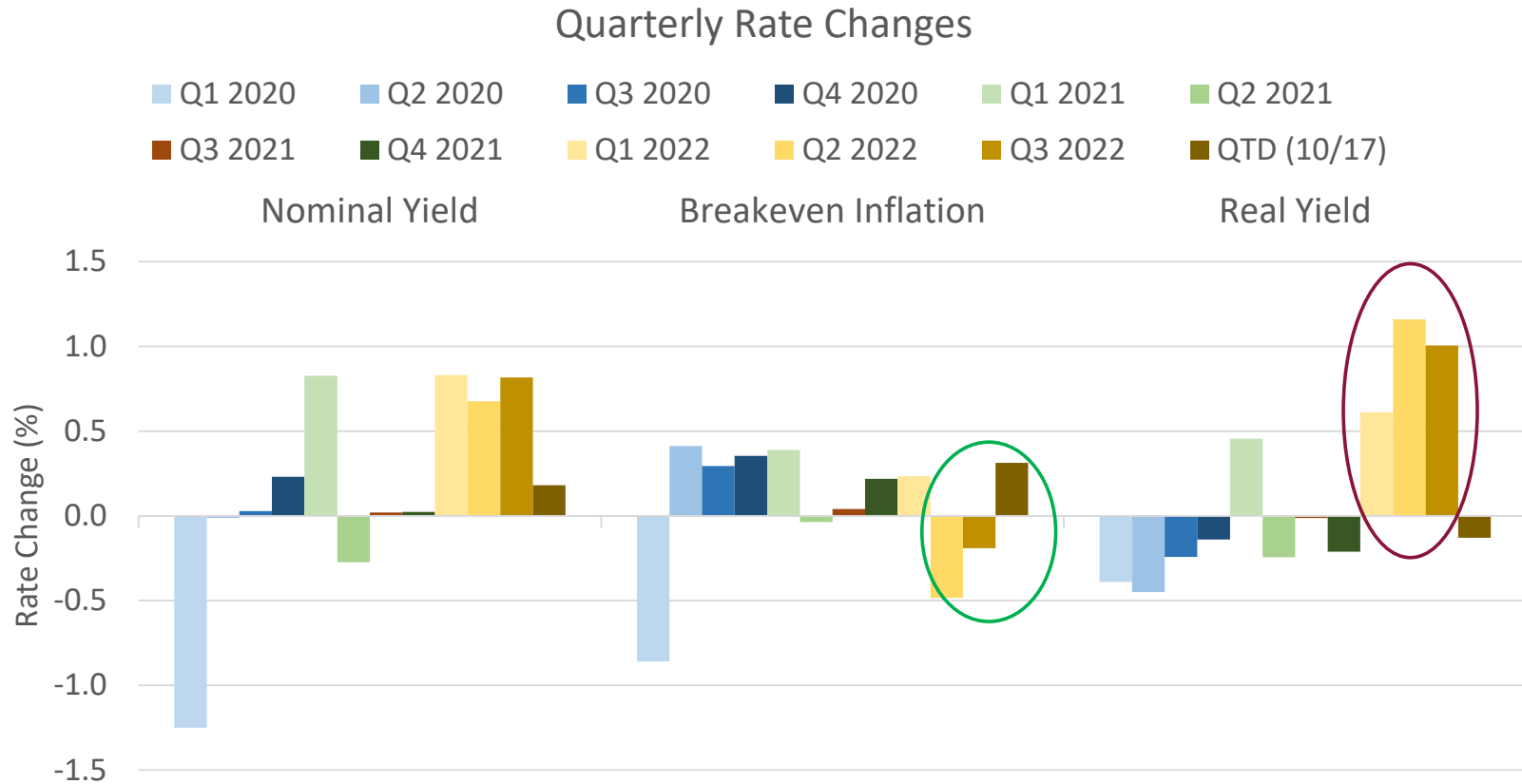
USGG10YR Index (US Generic Govt 10 Yr) 10yr Splits Daily 30JUN2022-17OCT2022

Copyright© 2022 Bloomberg Finance L.P.

17-Oct-2022 15:18:33

Data Source: Bloomberg

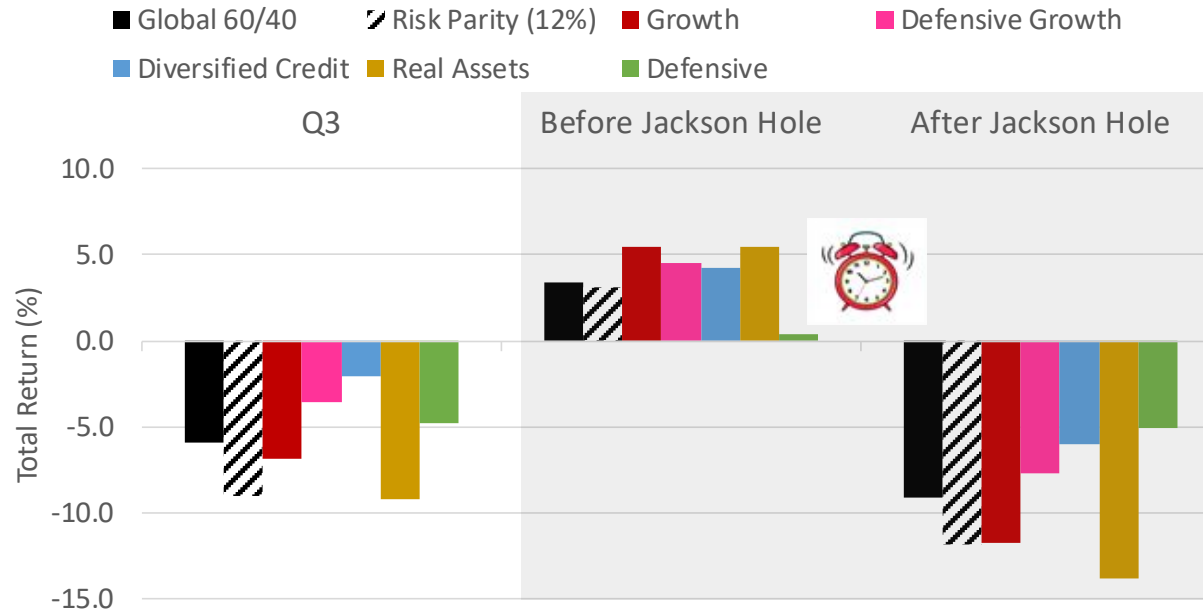
Rate Changes (2020 – YTD 2022) – Tightening the screws..



Data Source: Bloomberg

Q3 Market Returns: Before & After Jackson Hole

Asset Allocation & Thematic Returns



	Q3	Before Jackson Hole	After Jackson Hole
Global 60/40	(5.94)	3.44	(9.07)
Risk Parity (12%)	(9.03)	3.14	(11.80)
Growth	(6.82)	5.51	(11.68)
Defensive Growth	(3.54)	4.54	(7.73)
Diversified Credit	(2.03)	4.23	(6.01)
Real Assets	(9.14)	5.42	(13.81)
Defensive	(4.75)	0.36	(5.10)

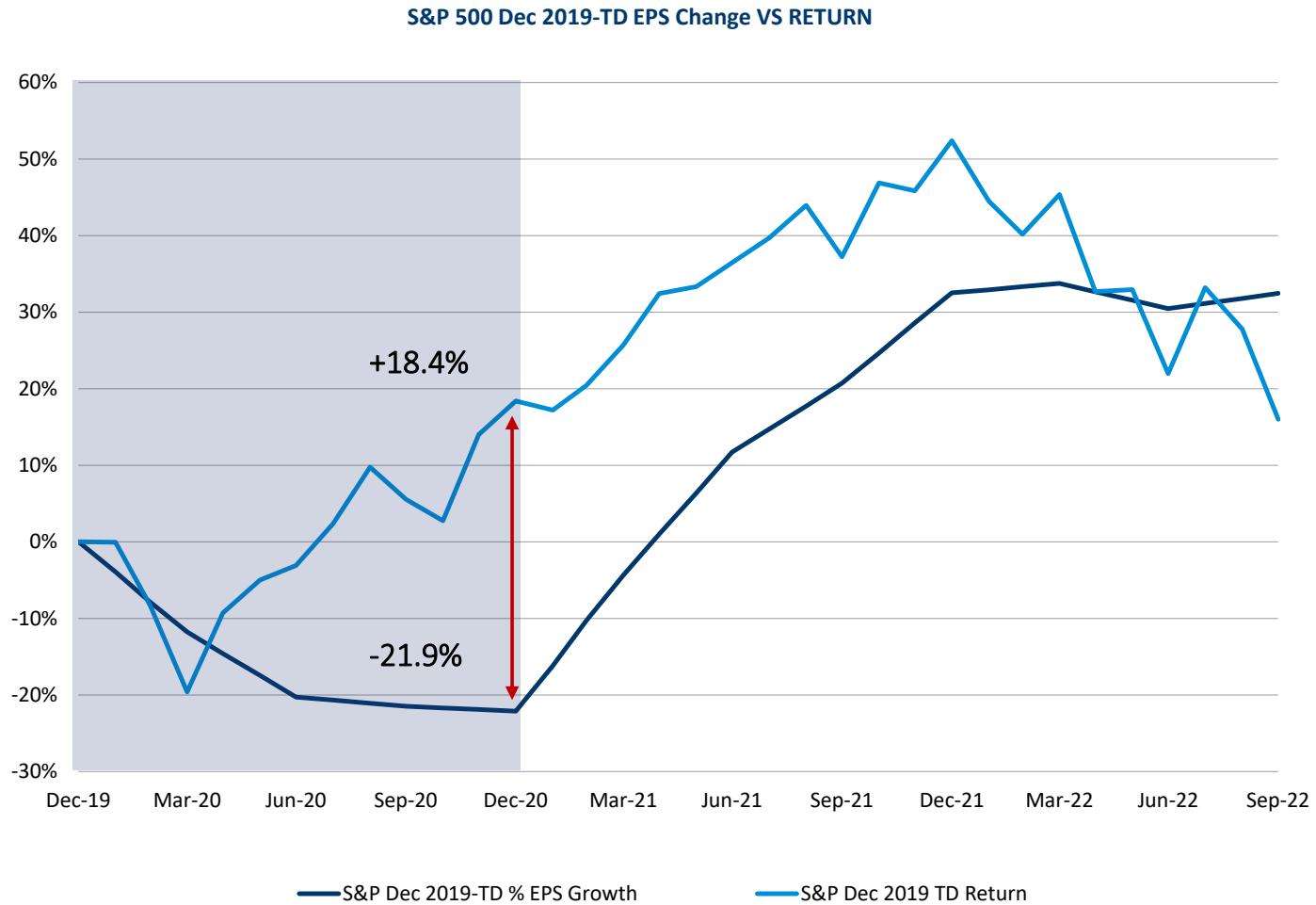
Data Source: Bloomberg, Wilshire

Liquidity/Rates-driven Market: Plenty of downside left if fundamentals deteriorate



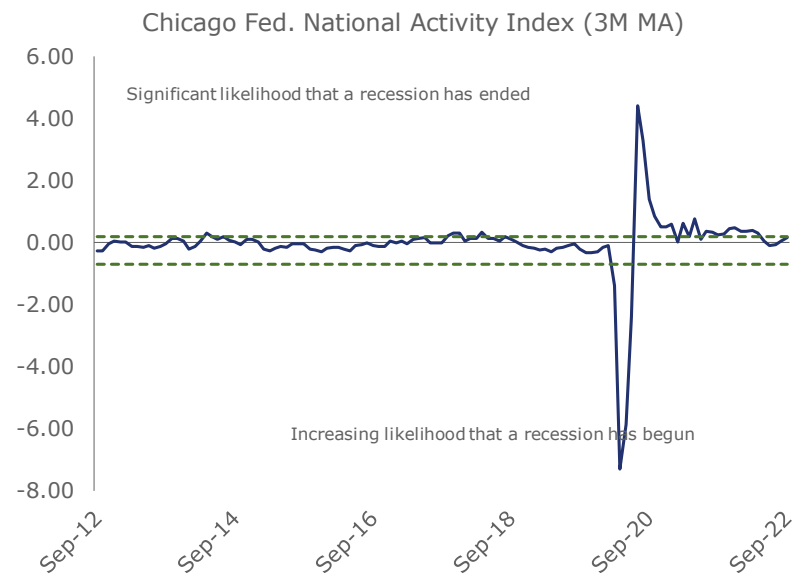
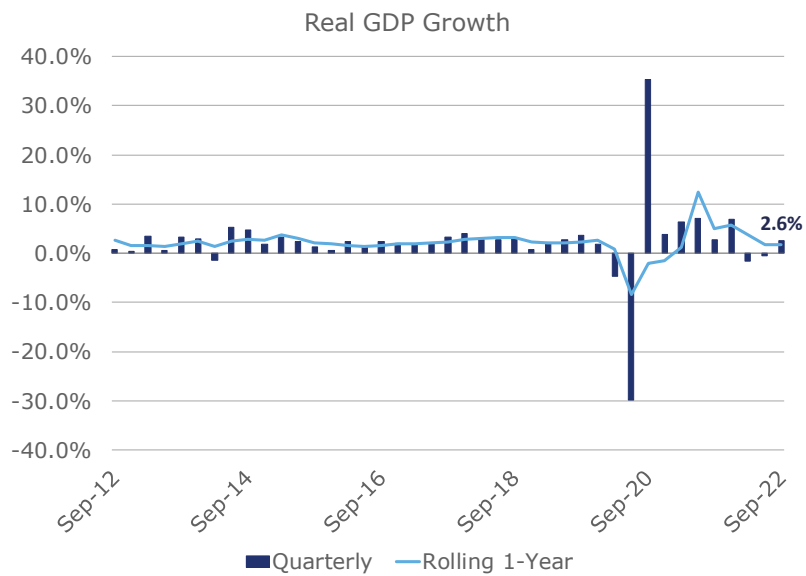
Data Source: Bloomberg

EPS Growth since Dec 2020 (prices down as growth stalls)



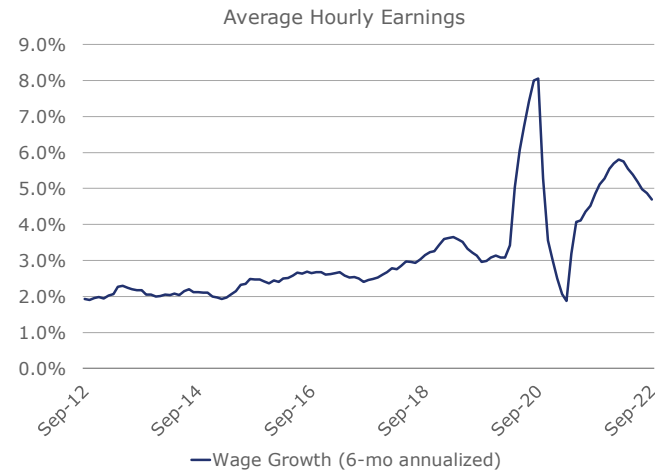
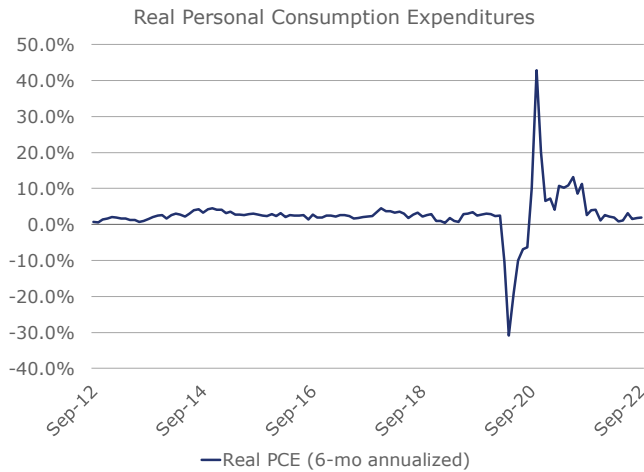
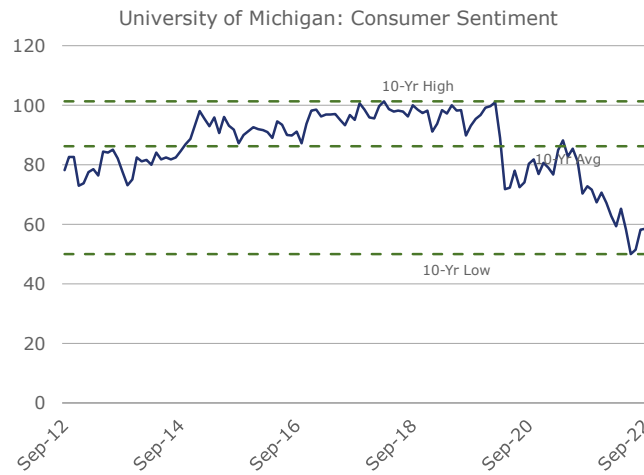
Data Source: Bloomberg

Economic Growth



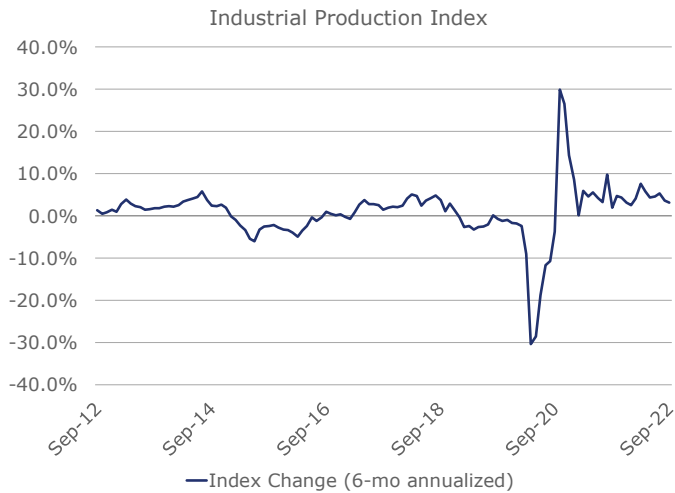
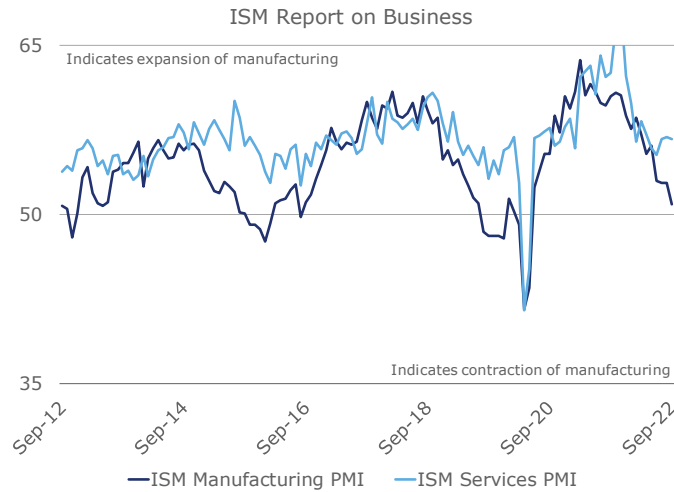
Data Sources: Bloomberg

Consumer Activity



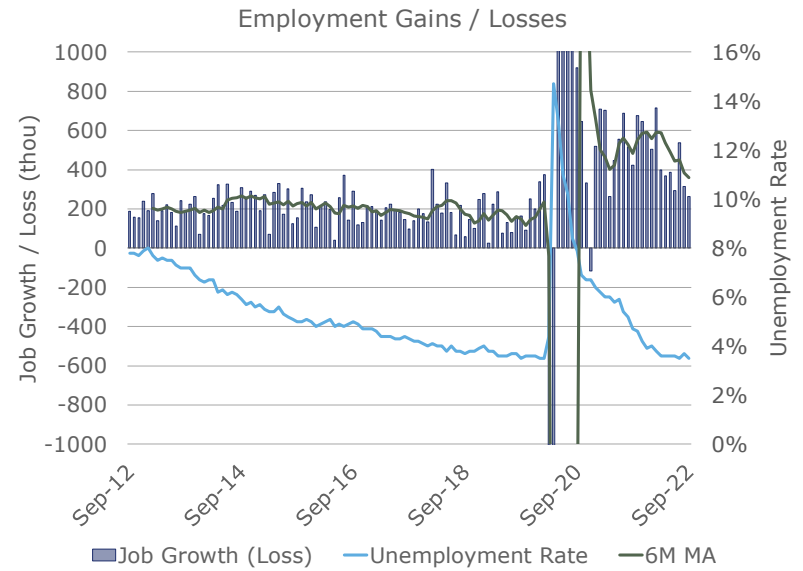
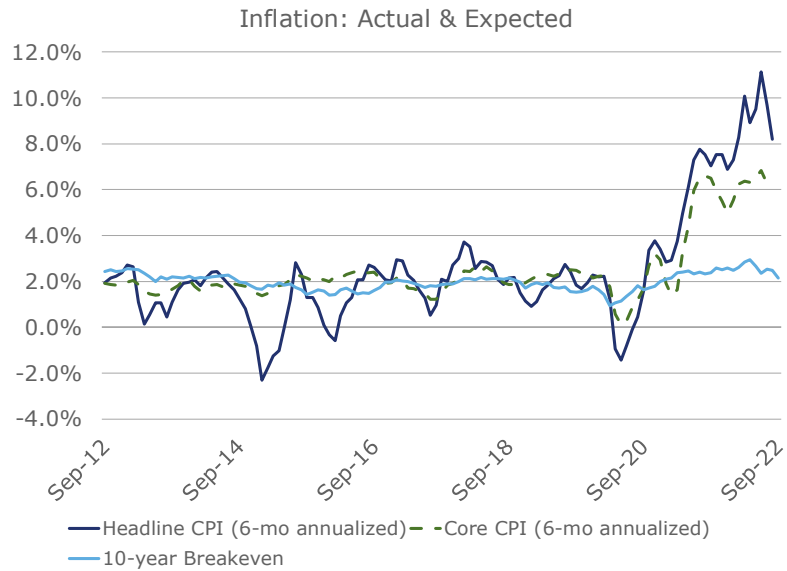
Data Sources: Bloomberg

Business Activity



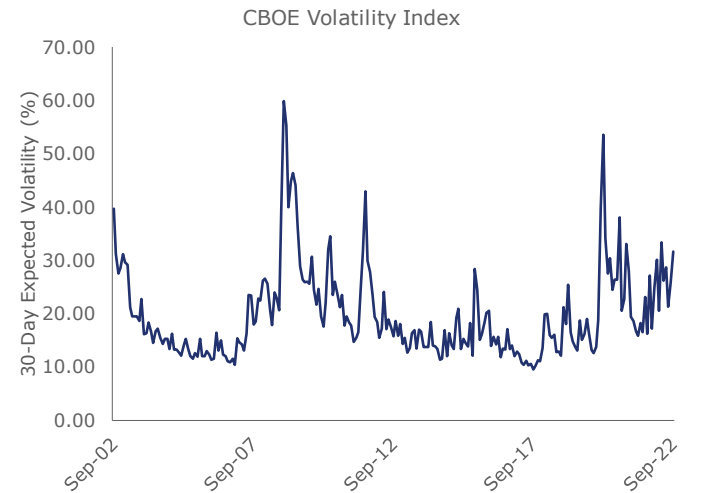
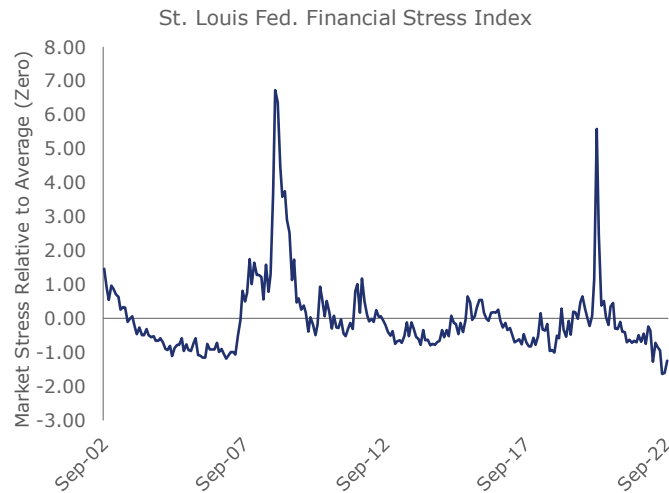
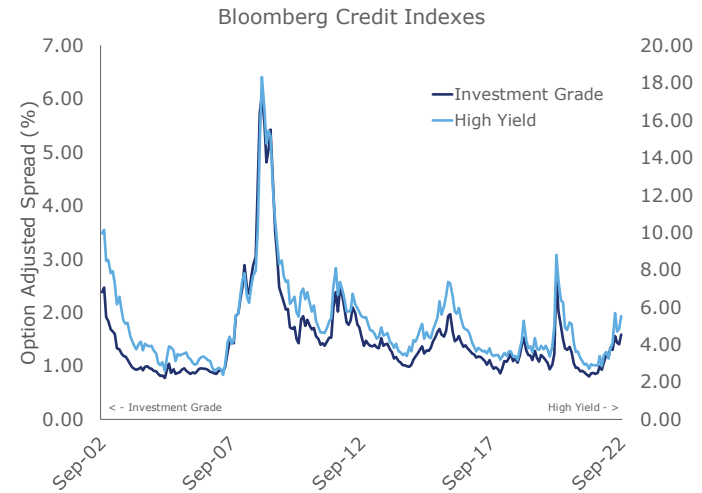
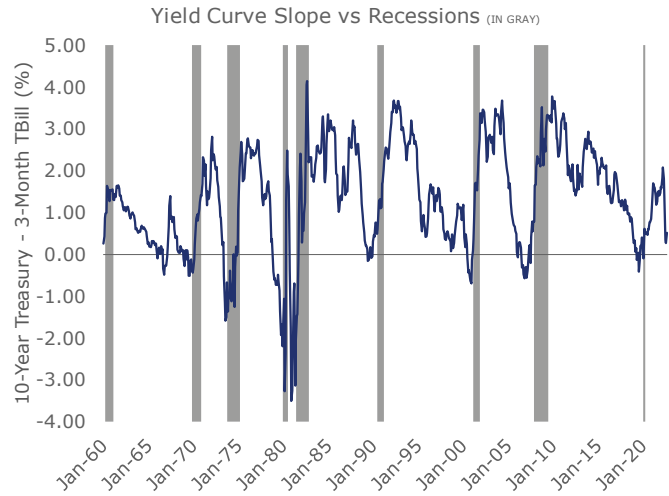
Data Sources: Bloomberg

Inflation and Employment



Data Sources: Bloomberg

Risk Monitor



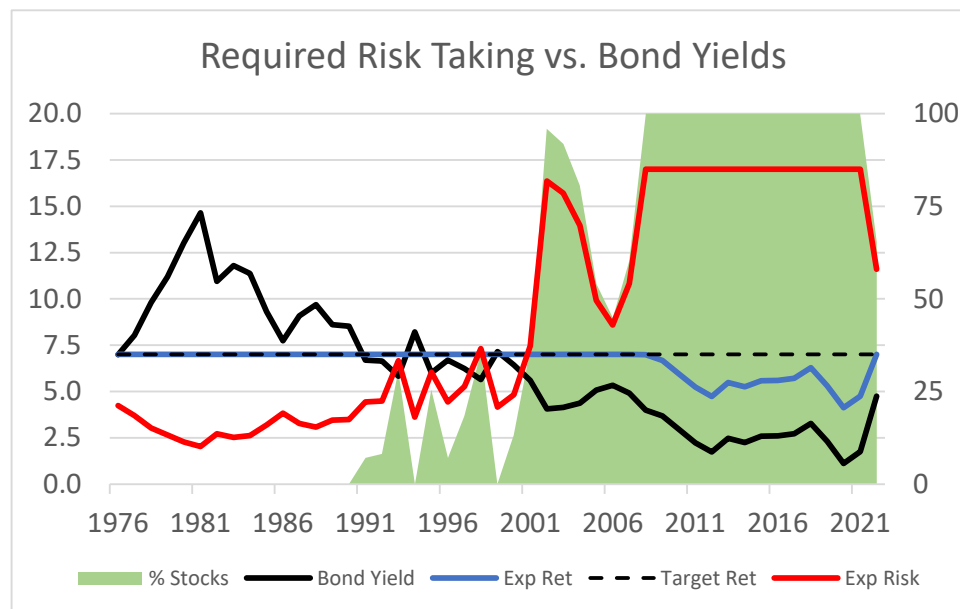
Data Sources: Bloomberg

September 2022 Asset Class Assumptions

	Equity						Fixed Income					Real Assets						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Comdty	Real Assets	US CPI
Compound Return (%)	6.75	7.50	7.75	7.85	7.30	10.25	3.65	4.90	5.10	4.05	6.85	2.85	5.65	5.80	6.35	5.90	7.05	2.25
Expected Risk (%)	17.00	18.00	26.00	19.10	17.10	28.00	0.75	4.25	8.90	6.00	10.00	4.25	17.50	16.45	14.00	16.00	10.35	1.75
Cash Yield (%)	1.80	3.45	2.95	3.30	2.40	0.00	3.65	5.10	5.20	4.30	9.65	3.50	3.95	3.95	2.30	3.65	2.75	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.85	-2.25	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.80	0.00
Inflation Exposure	-3.00	0.00	5.00	1.50	-1.25	-3.80	0.00	-2.50	-6.70	2.50	-1.00	-3.00	1.00	1.80	1.00	12.00	4.85	1.00
Correlations																		
US Stock	1.00																	
Dev ex-US Stock (USD)	0.81	1.00																
Emerging Mkt Stock	0.74	0.74	1.00															
Global ex-US Stock	0.83	0.96	0.87	1.00														
Global Stock	0.95	0.92	0.83	0.94	1.00													
Private Equity	0.74	0.64	0.62	0.67	0.74	1.00												
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00											
Core Bond	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00										
LT Core Bond	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.92	1.00									
TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.59	0.47	1.00								
High Yield Bond	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.17	0.18	0.26	0.10	0.66	0.65	0.39	0.26	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00					
Global RE Securities	0.64	0.58	0.56	0.61	0.65	0.58	-0.05	0.17	0.22	0.11	0.61	0.03	0.96	1.00				
Private Real Estate	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.77	0.75	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.48	0.51	0.58	0.57	0.54	0.47	-0.02	0.23	0.25	0.39	0.56	0.05	0.70	0.75	0.70	0.65	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	-0.08	0.05	0.03	0.05	0.44	0.26	1.00

Improved Investment Outlook

- Significant increase in bond yields has pushed return forecasts higher
- Exhibit below demonstrates how much risk taking is required within a stock/bond portfolio to meet a 7% return target – assuming the current bond yield of 4.75% and a 3% equity risk premium
- Under the September 2022 assumption suite, the necessary equity allocation is approximately 65% and the expected portfolio risk is 11.60%



Kentucky Retirement Systems

Performance and Asset Allocations

Quarter Ending: September 30, 2022

September
2022

KPPA MONTHLY PERFORMANCE UPDATE

KERS/KERS-H/SPRS

What's going on in the marketplace?

The quarter was defined by elevated volatility. Markets rallied to start the quarter in response to the Fed potentially slowing the pace of rate hikes as the expectation of falling inflation began to take hold. However, markets turned sharply negative in response to August inflation data that painted a very different picture. While some segments of the CPI revealed slowing inflation, like energy and materials, other areas, such as services, shelter, and food prices remained stubbornly elevated. This spurred hawkish comments from the Fed, who announced additional interest rate hikes while using the phrasing of “higher for longer” sending markets lower.

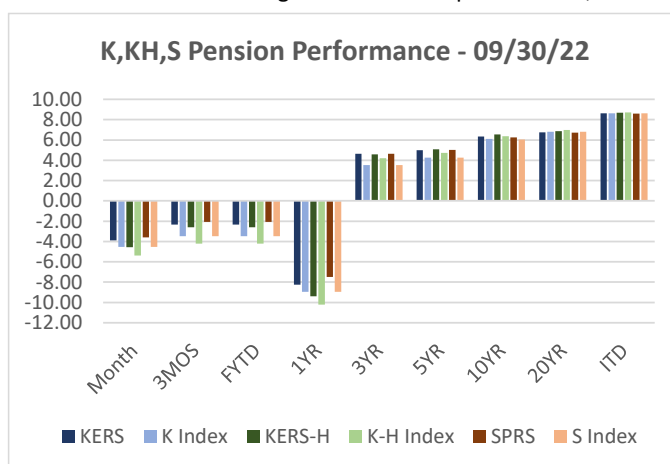
Rising rates in the U.S. are creating pressure on currency markets and ultimately on other economies around the world, many of whom are already weaker due to their own inflationary pressures. Foreign central banks are responding by raising rates to defend their currencies and attempt to curb elevated inflation in their home markets. These actions have led to greater concerns regarding economic growth.

The current environment of rising costs, erosion of savings, and tight labor markets point to a continued growth slowdown. Further rate hikes to combat inflation raise concerns about the inevitability of a recession. So far during 2022, there have been few places to hide. High quality, valuation, and traditionally defensive segments of the market have held up best. Growth segments such as communications, technology, consumer discretionary, and rate-sensitive real estate have been the most difficult portions of the market.

Looking forward, the market is likely to remain range bound as competing narratives emerge from one day to the next. Supply chain disruptions and moderating inflation versus inflation remaining elevated, the chance of a Fed pause versus continued tightening, low unemployment versus odds of a recession, etc. These are just a few of the issues likely to produce continued volatility. Ultimately, market direction is dependent on inflation and the Fed's reaction to it.

The KPPA Pension Trust portfolio fell -4.68% during the month of September, providing 92bps of downside protection versus a blended benchmark. The KRS Pension Composite produced a -3.97% return during the month. The KERS and SPRS Pension portfolios returned -3.89% and -3.58% respectively, while their benchmark returned -4.53%. The KERS-H Pension portfolio declined -4.55% versus its benchmark return of -5.37%. All three funds outperformed their respective benchmarks with similar drivers of attribution. KERS and KERS-H benefitted from strong selection in the Specialty Credit and Core Fixed Income asset classes. The underweight to both Real Return and Real Estate weighed on relative performance, but was partially offset by overweight cash positions. The SPRS plan experienced similar drivers; however, the significant cash position provided downside protection during a volatile month.

For the quarter, the KPPA Pension Trust portfolio fell -2.77%, outperforming the benchmark return of -4.41% while the KRS Pension Composite returned -2.34% during the quarter. The KERS and SPRS Pension portfolios returned -2.32% and -2.07%, against a benchmark return of -3.48%. The KERS-H Pension portfolio lost -2.60% while its benchmark fell -4.20%. All three funds outperformed due to similar attribution



drivers. Relative outperformance was driven by solid performance in the Core Fixed Income and Public Equities portfolio. The portfolios benefitted from their overweights to cash during a weak quarter.

Global equity markets experienced a significant sell-off during the month of September, as evidenced by the MSCI ACWI Index returning -9.57%. Domestic markets held up better than their Non-US market counterpart (R3000: -9.27% versus MSCI ACWI Ex-US: -10.14%). This brought the quarterly return for global markets to -6.82%, driven by weakness in the international markets, which have fallen -9.69%. US markets have now fallen -4.24% during the first quarter of the fiscal year.

US equity markets fell -9.27% during the month (Russell 3000), while the KPPA portfolio fared slightly better, returning -9.22%. All market segments were significantly weaker; with value continuing to hold up better than growth (R3000V: -8.86% versus R3000G: -9.68%).

For the quarter, US markets were down -4.46%, while the KPPA portfolio provided 22 bps of downside protection. During the quarter, small and midcaps held up much better than their large cap counterparts (R2000: -2.19% versus MC: -2.46% versus SP500: -4.88%). For the quarter, growth outperformed value (-3.37% versus -5.56%) driven by strong performance in July, prior to a sharp reversal in August spurred by inflation data. The KPPA portfolio's relative outperformance has been driven by its slight overweight down market cap, and positively skewing relative performance at the individual strategy level.

NonUS equity markets returned -10.14% (MSCI ACWI Ex-US) during the month. Developed markets returned -9.22% (MSCI World Ex-US) during the period while emerging markets fell -11.72% (MSCI EM). The KPPA portfolio lost -9.49% during the month, outperforming its benchmark by 65bps. Relative outperformance was driven by stock selection, as most individual mandates outperformed their respective benchmarks.

For the quarter, NonUS markets fell -9.69%. Developed markets held up better than their emerging market counterparts, which were significantly weaker, returning -11.57%. A significant portion (approaching half) of the negative performance can be attributed to the currency market, as the basket of global currencies have weakened dramatically versus the US dollar and hampered local performance.

The specialty credit portfolio outperformed its benchmark during the month, returning -0.59% versus -3.12%. The High Yield market declined (-3.97%) as spreads widened and rates rose in response to a continued risk-off sentiment. The leveraged loan segment of the market held up marginally better as the Morningstar LSTA Leveraged Loan Index fell -2.27% during the month. For the quarter, the portfolio significantly outperformed its benchmark, falling -0.45% versus -8.41%. Notably, the High Yield market has been significantly weaker, as that index fell -14.14%. The portfolio's strong relative outperformance was driven by across the board strength among individual mandates.

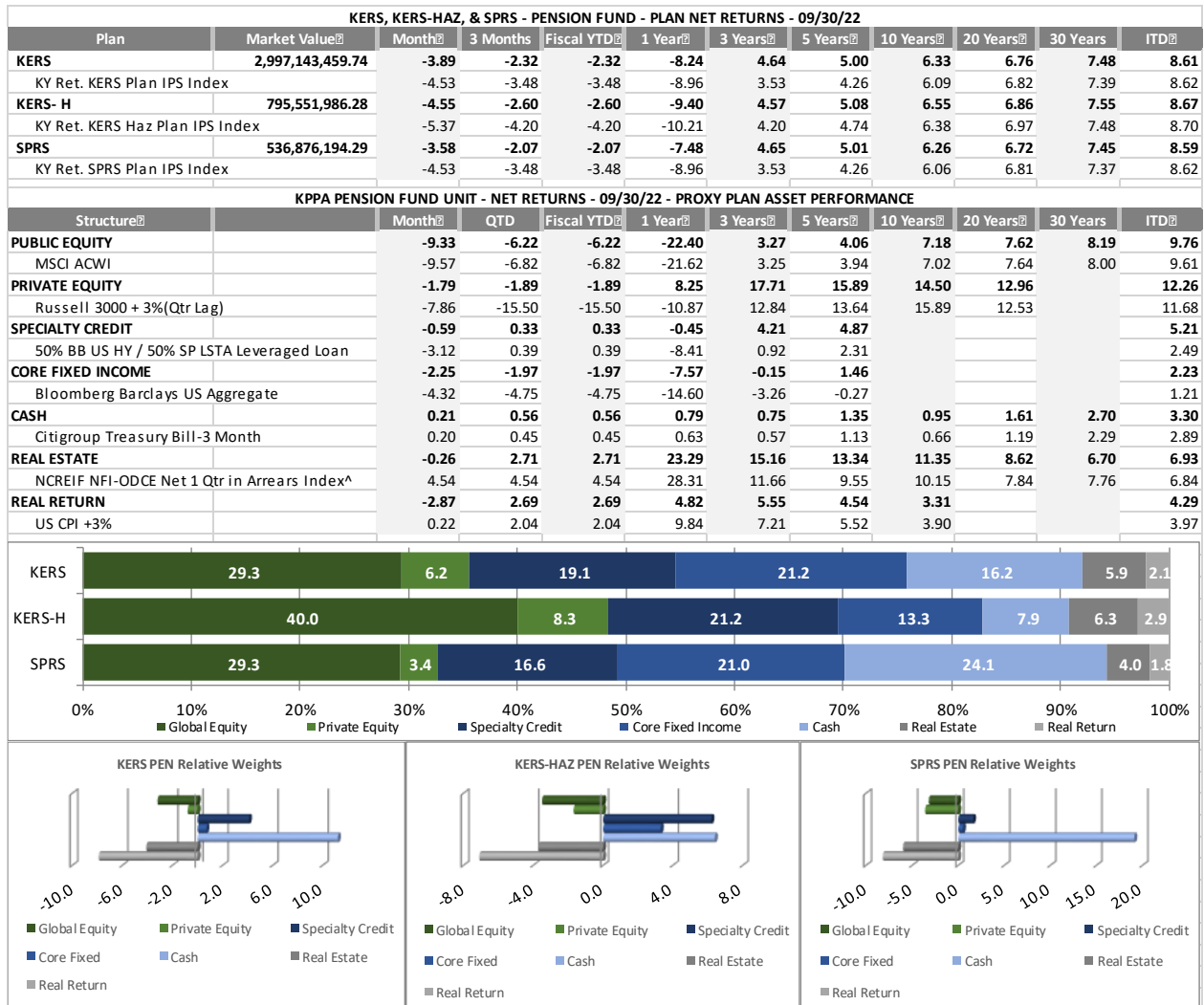
The core fixed income portfolio lost -2.25% compared to the Bloomberg Aggregate Index return of -4.32%. Relative outperformance was attributable to positioning within the allocation; the portfolios remain underweight overall duration given the outlook for rising rates and elevated volatility. Both shorter-term and intermediate credit market segments held up better. For the quarter, the portfolio returned -1.97% compared to the benchmark return of -4.75%. The month of September heavily influenced the quarter, which experienced a similar phenomenon where the shorter end of the curve performed better.

The private equity allocation fell -1.79% during the month, bringing the quarter return to -1.89%. Trailing public marks have begun to affect the overall performance of the portfolio. The 1-year return is still positive at 8.25%; however, that is down from just shy of 21% last month.

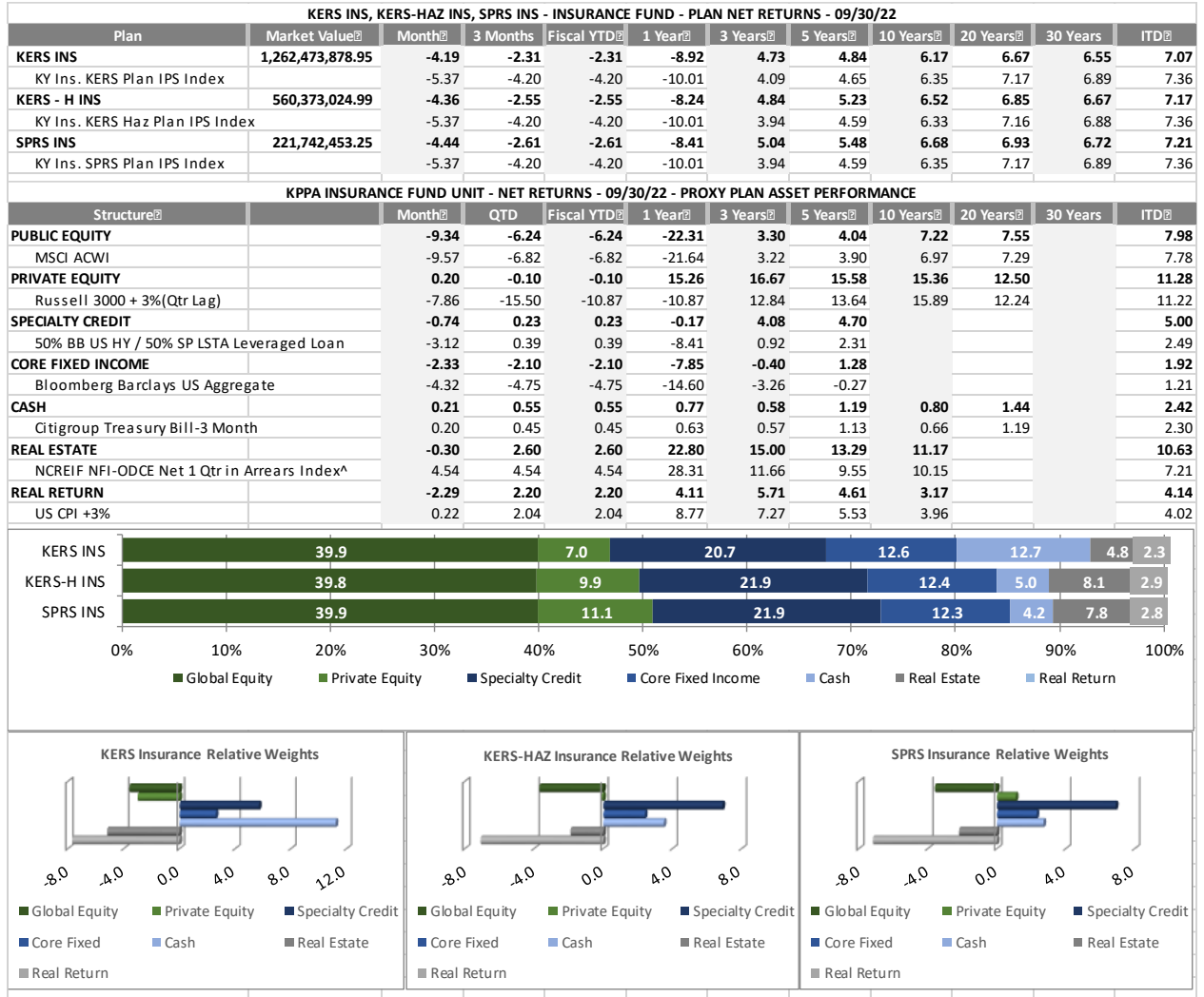
The real return portfolio fell -2.87% during the month, compared to its benchmark return of 0.22%. As with the past few months, performance was driven by the MLP portion of the portfolio; however, this month it was to the downside, as this portion of the portfolio was down -7.68%. For the quarter, the portfolio has returned 2.69%, bringing the 1-year return to 4.82%.

Real estate remained relatively flat during the month, falling 26bps. The latest quarter performance of 2.71% was lower than that of a year ago, thus the 1-year return fell to 23.29% versus in excess of 27% prior month. The portfolio has benefitted from recent strength in industrial, multi-family, student housing, and storage properties.

The cash portfolio performed in-line with its benchmark, with the 3-month T-bill returning 0.21% for the month. This brought the quarterly return to 0.56%, and the 1-year return to 0.79% (versus 0.63%).



KRS Investment Committee Meeting - Investment Review and Update

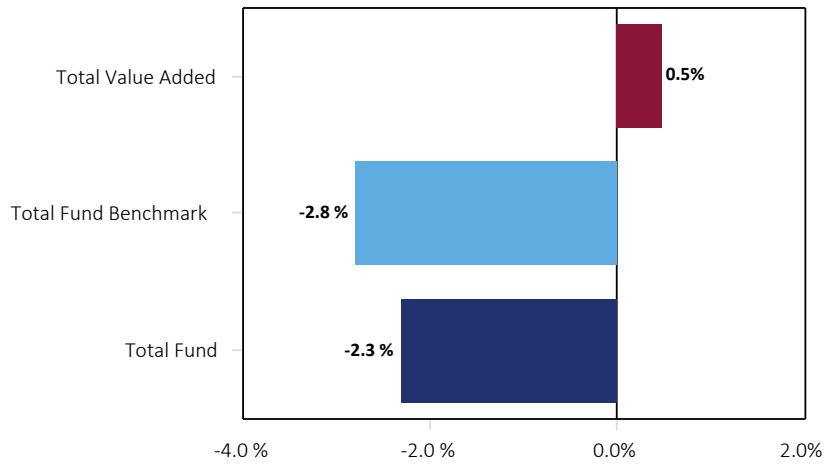


Total Fund Attribution

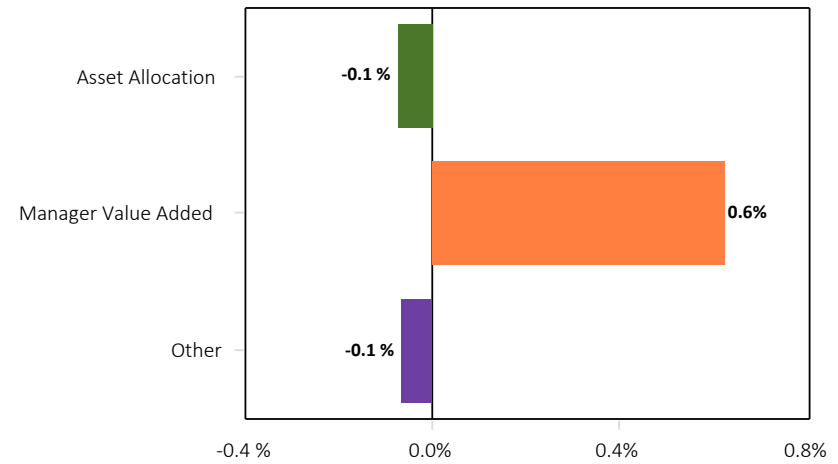
KERS Pension Plan

Periods Ended 1 Quarter Ending September 30, 2022

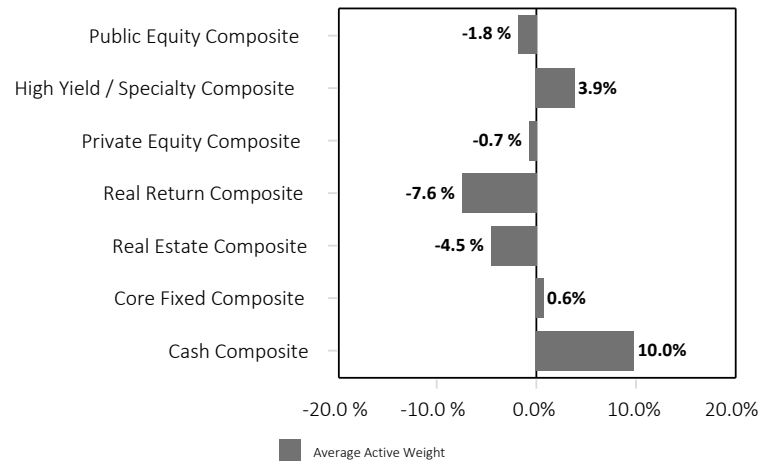
Total Fund Performance



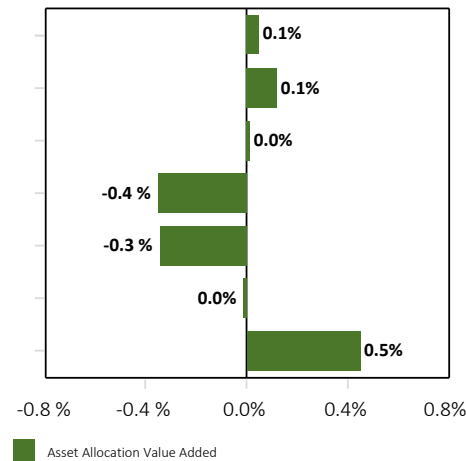
Total Value Added:0.5%



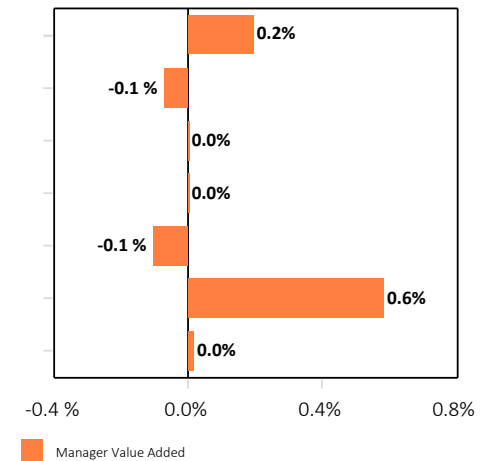
Total Asset Allocation:-0.1%



Asset Allocation Value Added:-0.1%



Total Manager Value Added:0.6%

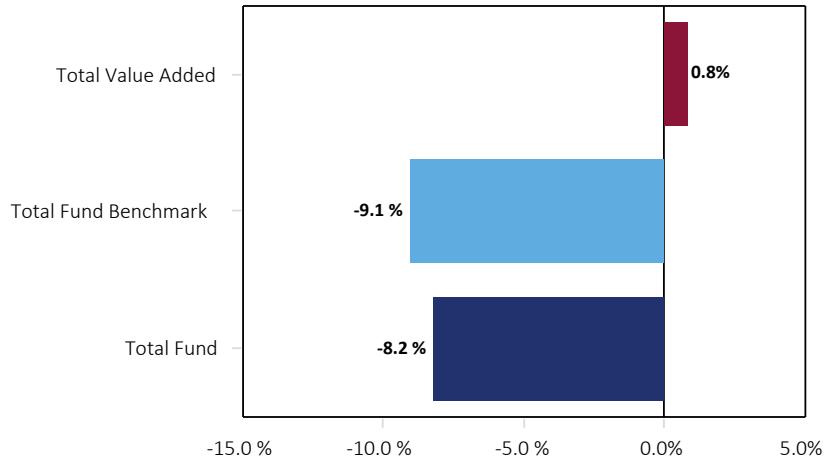


Total Fund Attribution

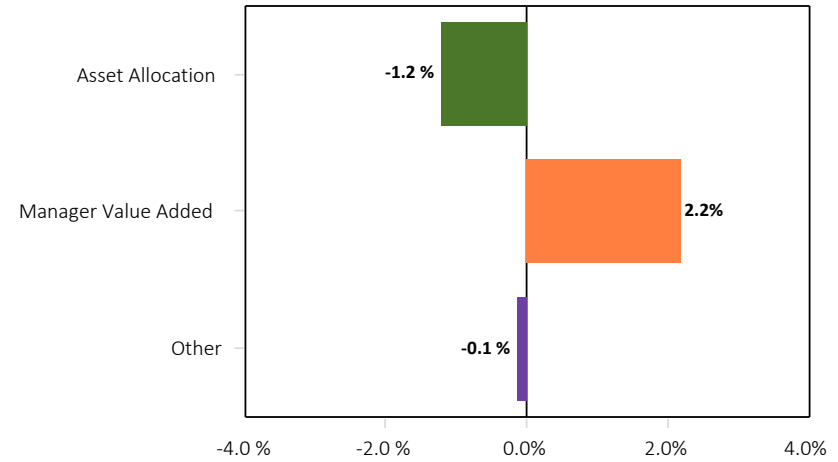
KERS Pension Plan

Periods Ended 1 Year Ending September 30, 2022

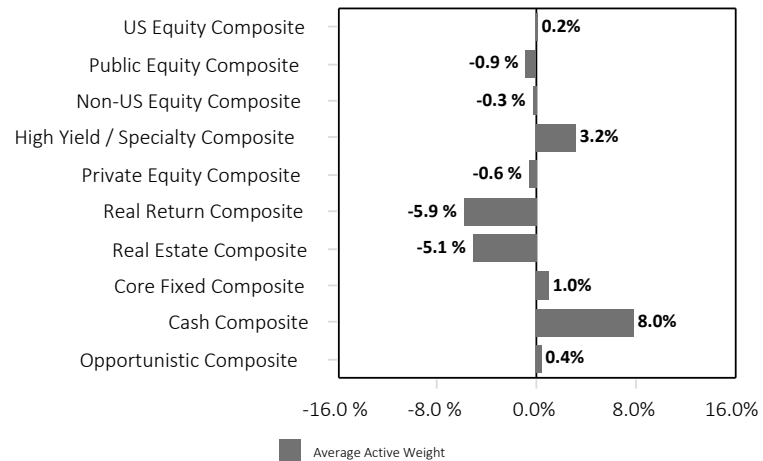
Total Fund Performance



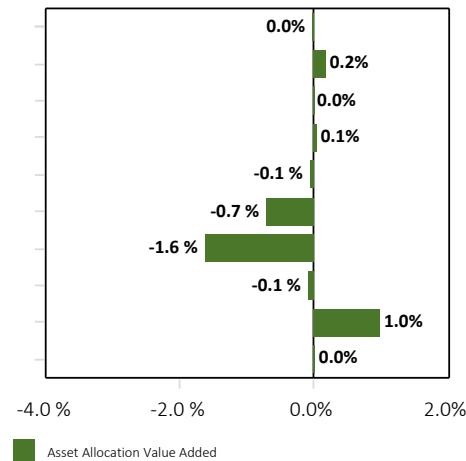
Total Value Added:0.8%



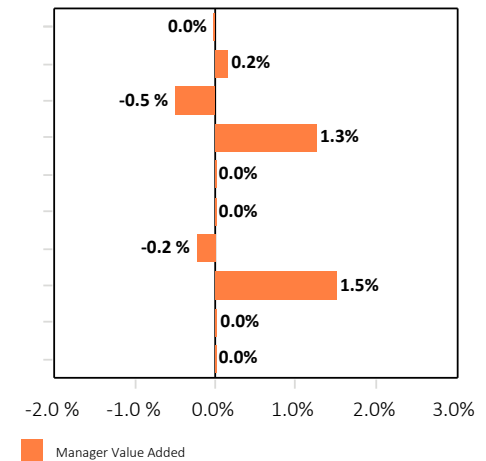
Total Asset Allocation:-1.2%



Asset Allocation Value Added:-1.2%



Total Manager Value Added:2.2%

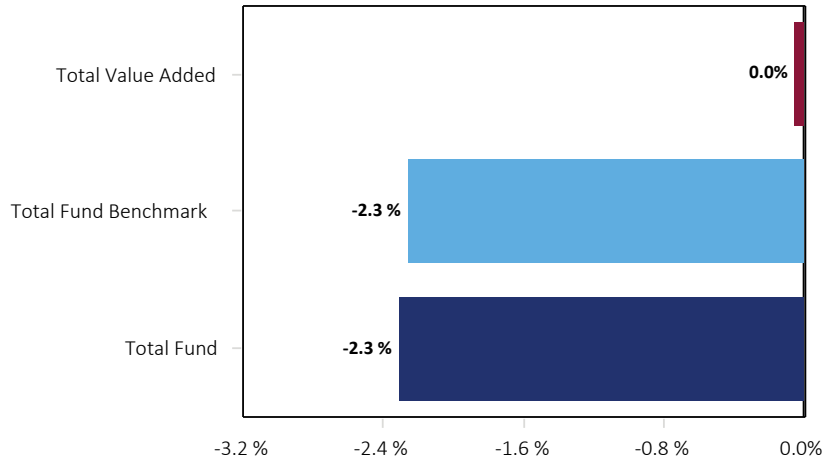


Total Fund Attribution

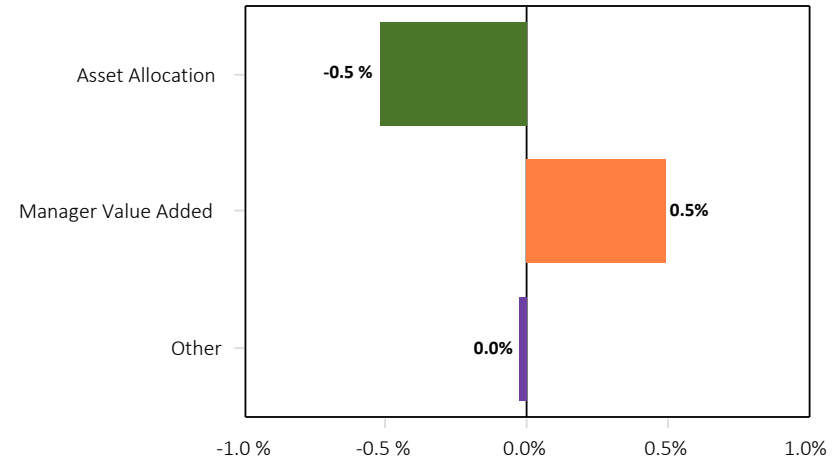
KERS Insurance Plan

Periods Ended 1 Quarter Ending September 30, 2022

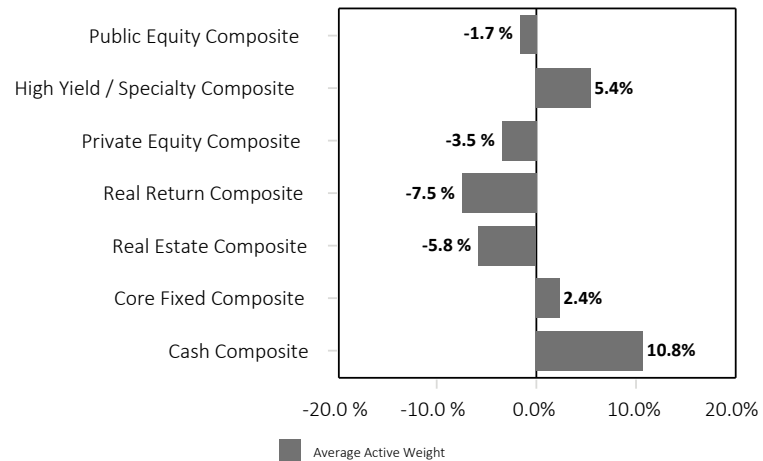
Total Fund Performance



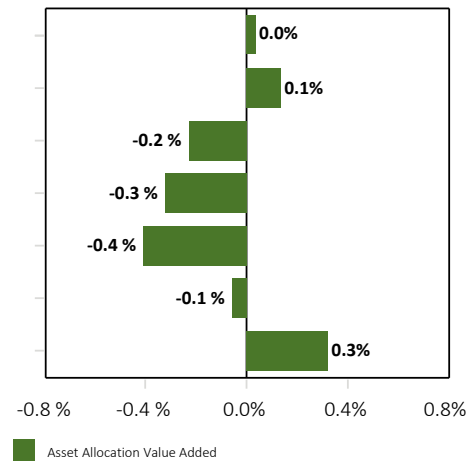
Total Value Added:0.0%



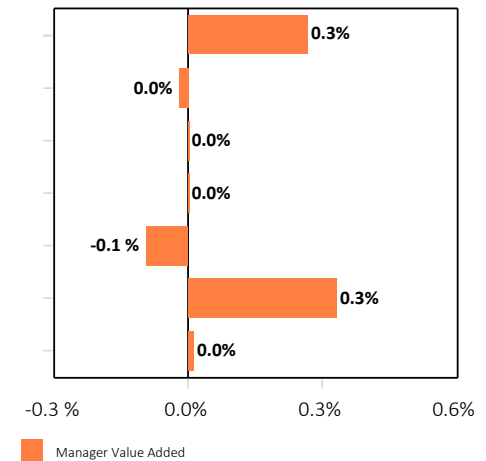
Total Asset Allocation:-0.5%



Asset Allocation Value Added:-0.5%



Total Manager Value Added:0.5%

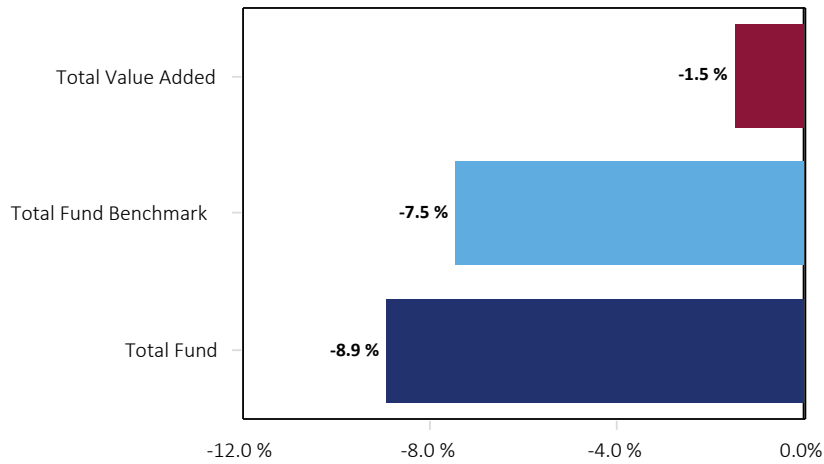


Total Fund Attribution

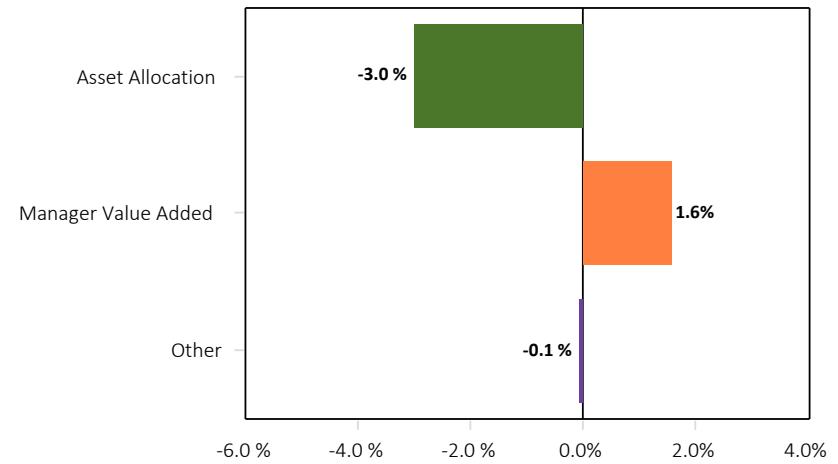
KERS Insurance Plan

Periods Ended 1 Year Ending September 30, 2022

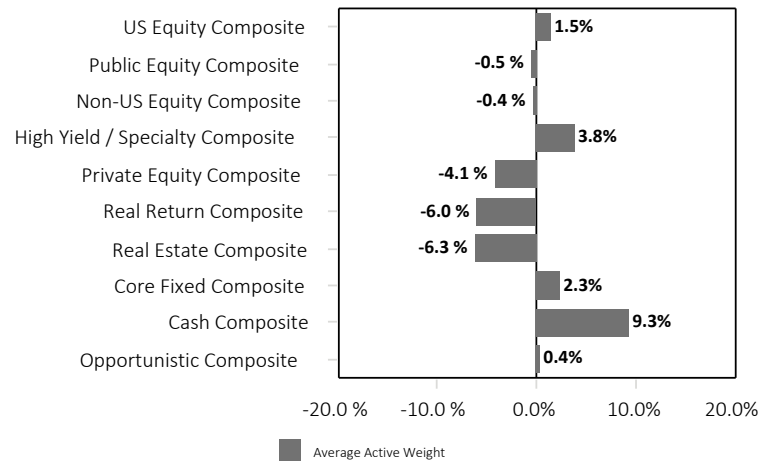
Total Fund Performance



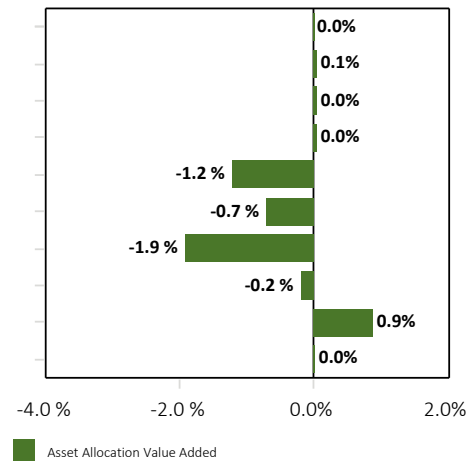
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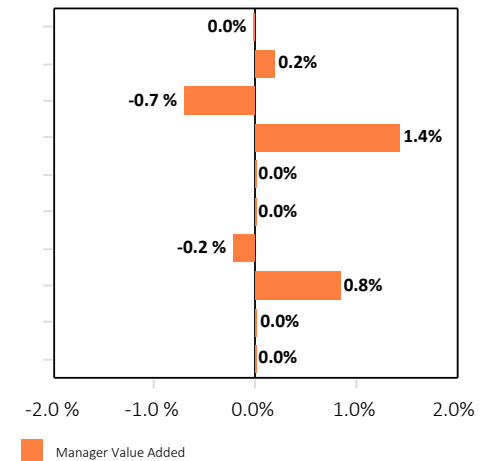
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Asset Allocation Value Added:-3.0 %



Total Manager Value Added:1.6%

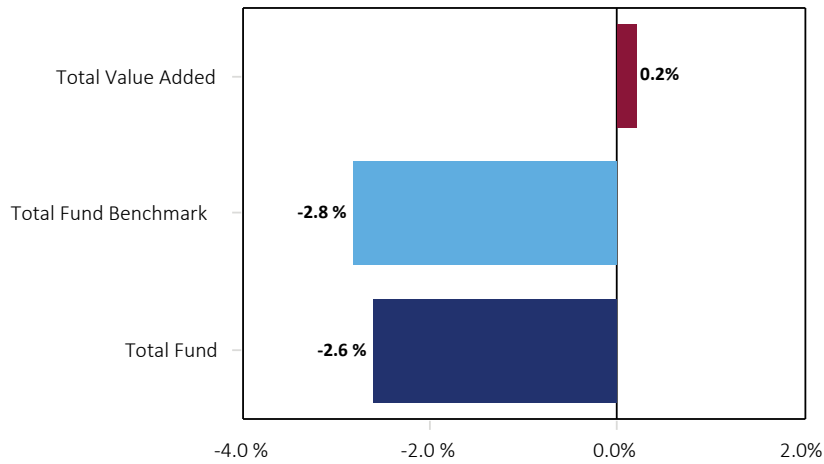


Total Fund Attribution

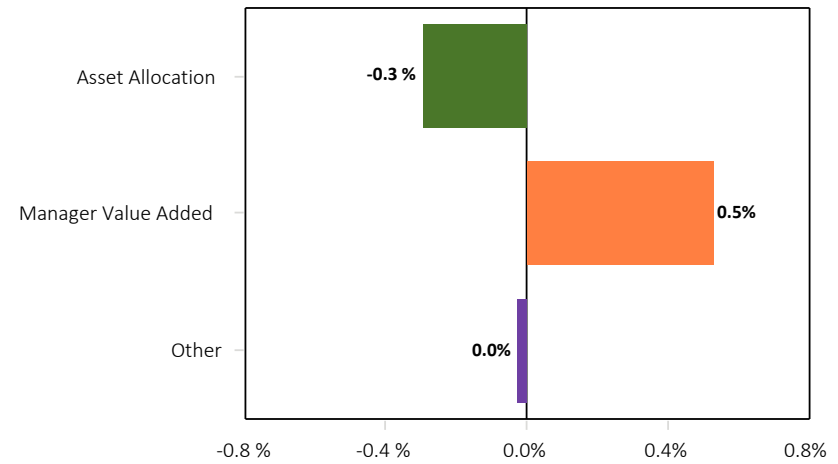
KERS (H) Pension Plan

Periods Ended 1 Quarter Ending September 30, 2022

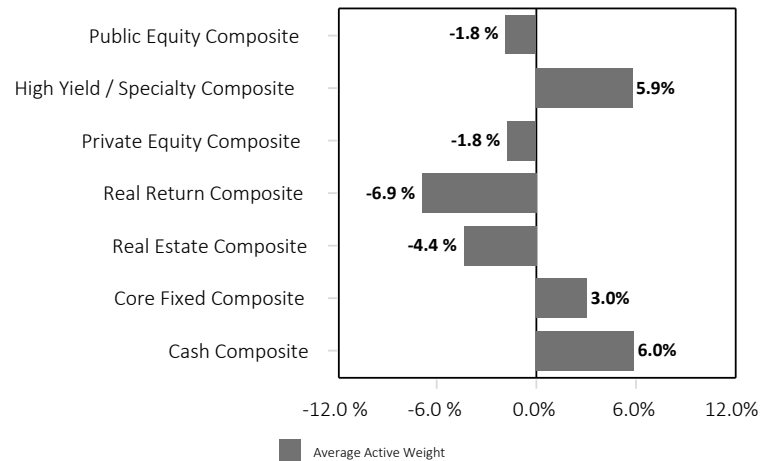
Total Fund Performance



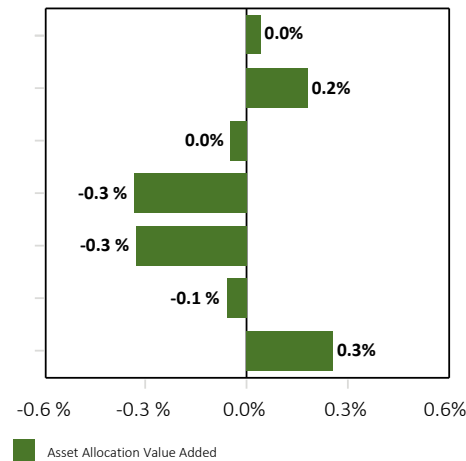
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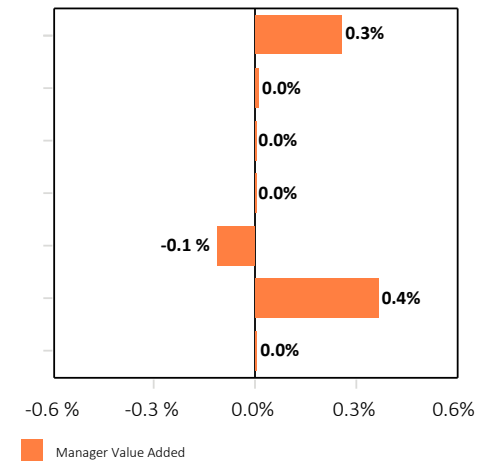
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Asset Allocation Value Added:-0.3%



Total Manager Value Added:0.5%

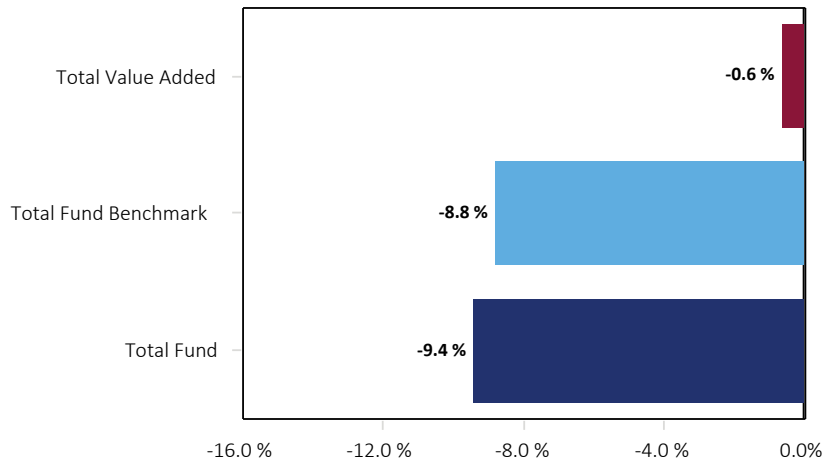


Total Fund Attribution

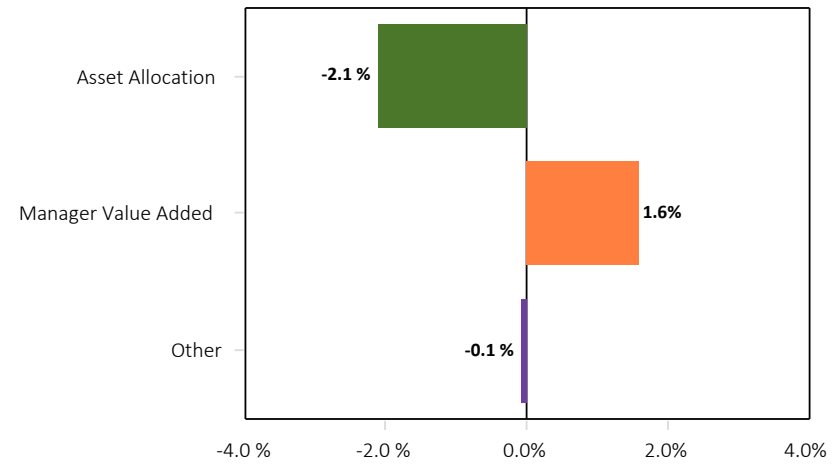
KERS (H) Pension Plan

Periods Ended 1 Year Ending September 30, 2022

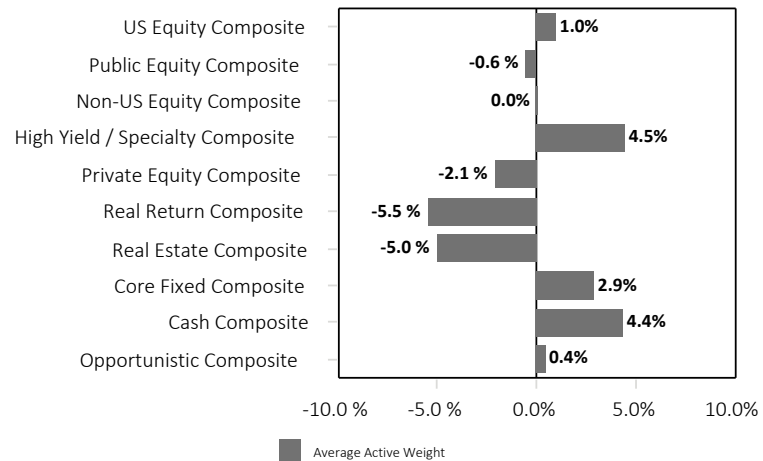
Total Fund Performance



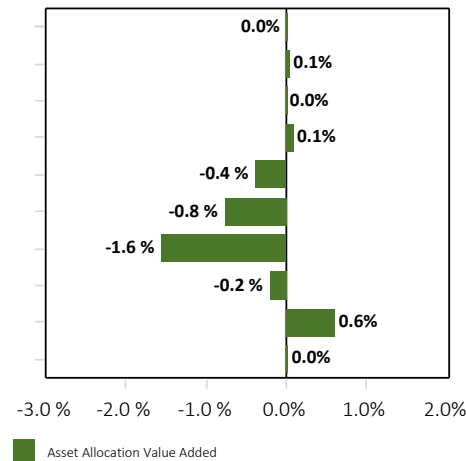
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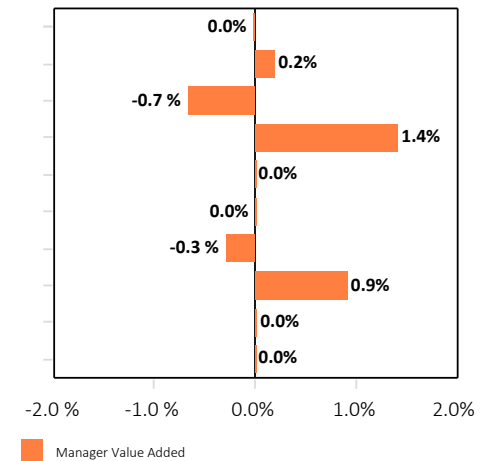
Total Asset Allocation:-2.1 %



Asset Allocation Value Added:-2.1 %



Total Manager Value Added:1.6%

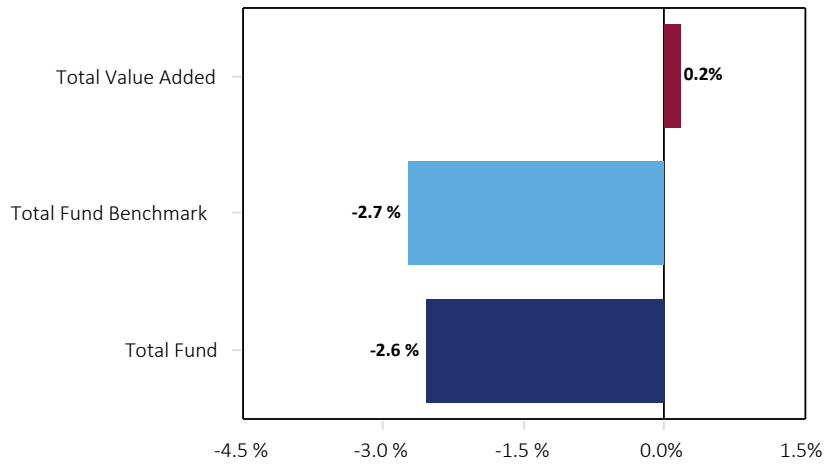


Total Fund Attribution

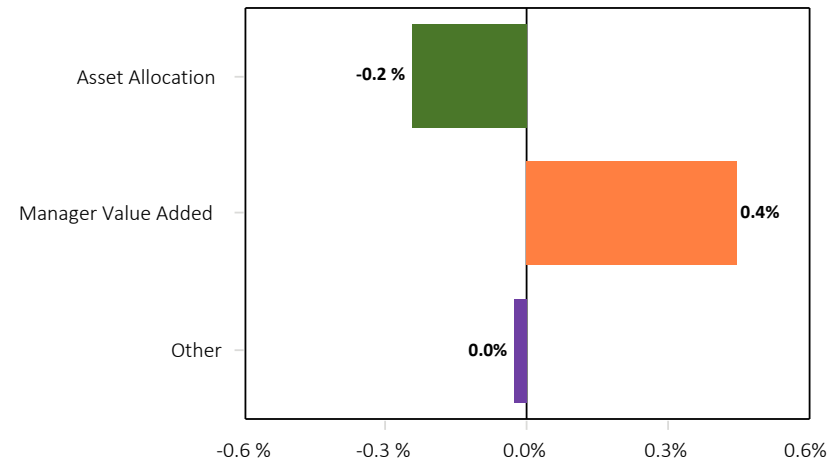
KERS (H) Insurance Plan

Periods Ended 1 Quarter Ending September 30, 2022

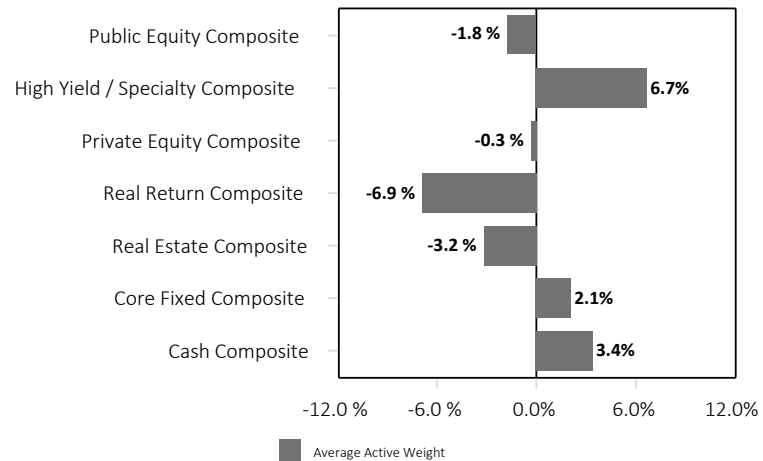
Total Fund Performance



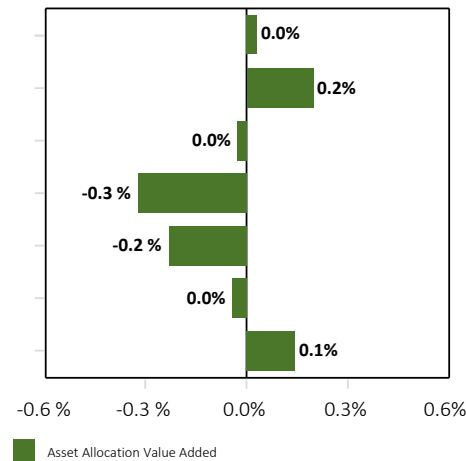
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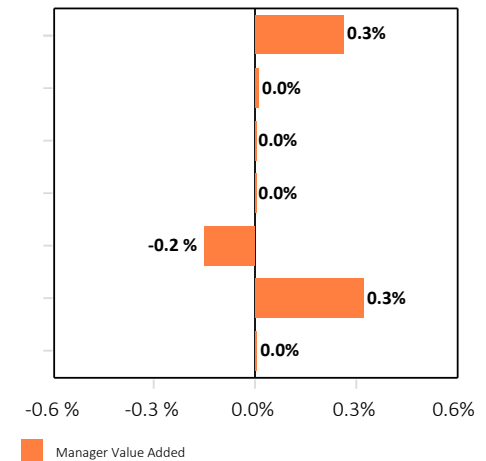
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Asset Allocation Value Added:-0.2%



Total Manager Value Added:0.4%

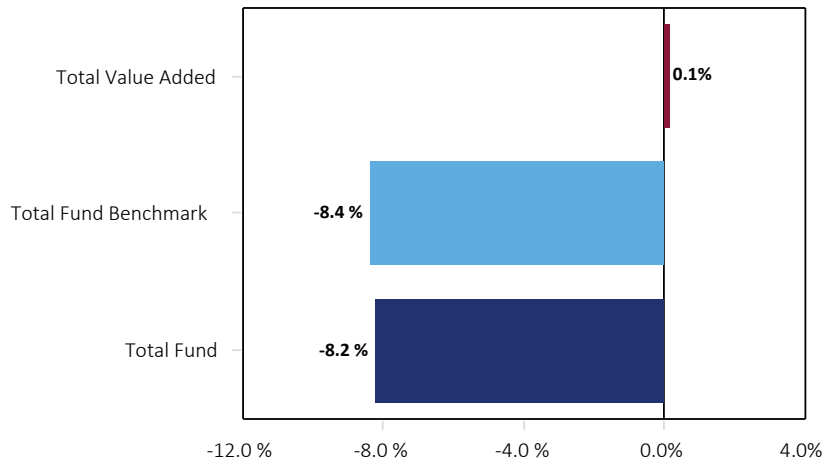


Total Fund Attribution

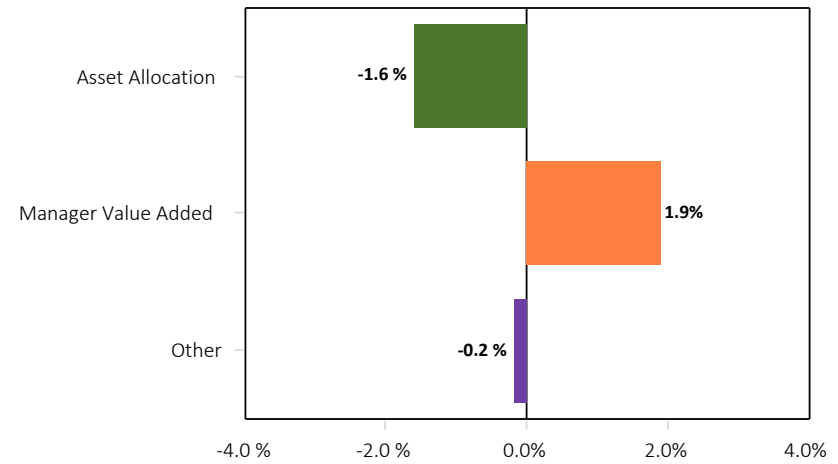
KERS (H) Insurance Plan

Periods Ended 1 Year Ending September 30, 2022

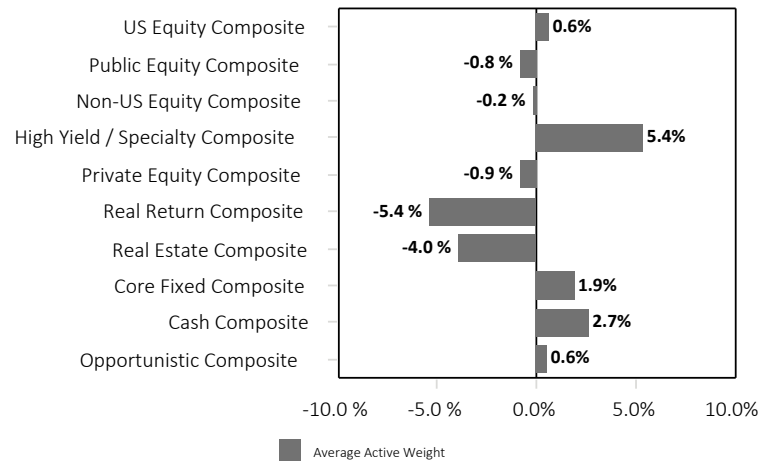
Total Fund Performance



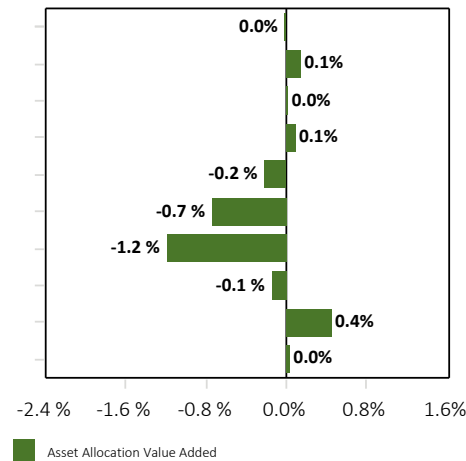
Total Value Added: 0.1%



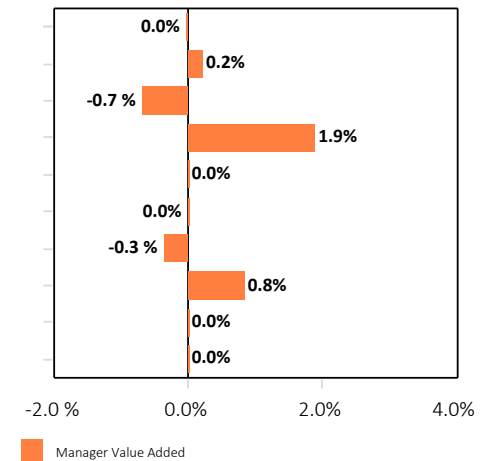
Total Asset Allocation: -1.6%



Asset Allocation Value Added: -1.6%



Total Manager Value Added: 1.9%

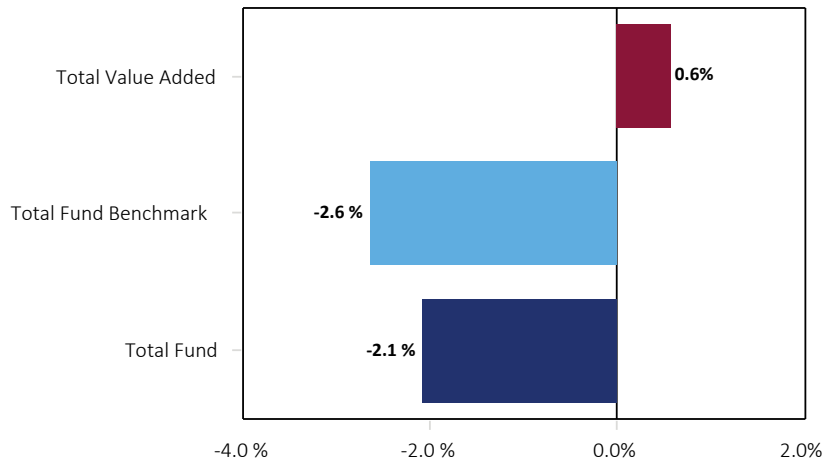


Total Fund Attribution

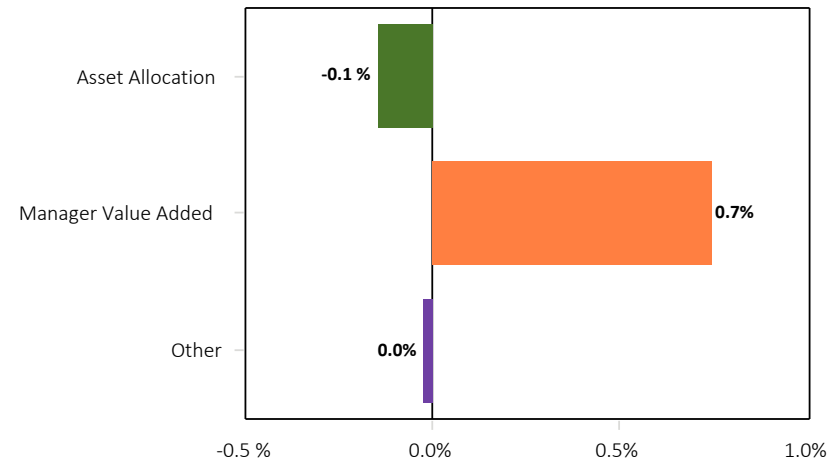
SPRS Pension Plan

Periods Ended 1 Quarter Ending September 30, 2022

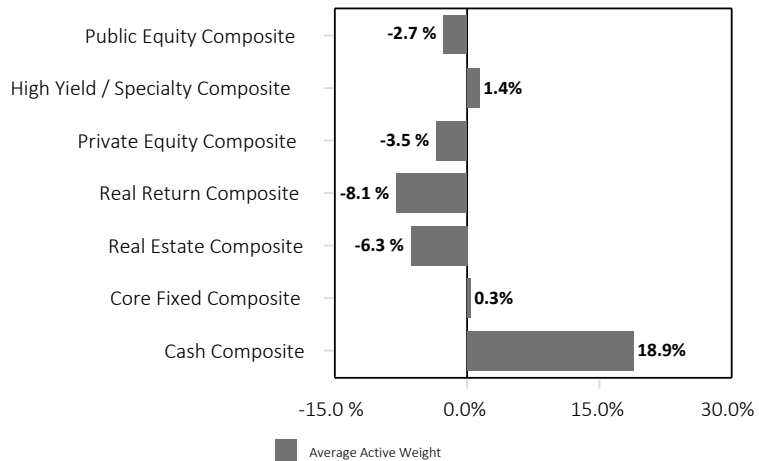
Total Fund Performance



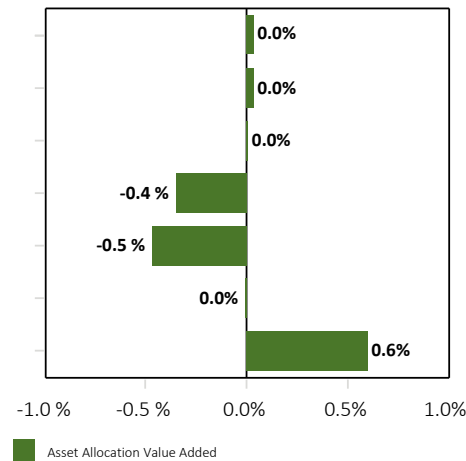
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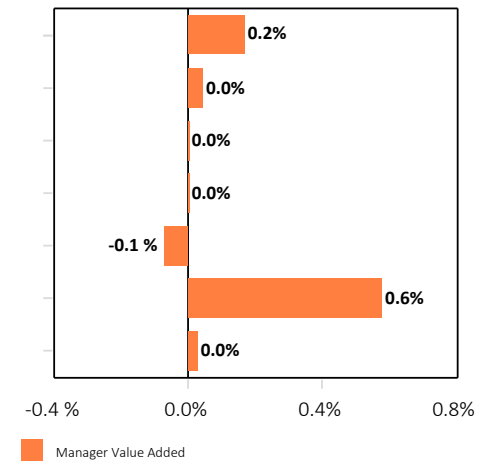
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:0.7%

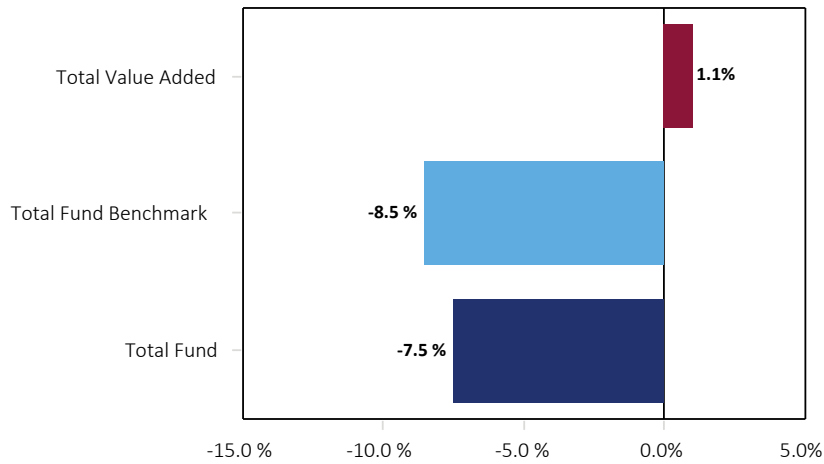


Total Fund Attribution

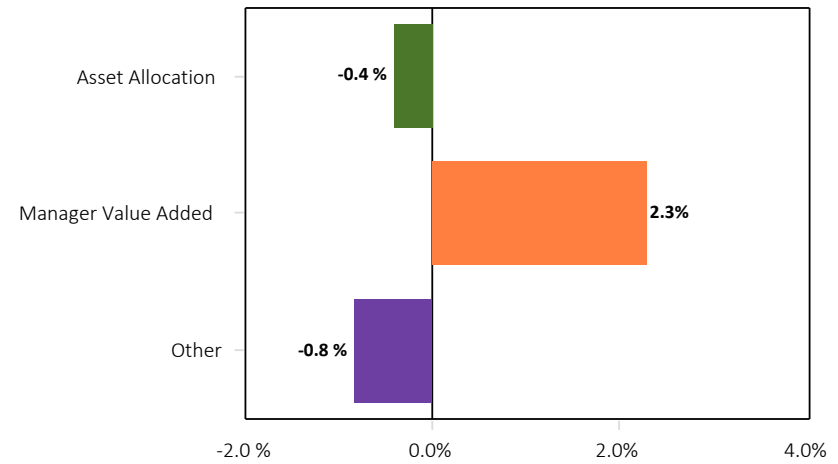
SPRS Pension Plan

Periods Ended 1 Year Ending September 30, 2022

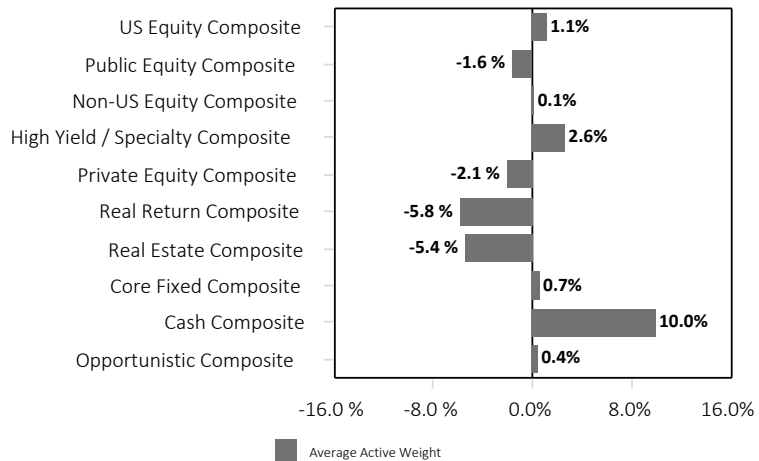
Total Fund Performance



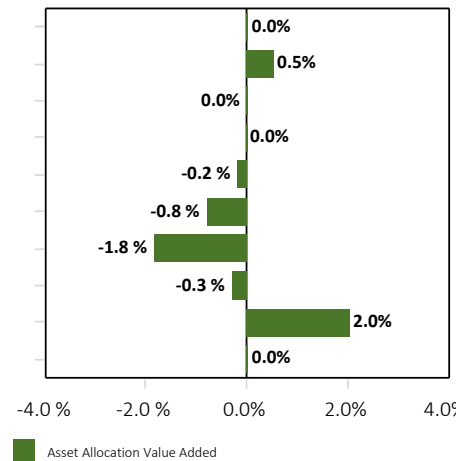
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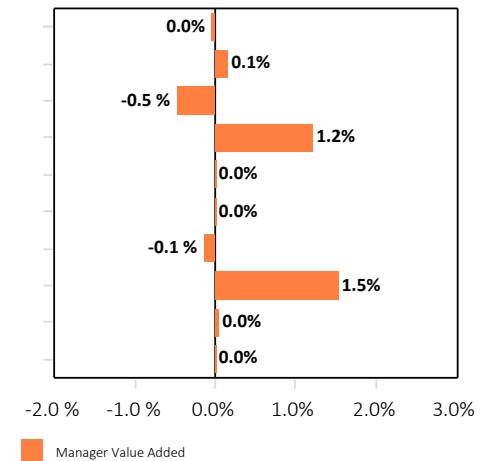
Total Asset Allocation: -0.4%



Asset Allocation Value Added: -0.4%



Total Manager Value Added: 2.3%

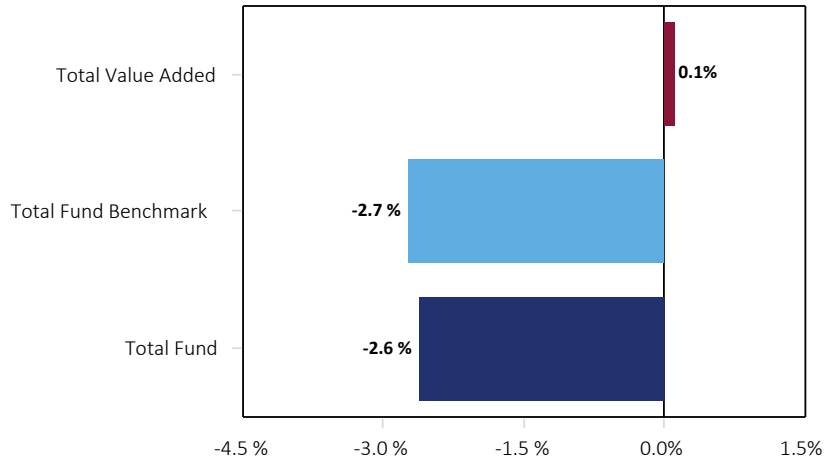


Total Fund Attribution

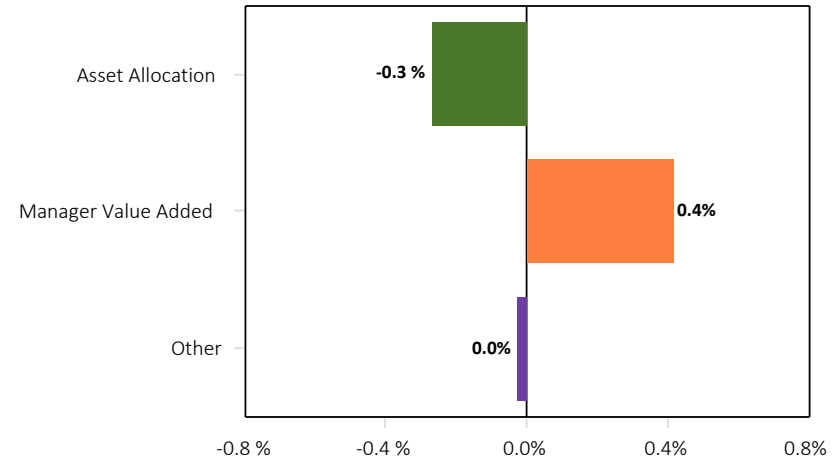
SPRS Insurance Plan

Periods Ended 1 Quarter Ending September 30, 2022

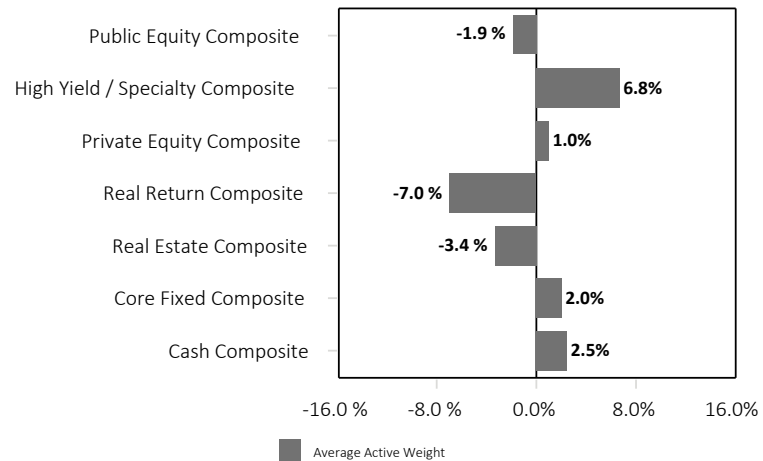
Total Fund Performance



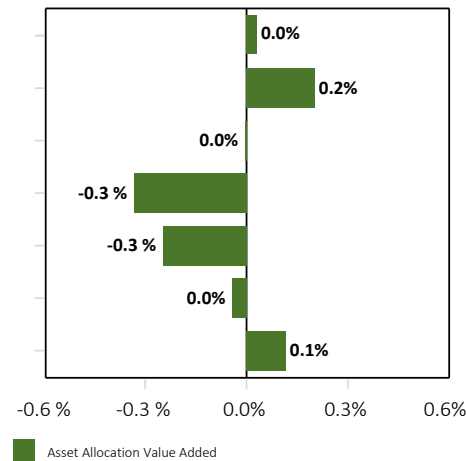
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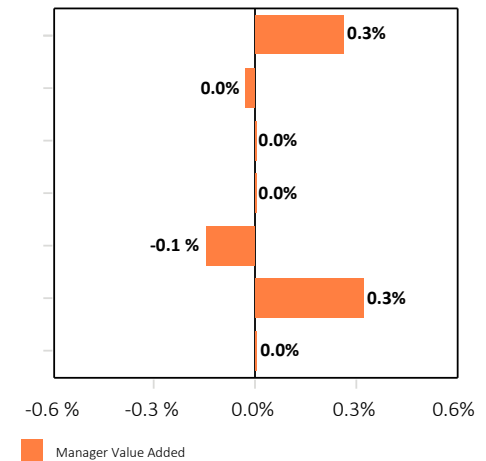
Total Asset Allocation: -0.3%



Asset Allocation Value Added: -0.3%



Total Manager Value Added: 0.4%

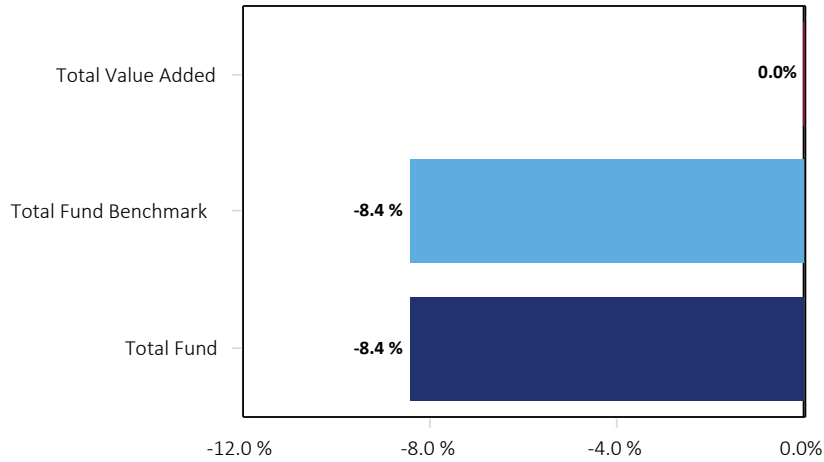


Total Fund Attribution

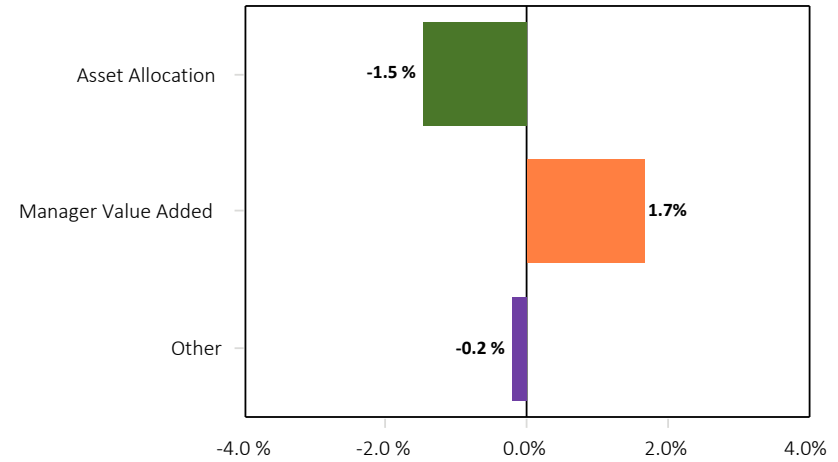
SPRS Insurance Plan

Periods Ended 1 Year Ending September 30, 2022

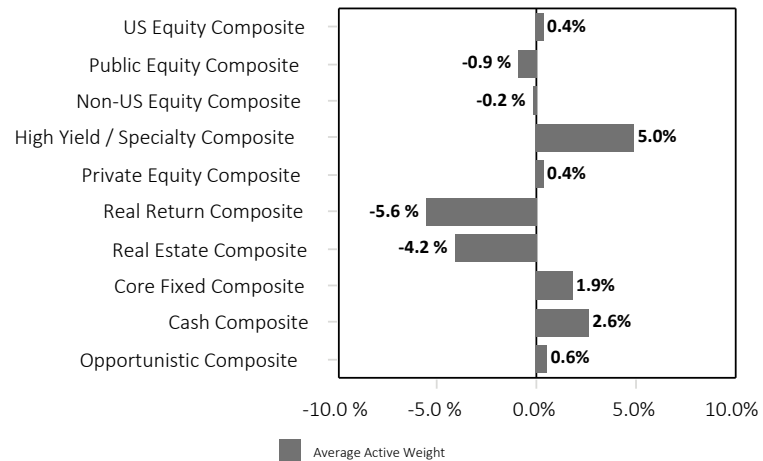
Total Fund Performance



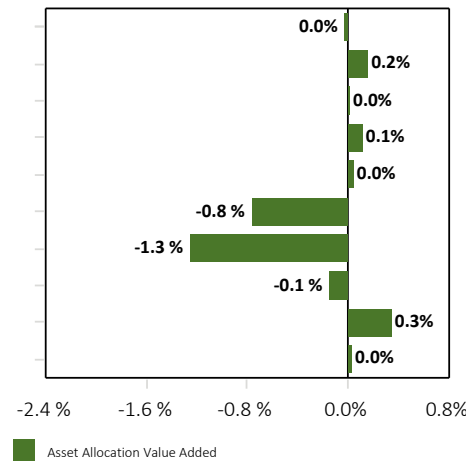
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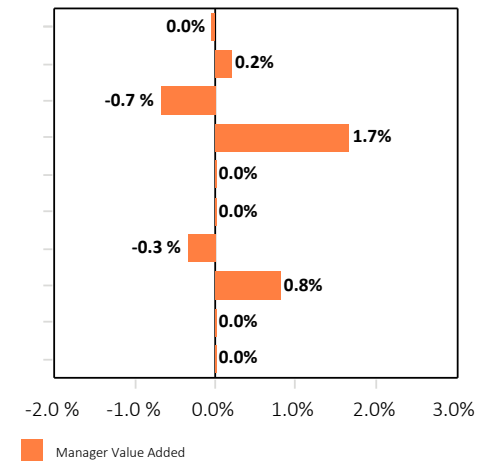
Total Asset Allocation:-1.5%



Asset Allocation Value Added:-1.5%



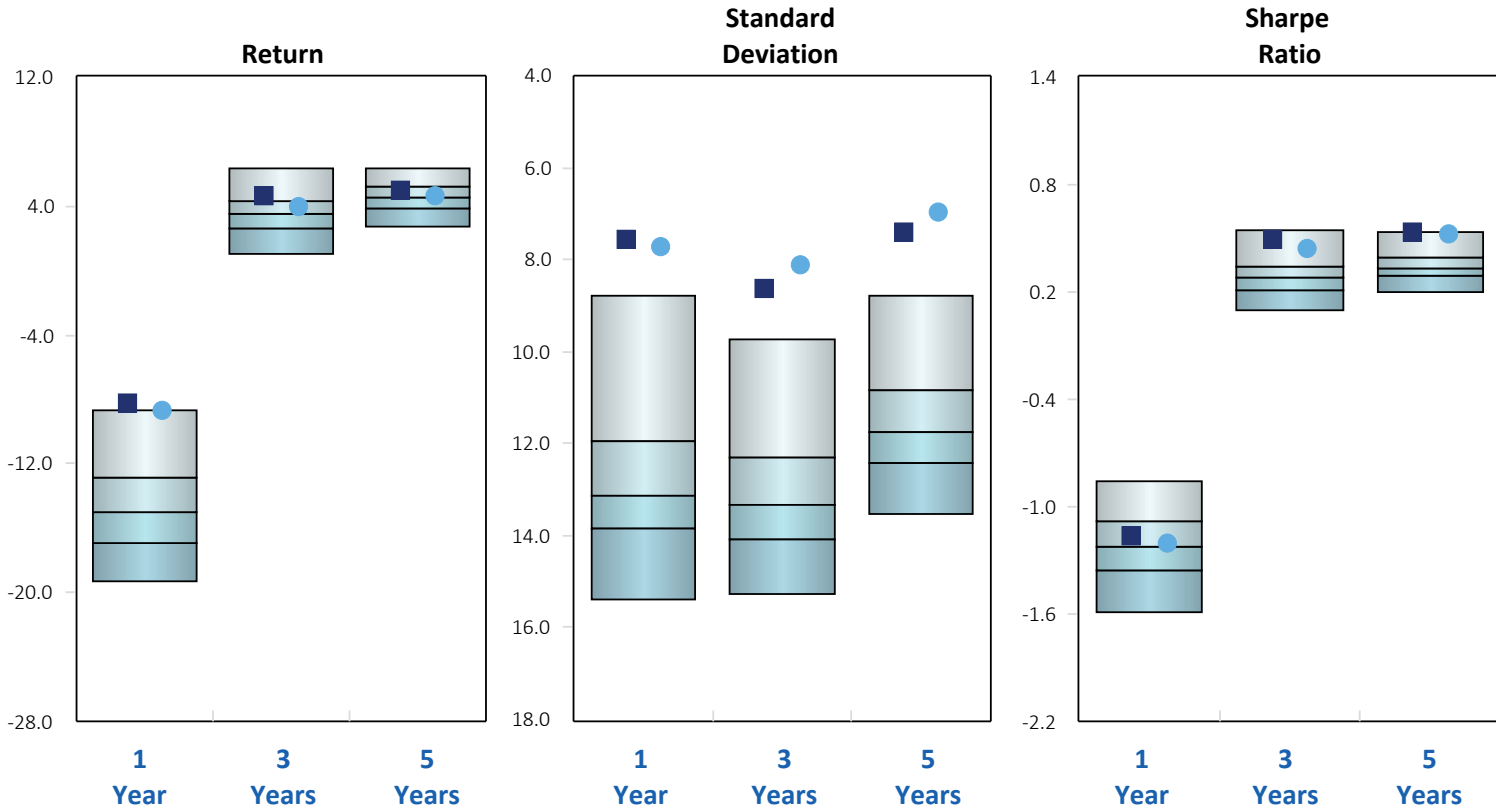
Total Manager Value Added:1.7%



Plan Sponsor Peer Group Analysis - Multi Statistics

KERS Pension Plan vs All Public Plans-Total Fund

Periods Ended September 30, 2022



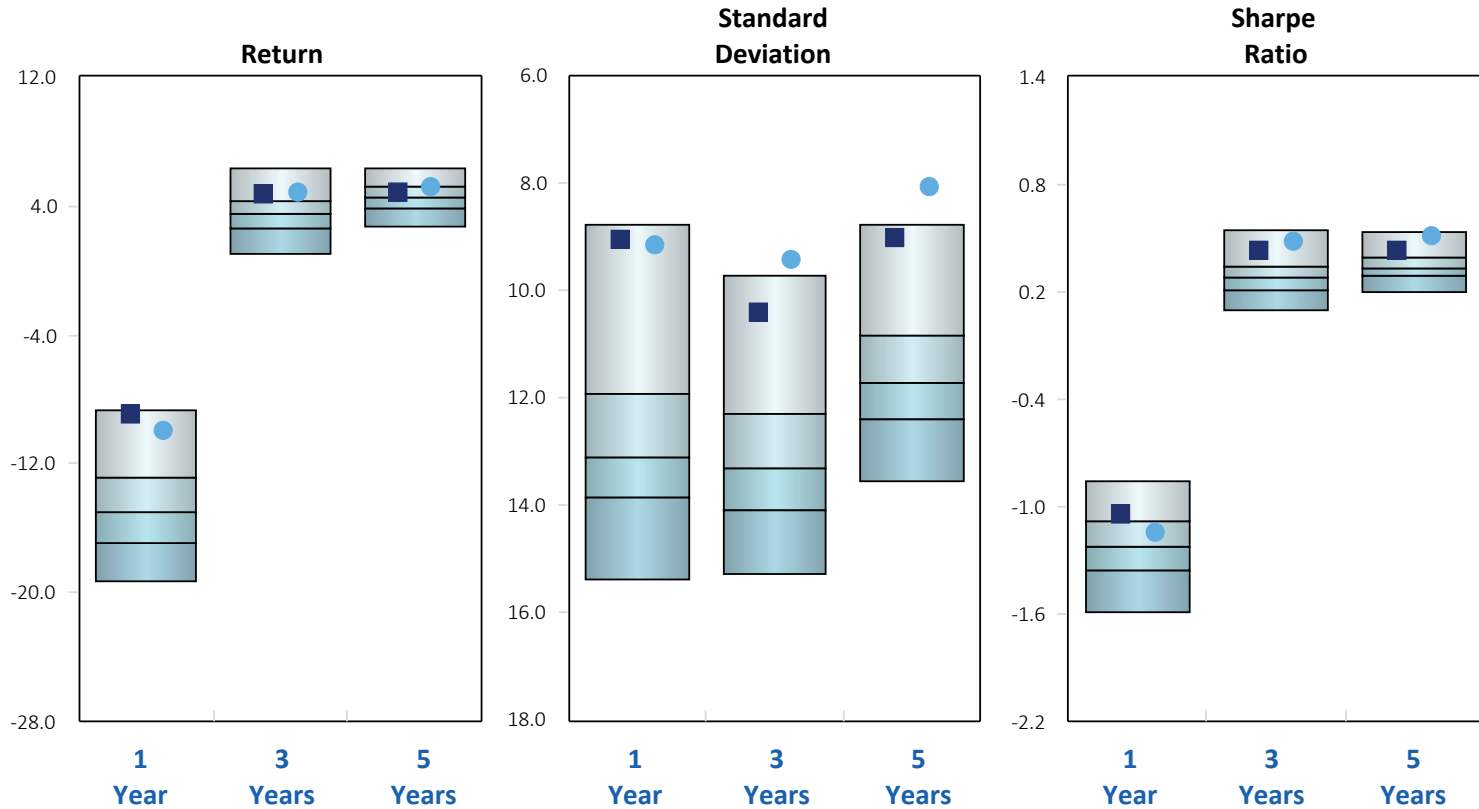
	1 Year	3 Years	5 Years		1 Year	3 Years	5 Years		1 Year	3 Years	5 Years
■ KERS Pension Plan	-8.25 (4)	4.66 (19)	5.01 (29)		7.57 (2)	8.61 (2)	7.40 (1)		-1.16 (37)	0.50 (7)	0.54 (6)
● KERS Pension IPS Index	-8.72 (6)	3.99 (34)	4.71 (41)		7.71 (2)	8.10 (1)	6.95 (1)		-1.20 (45)	0.44 (10)	0.53 (6)
5th Percentile	-8.67	6.38	6.35		8.78	9.74	8.78		-0.86	0.55	0.54
1st Quartile	-12.87	4.35	5.16		11.94	12.30	10.85		-1.08	0.35	0.40
Median	-14.97	3.48	4.50		13.12	13.34	11.74		-1.22	0.28	0.33
3rd Quartile	-16.97	2.61	3.90		13.85	14.10	12.41		-1.36	0.21	0.29
95th Percentile	-19.30	1.01	2.75		15.38	15.29	13.55		-1.59	0.10	0.20

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 September 30, 2022



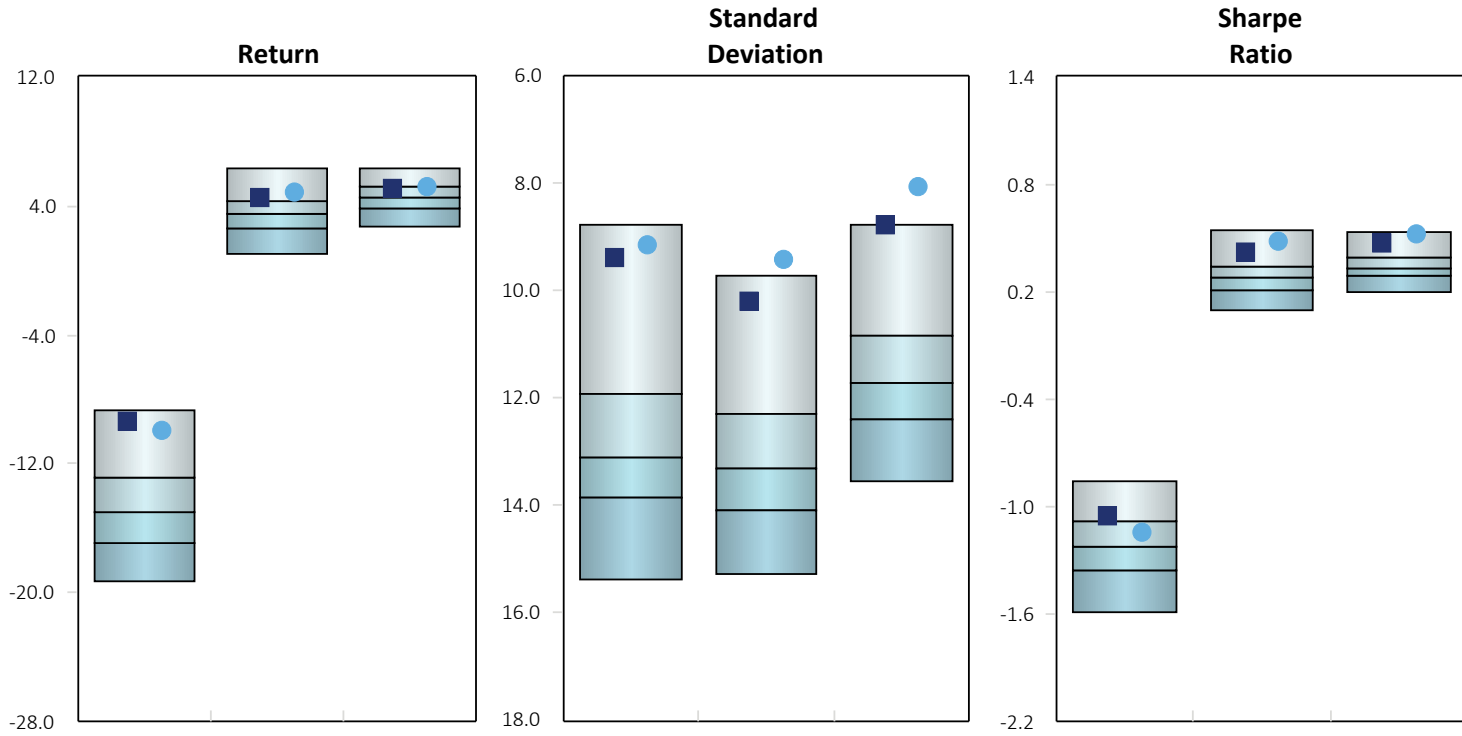
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS Insurance Plan	-8.93 (7)	4.72 (18)	4.84 (37)	9.04 (6)	10.40 (7)	9.01 (6)	-1.04 (20)	0.43 (11)	0.44 (14)
● KERS Insurance IPS Index	-9.92 (10)	4.85 (17)	5.18 (25)	9.16 (6)	9.44 (4)	8.06 (3)	-1.14 (33)	0.48 (8)	0.52 (6)
5th Percentile	-8.67	6.38	6.35	8.78	9.74	8.78	-0.86	0.55	0.54
1st Quartile	-12.87	4.35	5.16	11.94	12.30	10.85	-1.08	0.35	0.40
Median	-14.97	3.48	4.50	13.12	13.34	11.74	-1.22	0.28	0.33
3rd Quartile	-16.97	2.61	3.90	13.85	14.10	12.41	-1.36	0.21	0.29
95th Percentile	-19.30	1.01	2.75	15.38	15.29	13.55	-1.59	0.10	0.20

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 September 30, 2022



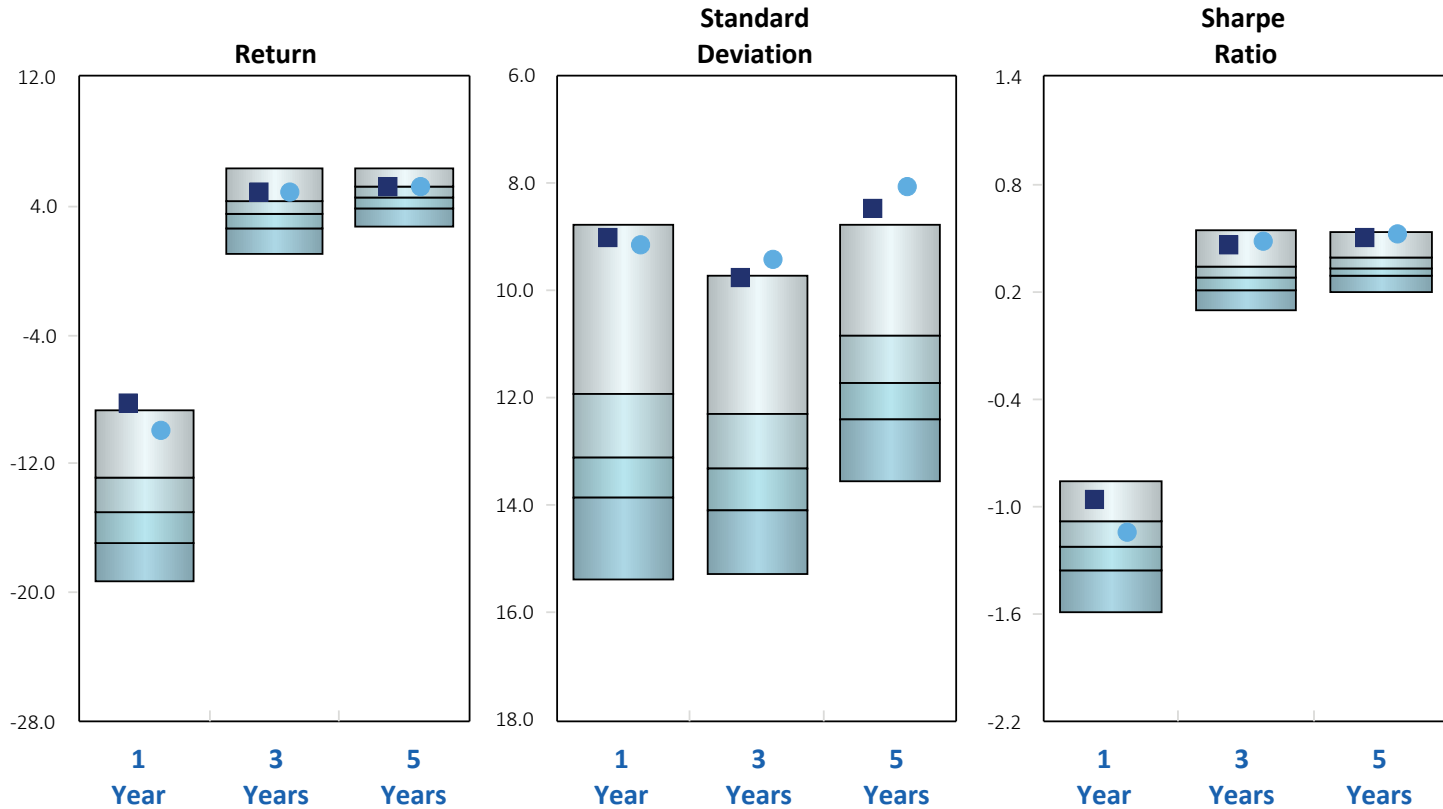
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS (H) Pension Plan	-9.41 (8)	4.57 (21)	5.07 (28)	9.40 (7)	10.21 (6)	8.78 (4)	-1.05 (20)	0.43 (11)	0.47 (10)
● KERS (H) Pension IPS Index	-9.92 (10)	4.85 (17)	5.19 (24)	9.16 (6)	9.44 (4)	8.07 (3)	-1.14 (33)	0.48 (8)	0.52 (6)
5th Percentile	-8.67	6.38	6.35	8.78	9.74	8.78	-0.86	0.55	0.54
1st Quartile	-12.87	4.35	5.16	11.94	12.30	10.85	-1.08	0.35	0.40
Median	-14.97	3.48	4.50	13.12	13.34	11.74	-1.22	0.28	0.33
3rd Quartile	-16.97	2.61	3.90	13.85	14.10	12.41	-1.36	0.21	0.29
95th Percentile	-19.30	1.01	2.75	15.38	15.29	13.55	-1.59	0.10	0.20

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 September 30, 2022



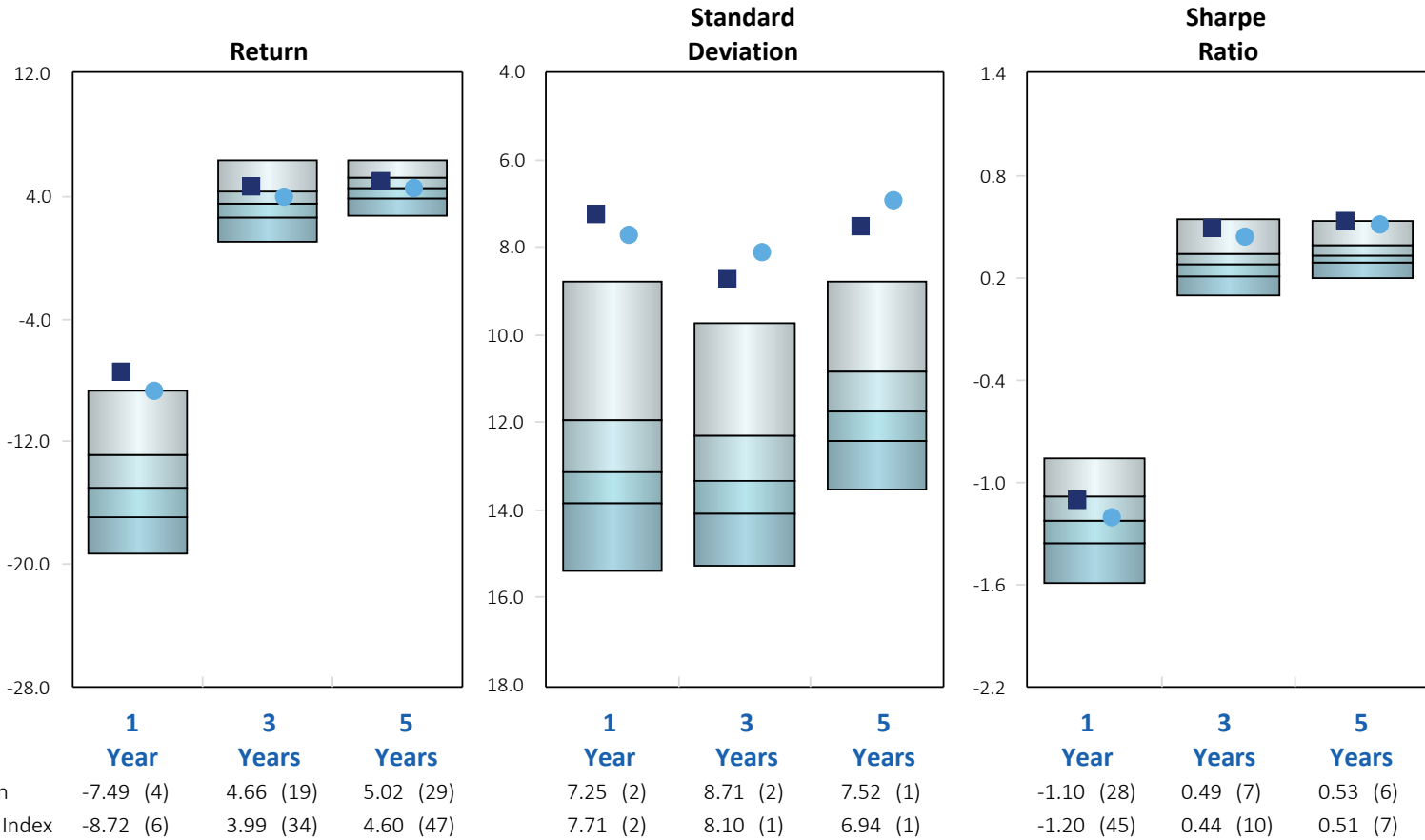
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ KERS (H) Insurance Plan	-8.24 (4)	4.83 (17)	5.23 (24)	9.03 (6)	9.77 (5)	8.48 (3)	-0.96 (11)	0.47 (9)	0.50 (8)
● KERS (H) Insurance IPS Index	-9.92 (10)	4.85 (17)	5.25 (23)	9.16 (6)	9.44 (4)	8.06 (3)	-1.14 (33)	0.48 (8)	0.53 (6)
5th Percentile	-8.67	6.38	6.35	8.78	9.74	8.78	-0.86	0.55	0.54
1st Quartile	-12.87	4.35	5.16	11.94	12.30	10.85	-1.08	0.35	0.40
Median	-14.97	3.48	4.50	13.12	13.34	11.74	-1.22	0.28	0.33
3rd Quartile	-16.97	2.61	3.90	13.85	14.10	12.41	-1.36	0.21	0.29
95th Percentile	-19.30	1.01	2.75	15.38	15.29	13.55	-1.59	0.10	0.20

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 September 30, 2022



	1 Year	3 Years	5 Years
5th Percentile	-8.67	6.38	6.35
1st Quartile	-12.87	4.35	5.16
Median	-14.97	3.48	4.50
3rd Quartile	-16.97	2.61	3.90
95th Percentile	-19.30	1.01	2.75

	1 Year	3 Years	5 Years
SPRS Pension Plan	7.25 (2)	8.71 (2)	7.52 (1)
SPRS Pension IPS Index	7.71 (2)	8.10 (1)	6.94 (1)

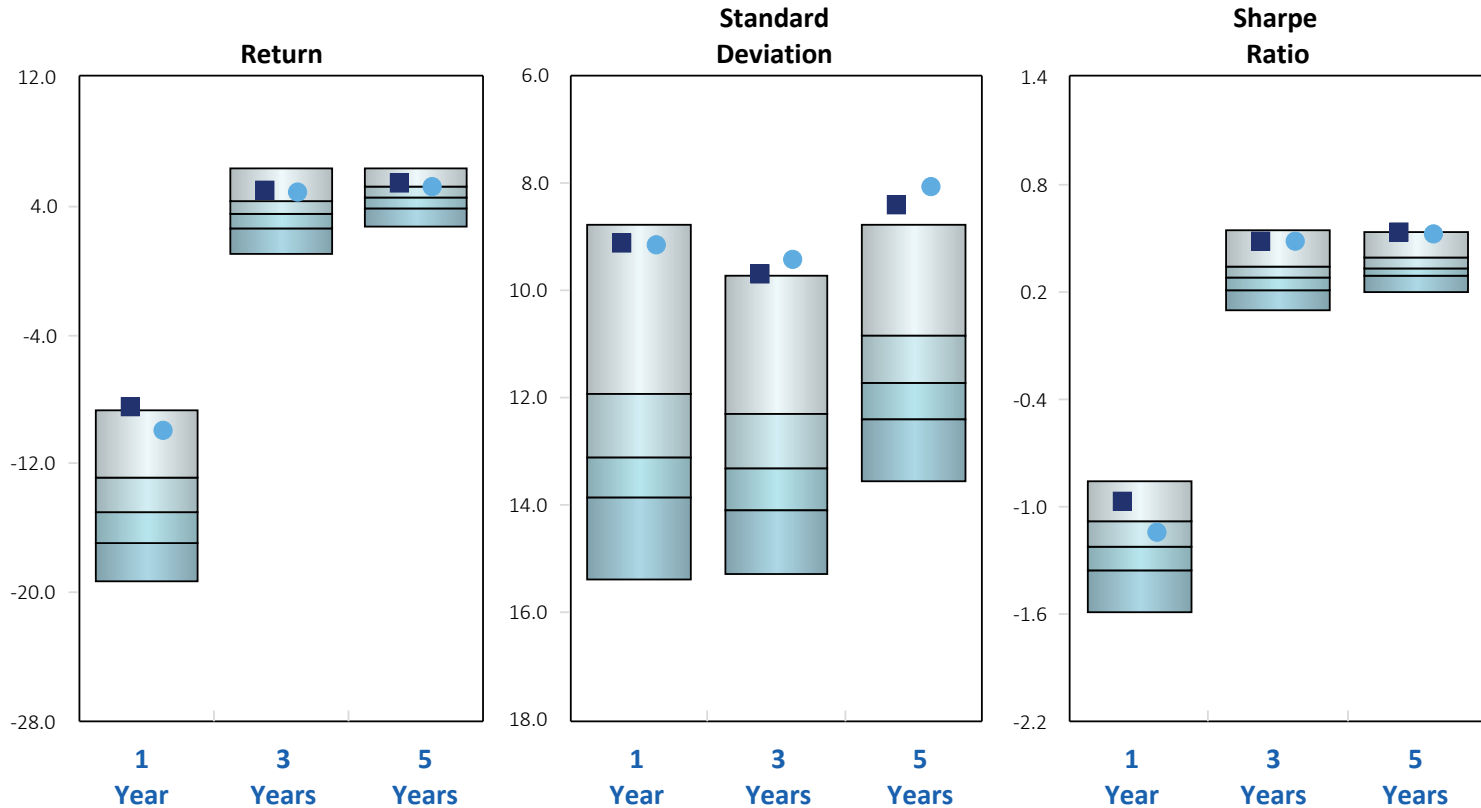
	1 Year	3 Years	5 Years
SPRS Pension Plan	-1.10 (28)	0.49 (7)	0.53 (6)
SPRS Pension IPS Index	-1.20 (45)	0.44 (10)	0.51 (7)

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 September 30, 2022



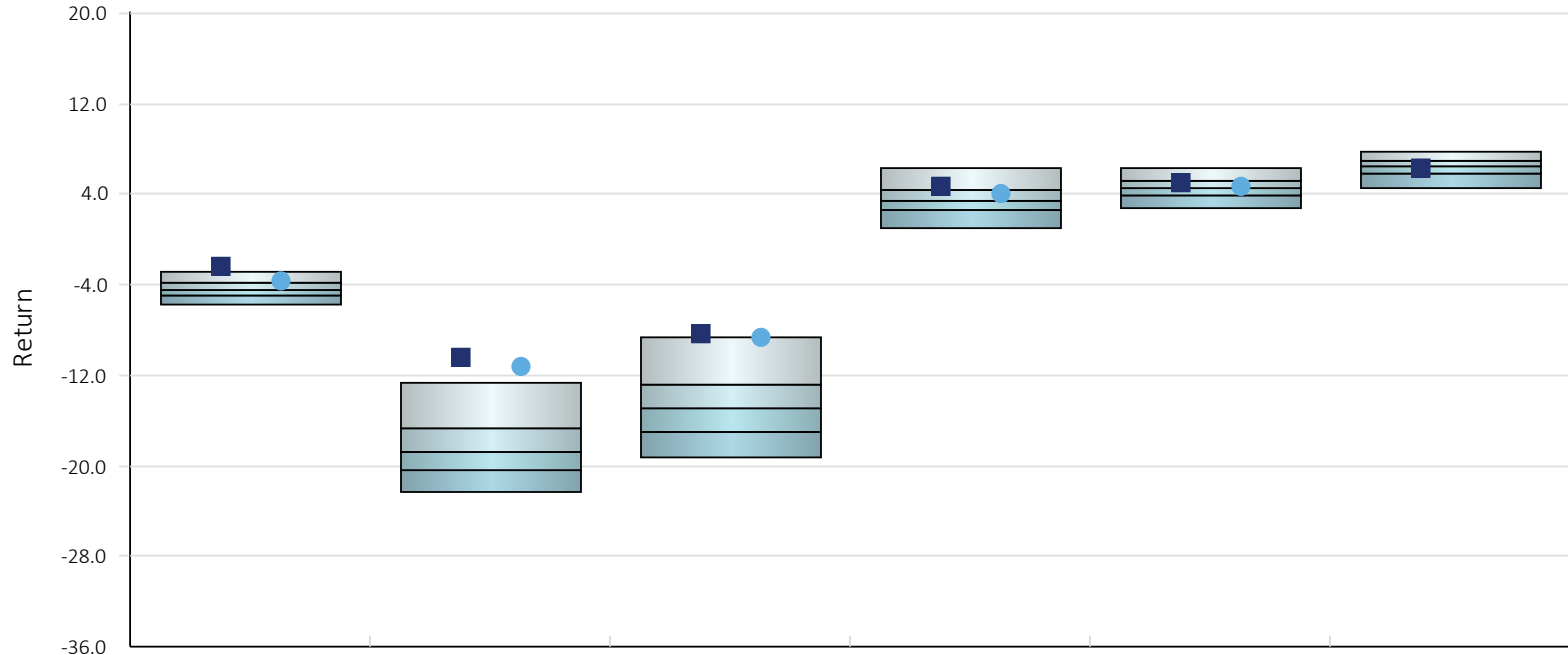
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ SPRS Insurance Plan	-8.41 (5)	5.03 (15)	5.47 (19)	9.11 (6)	9.68 (4)	8.41 (3)	-0.97 (12)	0.49 (8)	0.54 (6)
● SPRS Insurance IPS Index	-9.92 (10)	4.85 (17)	5.25 (23)	9.16 (6)	9.44 (4)	8.06 (3)	-1.14 (33)	0.48 (8)	0.53 (6)
5th Percentile	-8.67	6.38	6.35	8.78	9.74	8.78	-0.86	0.55	0.54
1st Quartile	-12.87	4.35	5.16	11.94	12.30	10.85	-1.08	0.35	0.40
Median	-14.97	3.48	4.50	13.12	13.34	11.74	-1.22	0.28	0.33
3rd Quartile	-16.97	2.61	3.90	13.85	14.10	12.41	-1.36	0.21	0.29
95th Percentile	-19.30	1.01	2.75	15.38	15.29	13.55	-1.59	0.10	0.20

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 September 30, 2022



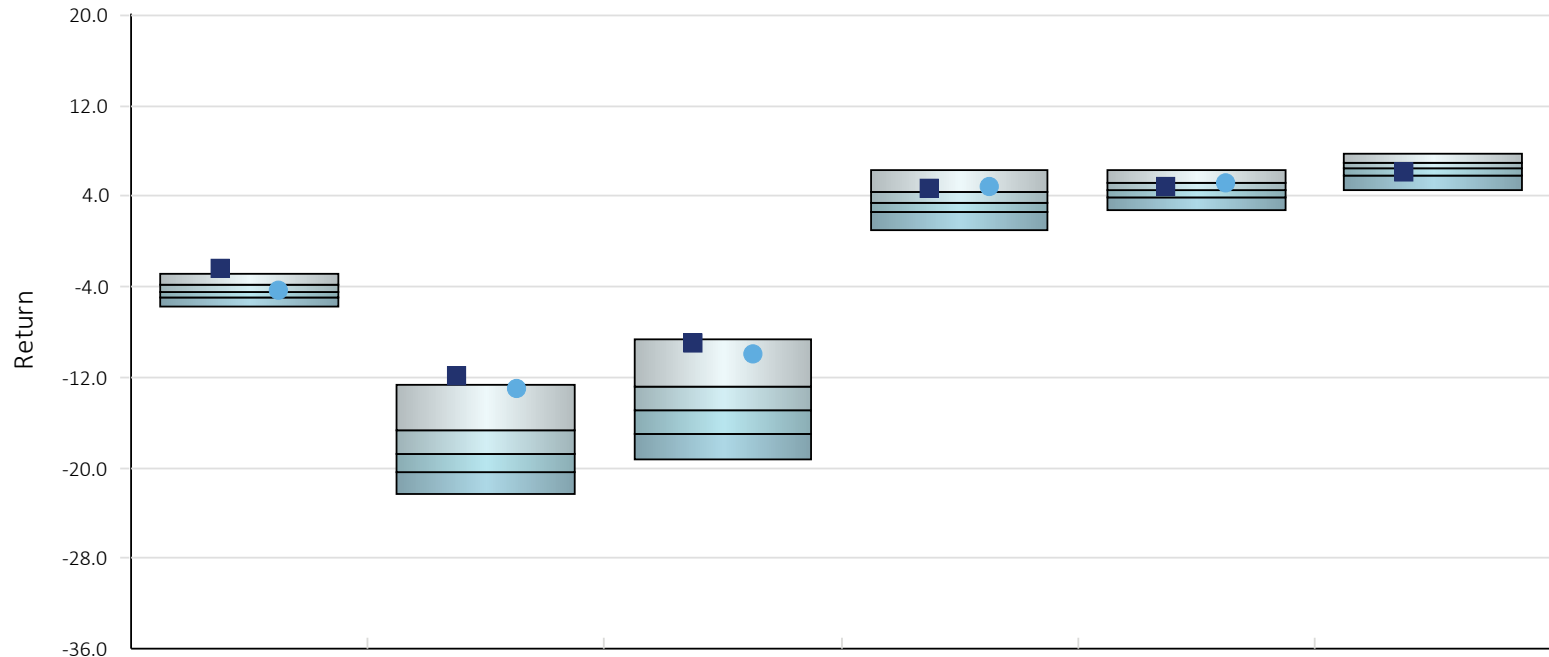
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS Pension Plan	-2.32 (3)	-10.44 (3)	-8.25 (4)	4.66 (19)	5.01 (29)	6.34 (56)
● KERS Pension IPS Index	-3.59 (16)	-11.29 (4)	-8.72 (6)	3.99 (34)	4.71 (41)	
5th Percentile	-2.79	-12.61	-8.67	6.38	6.35	7.79
1st Quartile	-3.85	-16.75	-12.87	4.35	5.16	6.98
Median	-4.38	-18.73	-14.97	3.48	4.50	6.42
3rd Quartile	-4.93	-20.35	-16.97	2.61	3.90	5.90
95th Percentile	-5.73	-22.39	-19.30	1.01	2.75	4.54
Population	520	508	503	491	472	389

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 September 30, 2022



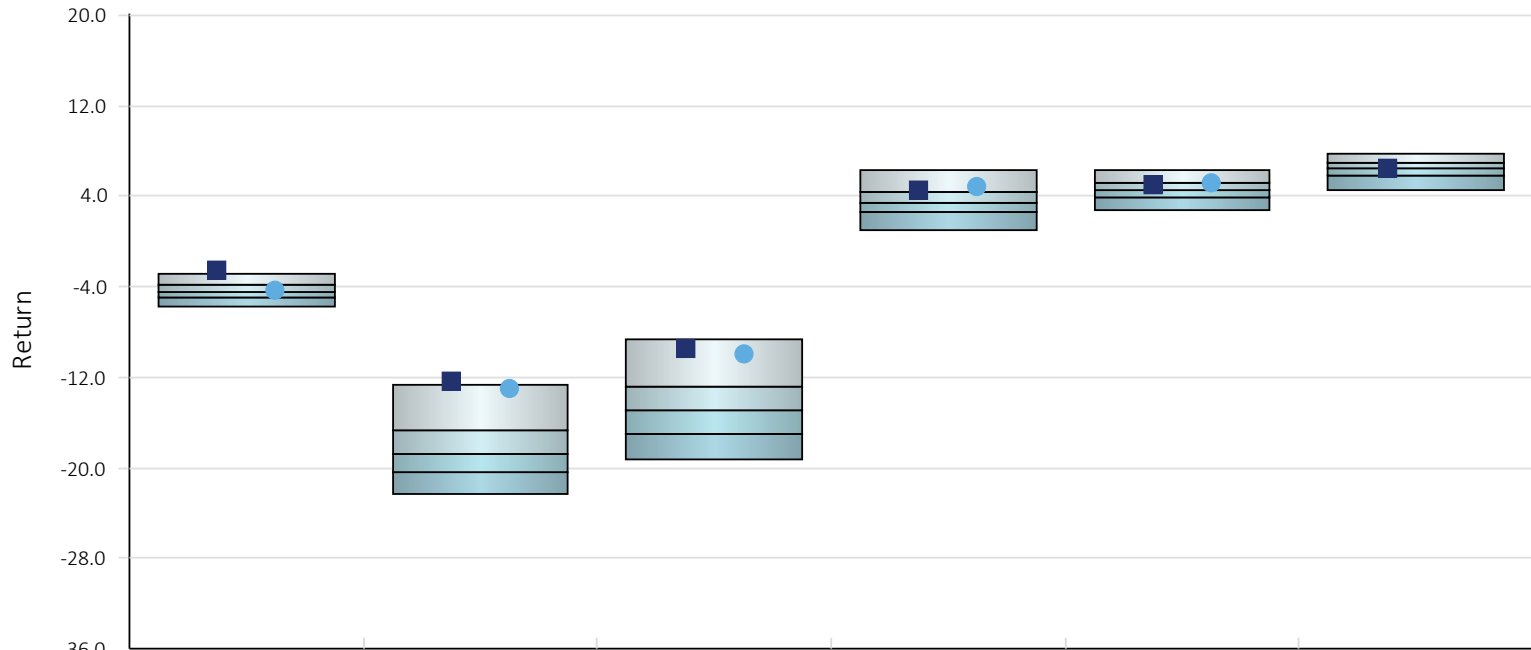
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS Insurance Plan	-2.31 (3)	-11.90 (4)	-8.93 (7)	4.72 (18)	4.84 (37)	6.17 (64)
● KERS Insurance IPS Index	-4.33 (48)	-12.99 (6)	-9.92 (10)	4.85 (17)	5.18 (25)	
5th Percentile	-2.79	-12.61	-8.67	6.38	6.35	7.79
1st Quartile	-3.85	-16.75	-12.87	4.35	5.16	6.98
Median	-4.38	-18.73	-14.97	3.48	4.50	6.42
3rd Quartile	-4.93	-20.35	-16.97	2.61	3.90	5.90
95th Percentile	-5.73	-22.39	-19.30	1.01	2.75	4.54
Population	520	508	503	491	472	389

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 September 30, 2022



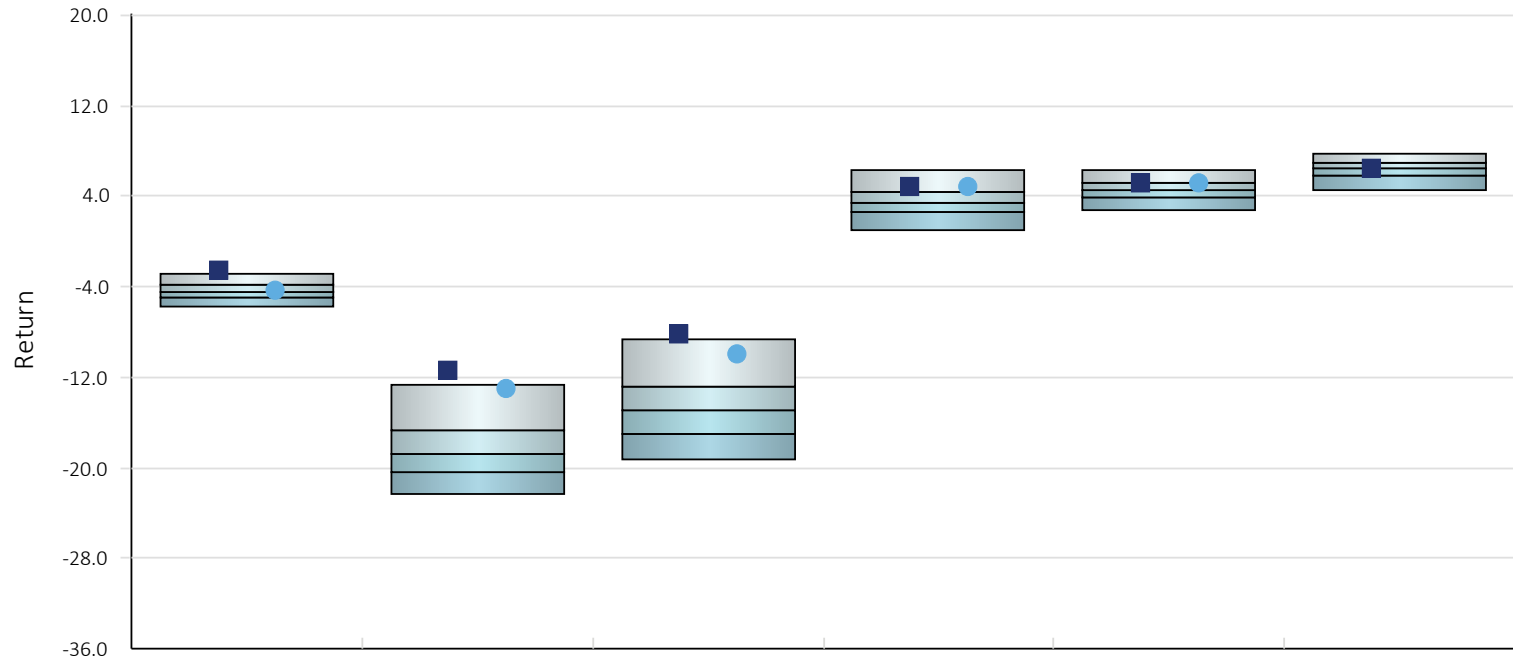
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS (H) Pension Plan	-2.60 (4)	-12.31 (5)	-9.41 (8)	4.57 (21)	5.07 (28)	6.54 (43)
● KERS (H) Pension IPS Index	-4.33 (48)	-12.99 (6)	-9.92 (10)	4.85 (17)	5.19 (24)	
5th Percentile	-2.79	-12.61	-8.67	6.38	6.35	7.79
1st Quartile	-3.85	-16.75	-12.87	4.35	5.16	6.98
Median	-4.38	-18.73	-14.97	3.48	4.50	6.42
3rd Quartile	-4.93	-20.35	-16.97	2.61	3.90	5.90
95th Percentile	-5.73	-22.39	-19.30	1.01	2.75	4.54
Population	520	508	503	491	472	389

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 September 30, 2022



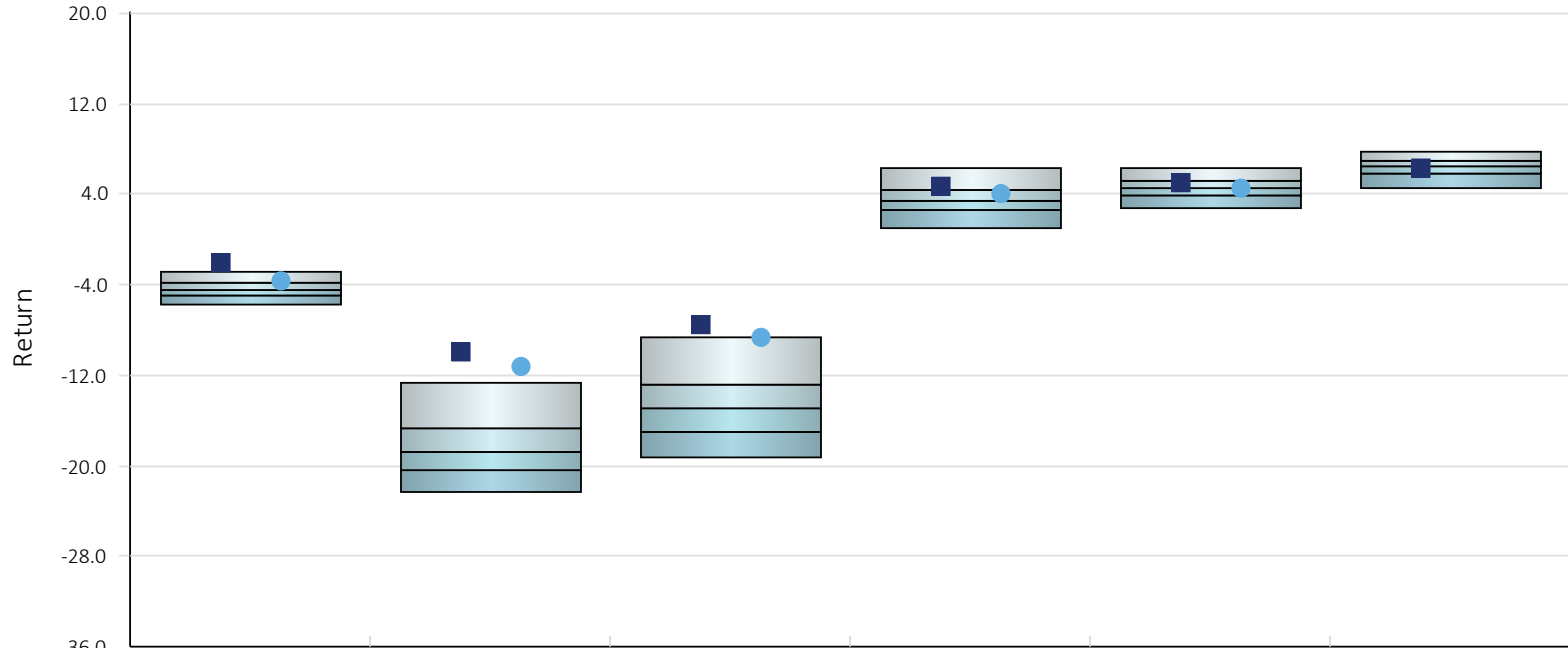
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ KERS (H) Insurance Plan	-2.55 (4)	-11.39 (4)	-8.24 (4)	4.83 (17)	5.23 (24)	6.52 (44)
● KERS (H) Insurance IPS Index	-4.33 (48)	-12.99 (6)	-9.92 (10)	4.85 (17)	5.25 (23)	
5th Percentile	-2.79	-12.61	-8.67	6.38	6.35	7.79
1st Quartile	-3.85	-16.75	-12.87	4.35	5.16	6.98
Median	-4.38	-18.73	-14.97	3.48	4.50	6.42
3rd Quartile	-4.93	-20.35	-16.97	2.61	3.90	5.90
95th Percentile	-5.73	-22.39	-19.30	1.01	2.75	4.54
Population	520	508	503	491	472	389

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 September 30, 2022



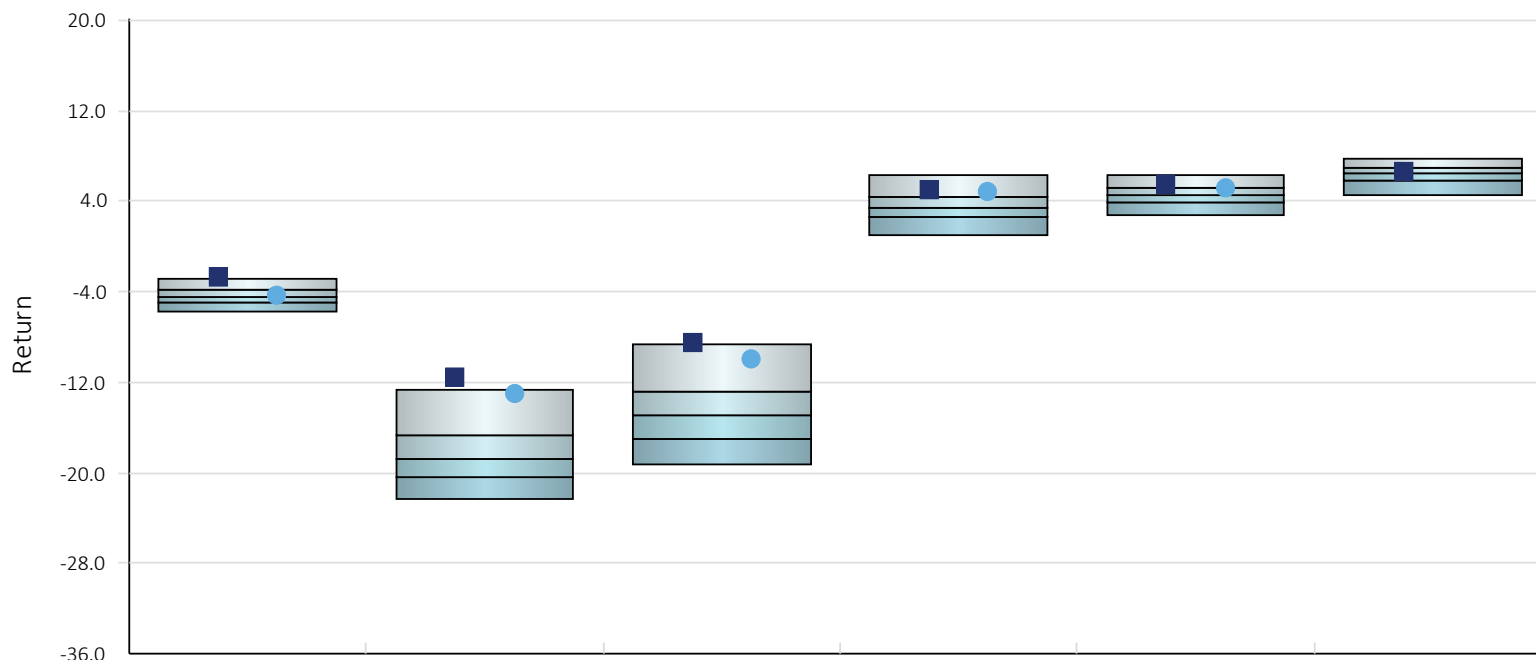
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ SPRS Pension Plan	-2.07 (3)	-9.89 (2)	-7.49 (4)	4.66 (19)	5.02 (29)	6.26 (60)
● SPRS Pension IPS Index	-3.59 (16)	-11.29 (4)	-8.72 (6)	3.99 (34)	4.60 (47)	
5th Percentile	-2.79	-12.61	-8.67	6.38	6.35	7.79
1st Quartile	-3.85	-16.75	-12.87	4.35	5.16	6.98
Median	-4.38	-18.73	-14.97	3.48	4.50	6.42
3rd Quartile	-4.93	-20.35	-16.97	2.61	3.90	5.90
95th Percentile	-5.73	-22.39	-19.30	1.01	2.75	4.54
Population	520	508	503	491	472	389

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 September 30, 2022



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ SPRS Insurance Plan	-2.61 (4)	-11.53 (4)	-8.41 (5)	5.03 (15)	5.47 (19)	6.67 (36)
● SPRS Insurance IPS Index	-4.33 (48)	-12.99 (6)	-9.92 (10)	4.85 (17)	5.25 (23)	
5th Percentile	-2.79	-12.61	-8.67	6.38	6.35	7.79
1st Quartile	-3.85	-16.75	-12.87	4.35	5.16	6.98
Median	-4.38	-18.73	-14.97	3.48	4.50	6.42
3rd Quartile	-4.93	-20.35	-16.97	2.61	3.90	5.90
95th Percentile	-5.73	-22.39	-19.30	1.01	2.75	4.54
Population	520	508	503	491	472	389

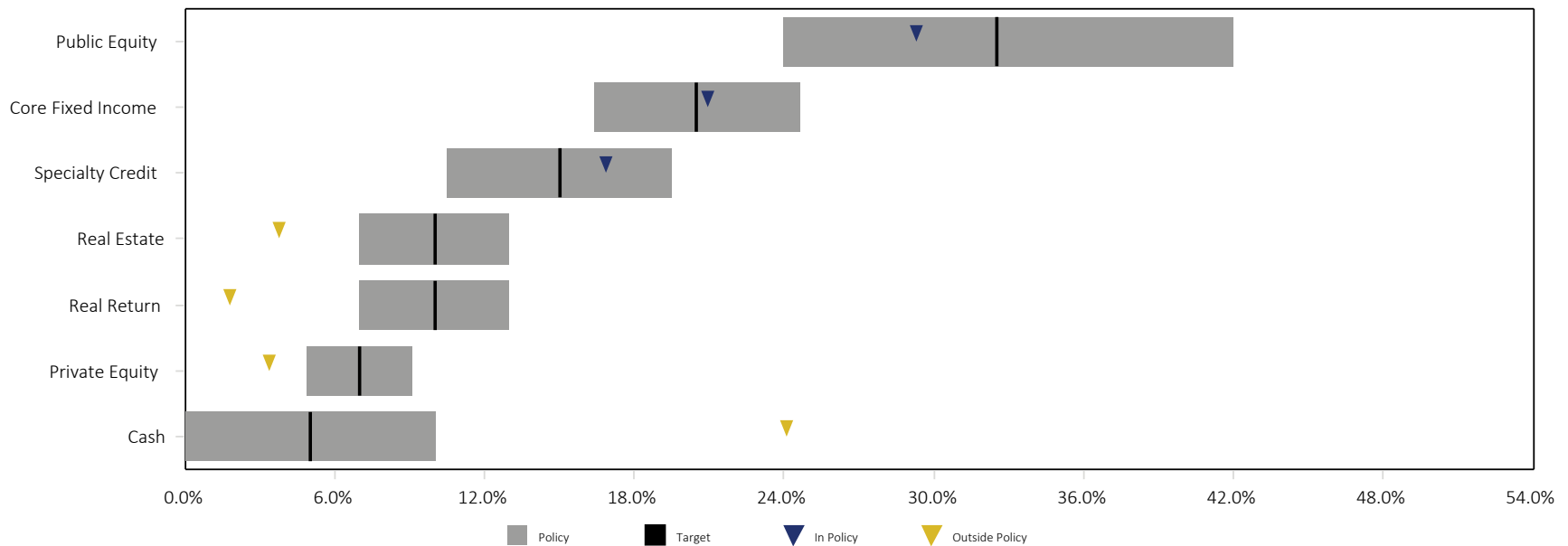
Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Asset Allocation Compliance

SPRS Pension Plan

Periods Ended As of September 30, 2022

Executive Summary



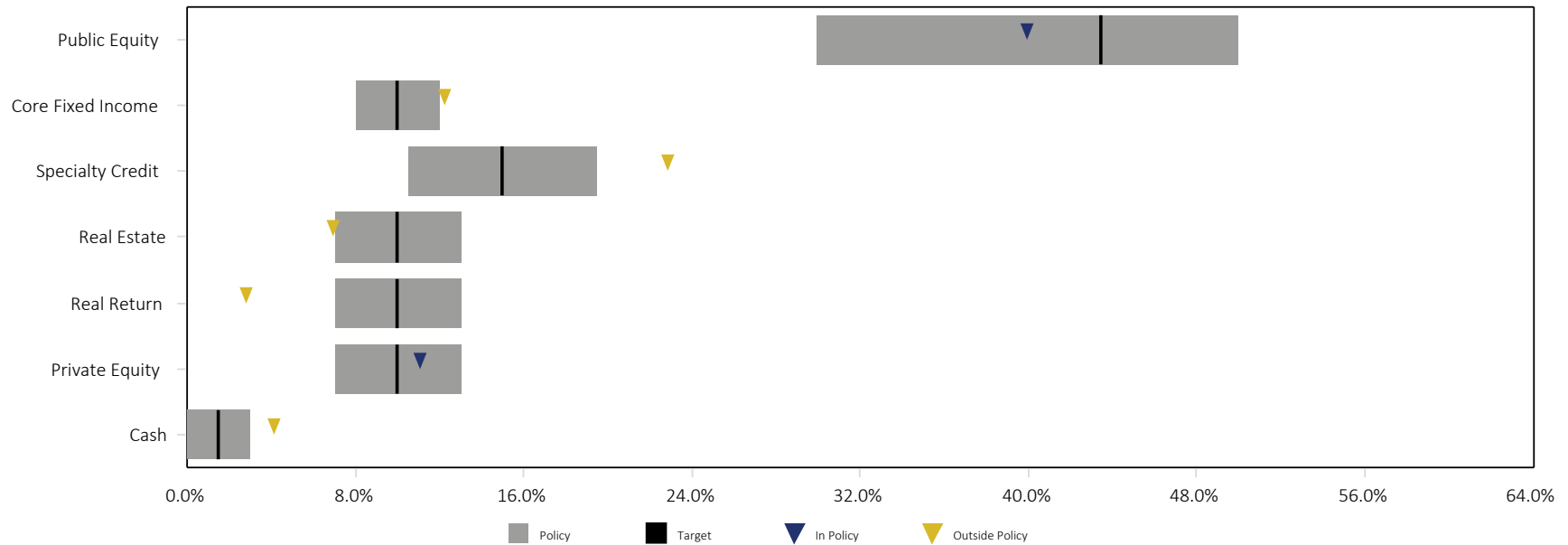
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	157,214,590	29.28	24.00	42.00	32.50	17,270,174
Core Fixed Income	112,355,785	20.93	16.40	24.60	20.50	-2,296,165
Specialty Credit	90,526,852	16.86	10.50	19.50	15.00	-9,995,422
Real Estate	20,236,764	3.77	7.00	13.00	10.00	33,450,856
Real Return	9,419,413	1.75	7.00	13.00	10.00	44,268,206
Private Equity	17,885,280	3.33	4.90	9.10	7.00	19,696,054
Cash	129,237,511	24.07	0.00	10.00	5.00	-102,393,702
Total Fund	536,876,194	100.00			100.00	

Asset Allocation Compliance

SPRS Insurance Plan

Periods Ended As of September 30, 2022

Executive Summary



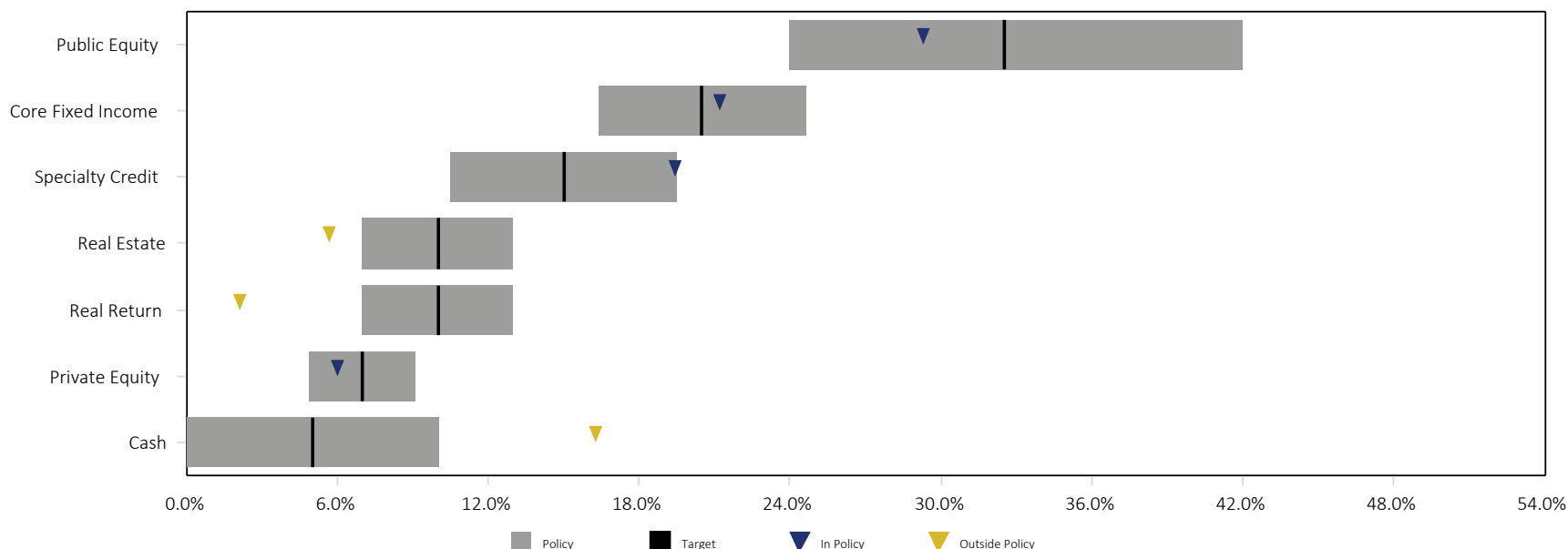
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	88,615,554	39.96	30.00	50.00	43.50	7,842,413
Core Fixed Income	27,218,624	12.27	8.00	12.00	10.00	-5,044,378
Specialty Credit	50,654,765	22.84	10.50	19.50	15.00	-17,393,398
Real Estate	15,357,335	6.93	7.00	13.00	10.00	6,816,911
Real Return	6,152,327	2.77	7.00	13.00	10.00	16,021,919
Private Equity	24,521,242	11.06	7.00	13.00	10.00	-2,346,997
Cash	9,222,606	4.16	0.00	3.00	1.50	-5,896,469
Total Fund	221,742,453	100.00			100.00	

Asset Allocation Compliance

KERS Pension Plan

Periods Ended As of September 30, 2022

Executive Summary



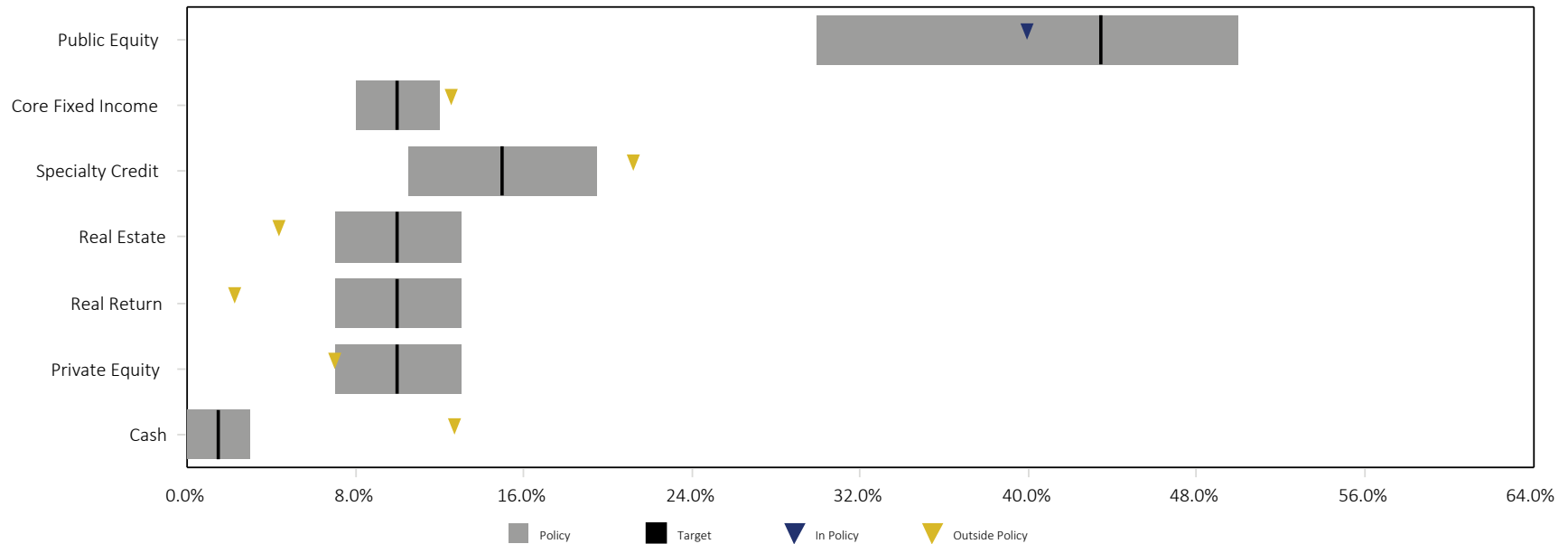
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	878,953,733	29.33	24.00	42.00	32.50	95,117,891
Core Fixed Income	636,254,156	21.23	16.40	24.60	20.50	-21,839,747
Specialty Credit	583,103,111	19.46	10.50	19.50	15.00	-133,531,592
Real Estate	169,452,358	5.65	7.00	13.00	10.00	130,261,988
Real Return	64,003,053	2.14	7.00	13.00	10.00	235,711,293
Private Equity	178,663,508	5.96	4.90	9.10	7.00	31,136,534
Cash	486,713,540	16.24	0.00	10.00	5.00	-336,856,367
Total Fund	2,997,143,459	100.00			100.00	

Asset Allocation Compliance

KERS Insurance Plan

Periods Ended As of September 30, 2022

Executive Summary



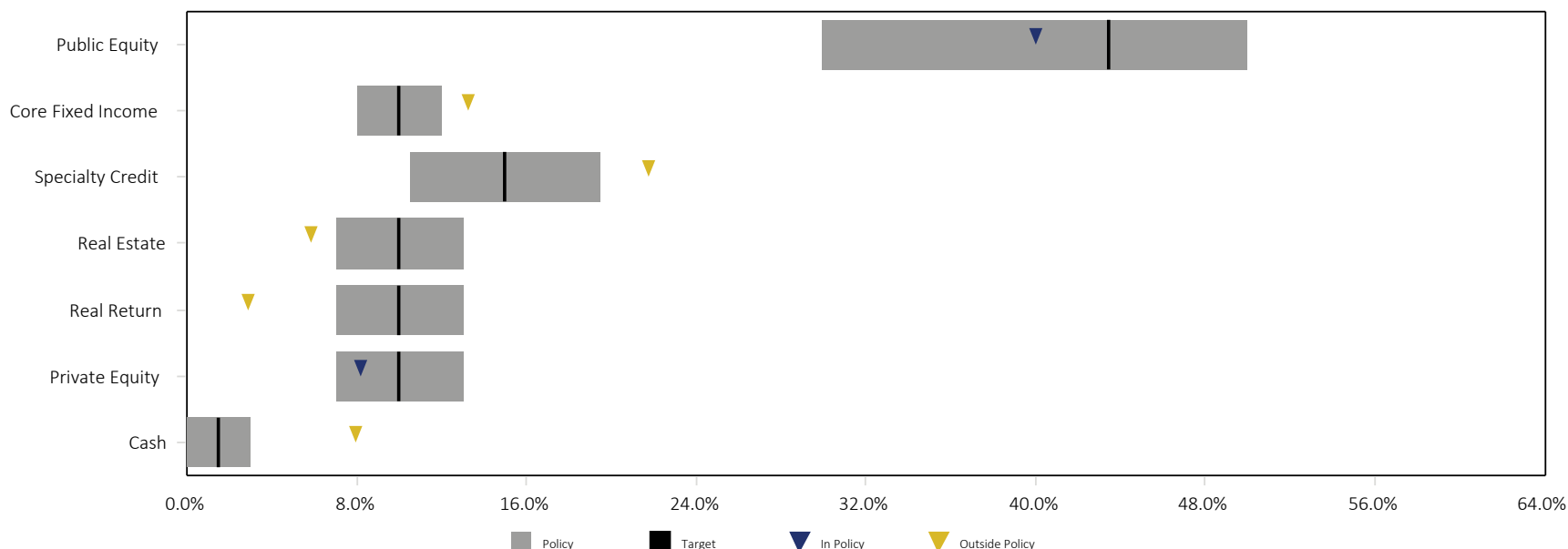
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	504,101,066	39.93	30.00	50.00	43.50	45,075,070
Core Fixed Income	158,330,693	12.54	8.00	12.00	10.00	-32,083,305
Specialty Credit	267,615,378	21.20	10.50	19.50	15.00	-78,244,296
Real Estate	54,790,455	4.34	7.00	13.00	10.00	71,456,933
Real Return	28,454,502	2.25	7.00	13.00	10.00	97,792,885
Private Equity	88,343,919	7.00	7.00	13.00	10.00	37,903,468
Cash	160,837,863	12.74	0.00	3.00	1.50	-141,900,755
Total Fund	1,262,473,877	100.00			100.00	

Asset Allocation Compliance

KERS (H) Pension Plan

Periods Ended As of September 30, 2022

Executive Summary



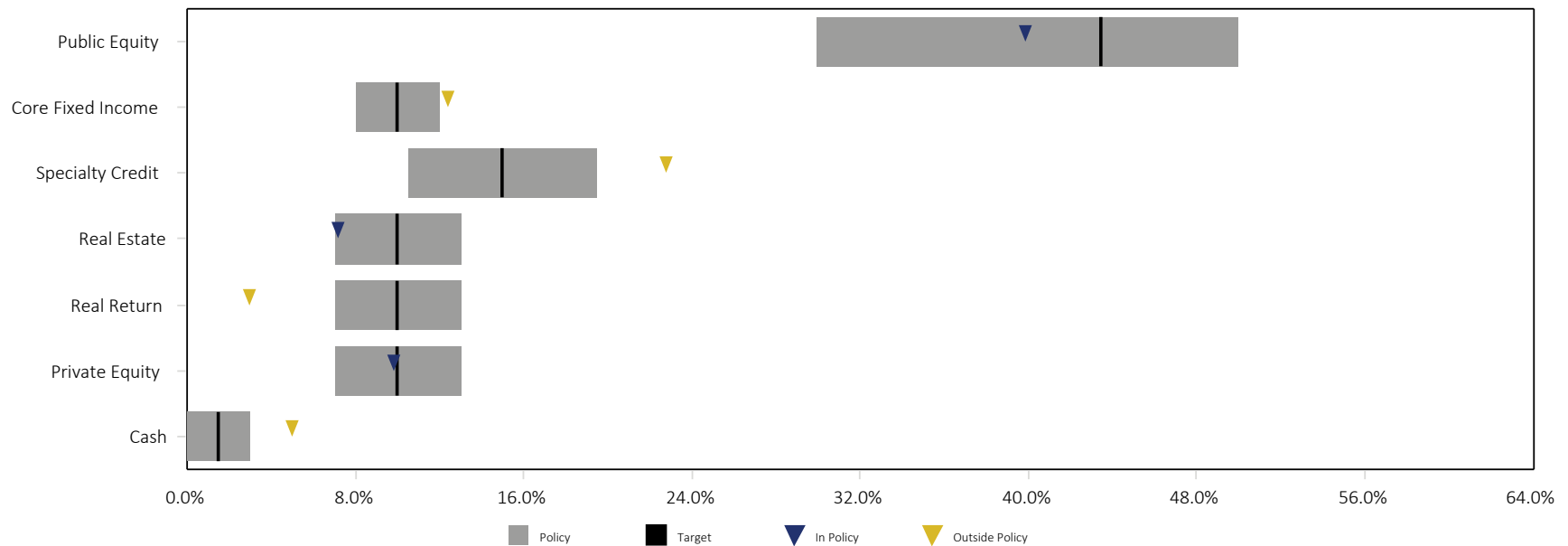
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	318,428,329	40.03	30.00	50.00	43.50	27,636,785
Core Fixed Income	105,777,907	13.30	8.00	12.00	10.00	-26,222,708
Specialty Credit	173,254,904	21.78	10.50	19.50	15.00	-53,922,106
Real Estate	46,707,083	5.87	7.00	13.00	10.00	32,848,116
Real Return	22,735,610	2.86	7.00	13.00	10.00	56,819,588
Private Equity	65,363,165	8.22	7.00	13.00	10.00	14,192,033
Cash	63,284,988	7.95	0.00	3.00	1.50	-51,351,708
Total Fund	795,551,986	100.00			100.00	

Asset Allocation Compliance

KERS (H) Insurance Plan

Periods Ended As of September 30, 2022

Executive Summary



	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Target Rebalance \$
Public Equity	223,280,423	39.84	30.00	50.00	43.50	20,481,842
Core Fixed Income	69,361,090	12.38	8.00	12.00	10.00	-13,323,788
Specialty Credit	127,837,337	22.81	10.50	19.50	15.00	-43,781,383
Real Estate	40,150,049	7.16	7.00	13.00	10.00	15,887,253
Real Return	16,486,224	2.94	7.00	13.00	10.00	39,551,079
Private Equity	55,141,003	9.84	7.00	13.00	10.00	896,300
Cash	28,116,898	5.02	0.00	3.00	1.50	-19,711,303
Total Fund	560,373,024	100.00			100.00	

Asset Allocation & Performance

Total Fund

Periods Ended September 30, 2022

	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	2,997,143,459	-2.32	-10.44	-2.32	-8.25	4.66	5.01	6.34	6.76	7.48	8.61	4/1/1984
KERS Pension IPS Index		-3.59	-11.29	-3.59	-8.72	3.99	4.71					
Value Added		1.27	0.85	1.27	0.47	0.67	0.30					
KERS Pension Attribution Index		-2.80	-11.75	-2.80	-9.09	3.89						
Value Added		0.48	1.31	0.48	0.84	0.77						
Assumed Rate 5.25%		1.29	3.91	1.29	5.25	5.25	5.25					
Value Added		-3.61	-14.35	-3.61	-13.50	-0.59	-0.24					
KERS Insurance Plan	1,262,473,877	-2.31	-11.90	-2.31	-8.93	4.72	4.84	6.17	6.67	6.55	7.07	4/1/1987
KERS Insurance IPS Index		-4.33	-12.99	-4.33	-9.92	4.85	5.18					
Value Added		2.02	1.09	2.02	0.99	-0.13	-0.34					
KERS Insurance Attribution Index		-2.26	-11.09	-2.26	-7.46	5.15						
Value Added		-0.05	-0.81	-0.05	-1.47	-0.43						
Assumed Rate 6.25%		1.53	4.65	1.53	6.25	6.25	6.25					
Value Added		-3.84	-16.55	-3.84	-15.18	-1.53	-1.41					
KERS (H) Pension Plan	795,551,986	-2.60	-12.31	-2.60	-9.41	4.57	5.07	6.54	6.86	7.55	8.67	4/1/1984
KERS (H) Pension IPS Index		-4.33	-12.99	-4.33	-9.92	4.85	5.19					
Value Added		1.73	0.68	1.73	0.51	-0.28	-0.12					
KERS (H) Pension Attribution Index		-2.81	-12.19	-2.81	-8.80	4.76						
Value Added		0.21	-0.12	0.21	-0.61	-0.19						
Assumed Rate 6.25%		1.53	4.65	1.53	6.25	6.25	6.25					
Value Added		-4.13	-16.96	-4.13	-15.66	-1.68	-1.18					

Asset Allocation & Performance

Total Fund

Periods Ended September 30, 2022

	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 (H) Insurance Plan	560,373,024	-2.55	-11.39	-2.55	-8.24	4.83	5.23	6.52	6.85	6.67	7.16	4/1/1987
KERS (H) Insurance IPS Index		-4.33	-12.99	-4.33	-9.92	4.85	5.25					
Value Added		1.78	1.60	1.78	1.68	-0.02	-0.02					
KERS (H) Insurance Attribution Index		-2.73	-11.92	-2.73	-8.38	4.70						
Value Added		0.18	0.53	0.18	0.14	0.13						
Assumed Rate 6.25%		1.53	4.65	1.53	6.25	6.25	6.25					
Value Added		-4.08	-16.04	-4.08	-14.49	-1.42	-1.02					
SPRS Pension Plan	536,876,194	-2.07	-9.89	-2.07	-7.49	4.66	5.02	6.26	6.72	7.45	8.59	4/1/1984
SPRS Pension IPS Index		-3.59	-11.29	-3.59	-8.72	3.99	4.60					
Value Added		1.52	1.40	1.52	1.23	0.67	0.42					
SPRS Pension Attribution Index		-2.64	-11.29	-2.64	-8.54	3.88						
Value Added		0.57	1.40	0.57	1.05	0.78						
Assumed Rate 5.25%		1.29	3.91	1.29	5.25	5.25	5.25					
Value Added		-3.36	-13.80	-3.36	-12.74	-0.59	-0.23					
SPRS Insurance Plan	221,742,453	-2.61	-11.53	-2.61	-8.41	5.03	5.47	6.67	6.92	6.72	7.21	4/1/1987
SPRS Insurance IPS Index		-4.33	-12.99	-4.33	-9.92	4.85	5.25					
Value Added		1.72	1.46	1.72	1.51	0.18	0.22					
SPRS Insurance Attribution Index		-2.73	-11.96	-2.73	-8.41	4.72						
Value Added		0.12	0.43	0.12	0.00	0.31						
Assumed Rate 6.25%		1.53	4.65	1.53	6.25	6.25	6.25					
Value Added		-4.14	-16.18	-4.14	-14.66	-1.22	-0.78					

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Public Equity	-9.33	-6.23	-26.23	-6.23				-23.21	12/1/2021
Public Equity Policy Index	-9.71	-7.08	-25.73	-7.08				-22.73	
Value Added	0.38	0.85	-0.50	0.85				-0.48	
US Equity Composite	-9.22	-4.24	-23.96	-4.24	-17.02	7.48	8.24	10.92	4/1/1984
Russell 3000 Index	-9.27	-4.46	-24.62	-4.46	-17.63	7.70	8.62	10.82	
Value Added	0.05	0.22	0.66	0.22	0.61	-0.22	-0.38	0.10	
S&P 500 Index	-9.25	-4.90	-23.72	-4.90	-15.34	8.51	9.52	7.65	7/1/2001
S&P 500 Index	-9.21	-4.88	-23.87	-4.88	-15.47	8.16	9.24	7.26	
Value Added	-0.04	-0.02	0.15	-0.02	0.13	0.35	0.28	0.39	
Scientific Beta	-9.10	-5.46	-21.56	-5.46	-14.26	4.46	6.76	8.25	7/1/2016
S&P 500 Index	-9.21	-4.88	-23.87	-4.88	-15.47	8.16	9.24	10.96	
Value Added	0.11	-0.58	2.31	-0.58	1.21	-3.70	-2.48	-2.71	
River Road FAV	-9.83	-6.38	-25.46	-6.38	-21.49	-1.38	3.00	6.86	7/1/2016
Russell 3000 Value Index	-8.86	-5.56	-17.97	-5.56	-11.79	4.37	5.11	7.15	
Value Added	-0.97	-0.82	-7.49	-0.82	-9.70	-5.75	-2.11	-0.29	
Westfield Capital	-9.53	-2.79	-28.63	-2.79	-22.18	10.49	11.61	12.10	7/1/2011
Russell 3000 Growth Index	-9.68	-3.37	-30.57	-3.37	-23.01	10.16	11.57	12.86	
Value Added	0.15	0.58	1.94	0.58	0.83	0.33	0.04	-0.76	
Internal US Mid Cap	-9.14	-2.32	-21.44	-2.32	-15.17	6.45	6.43	8.00	8/1/2014
S&P MidCap 400 Index	-9.19	-2.46	-21.52	-2.46	-15.25	6.01	5.82	7.67	
Value Added	0.05	0.14	0.08	0.14	0.08	0.44	0.61	0.33	
NTGI Structured	-9.57	-3.21	-22.91	-3.21	-19.45	5.83	5.30	9.24	10/1/1999
Russell 2000 Index	-9.58	-2.19	-25.10	-2.19	-23.50	4.29	3.55	7.50	
Value Added	0.01	-1.02	2.19	-1.02	4.05	1.54	1.75	1.74	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Next Century Growth	-6.39	9.47	-26.05	9.47	-25.76			28.77	11/1/2019
Russell Microcap Growth Index	-9.33	2.14	-31.60	2.14	-37.05			3.67	
Value Added	2.94	7.33	5.55	7.33	11.29			25.10	
Non-US Equity Composite	-9.49	-9.11	-29.26	-9.11	-28.58	-1.42	-0.11	2.56	7/1/2000
MSCI ACWI ex US IMI (10/17)	-10.14	-9.69	-26.92	-9.69	-25.72	-1.27	-0.78	2.61	
Value Added	0.65	0.58	-2.34	0.58	-2.86	-0.15	0.67	-0.05	
BlackRock World Ex US	-9.20	-9.11	-25.90	-9.11	-23.54	-0.76	-0.26	4.75	7/1/2009
MSCI World ex US (11/19)	-9.26	-9.20	-26.23	-9.20	-23.91	-1.13	-0.58	4.49	
Value Added	0.06	0.09	0.33	0.09	0.37	0.37	0.32	0.26	
American Century	-9.65	-7.77	-35.23	-7.77	-33.49	1.32	3.00	3.44	7/1/2014
MSCI ACWI ex US IMI (10/17)	-10.14	-9.69	-26.92	-9.69	-25.72	-1.27	-0.78	0.72	
Value Added	0.49	1.92	-8.31	1.92	-7.77	2.59	3.78	2.72	
Franklin Templeton	-10.71	-7.41	-38.38	-7.41	-39.59	-5.08	-1.20	1.89	7/1/2014
MSCI ACWI ex US IMI (10/17)	-10.14	-9.69	-26.92	-9.69	-25.72	-1.27	-0.78	0.72	
Value Added	-0.57	2.28	-11.46	2.28	-13.87	-3.81	-0.42	1.17	
Lazard Asset Mgmt	-9.15	-9.74	-26.06	-9.74	-26.36	-1.94	-0.06	1.36	7/1/2014
MSCI ACWI ex US IMI (10/17)	-10.14	-9.69	-26.92	-9.69	-25.72	-1.27	-0.78	0.72	
Value Added	0.99	-0.05	0.86	-0.05	-0.64	-0.67	0.72	0.64	
LSV Asset Mgmt	-8.92	-10.97	-24.65	-10.97	-23.91	-2.37	-1.53	0.27	7/1/2014
MSCI ACWI ex US IMI (10/17)	-10.14	-9.69	-26.92	-9.69	-25.72	-1.27	-0.78	0.72	
Value Added	1.22	-1.28	2.27	-1.28	1.81	-1.10	-0.75	-0.45	
Axiom	-10.02	-7.69	-38.75	-7.69				-35.97	12/1/2021
MSCI AC World ex USA Small Cap (Net)	-11.04	-8.37	-29.37	-8.37				-26.38	
Value Added	1.02	0.68	-9.38	0.68				-9.59	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
JP Morgan Emerging Markets	-11.01	-10.61	-35.42	-10.61	-37.94			-4.00	11/1/2019
MSCI Emerging Markets IMI	-11.46	-10.62	-26.51	-10.62	-27.18			-2.24	
Value Added	0.45	0.01	-8.91	0.01	-10.76			-1.76	
Pzena Emerging Markets	-9.13	-7.74	-17.93	-7.74	-19.03			0.34	11/1/2019
MSCI Emerging Markets (Net)	-11.72	-11.57	-27.16	-11.57	-28.11			-3.50	
Value Added	2.59	3.83	9.23	3.83	9.08			3.84	
Private Equity Composite	-1.79	-1.90	4.13	-1.90	8.25	17.74	15.92	12.27	7/1/2002
KRS Short-Term PE Index	-1.79	-1.90	4.13	-1.90	8.25	17.74	15.92	12.27	
Value Added	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Russell 3000 +3% 1 Quarter Lag	-8.14	-16.08	-11.85	-16.08	-11.28	13.07	13.92	11.52	
Value Added	6.35	14.18	15.98	14.18	19.53	4.67	2.00	0.75	
Core Fixed Composite	-2.25	-1.97	-7.21	-1.97	-7.57	-0.17		1.81	10/1/2018
Blmbg. U.S. Aggregate	-4.32	-4.75	-14.61	-4.75	-14.60	-3.26		-0.03	
Value Added	2.07	2.78	7.40	2.78	7.03	3.09		1.84	
Loomis Sayles Intrmd	-3.52	-3.88	-11.20	-3.88	-11.67	-1.81		-0.05	2/1/2019
Blmbg. U.S. Intermediate Aggregate	-3.48	-3.84	-11.04	-3.84	-11.49	-2.33		-0.52	
Value Added	-0.04	-0.04	-0.16	-0.04	-0.18	0.52		0.47	
Lord Abbett	-1.70	-1.19	-5.37	-1.19	-5.74	-0.22		1.19	10/1/2018
ICE BofAML 1-3 Year U.S. Corporate	-1.45	-1.30	-5.39	-1.30	-5.91	-0.20		1.16	
Value Added	-0.25	0.11	0.02	0.11	0.17	-0.02		0.03	
NISA	-4.38	-4.73	-14.36	-4.73	-14.35	-2.78	0.05	2.73	2/1/2009
Blmbg. U.S. Aggregate	-4.32	-4.75	-14.61	-4.75	-14.60	-3.26	-0.27	2.47	
Value Added	-0.06	0.02	0.25	0.02	0.25	0.48	0.32	0.26	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
High Yield / Specialty Credit Composite	-0.60	0.32	-1.94	0.32	-0.47	4.20		4.98	10/1/2018
Policy Index	-3.12	0.39	-9.08	0.39	-8.41	0.92		1.86	
Value Added	2.52	-0.07	7.14	-0.07	7.94	3.28		3.12	
Adams St SPC II A	0.56	0.56	14.81	0.56	16.60			15.56	6/1/2020
Adams St SPC II B	2.29	2.29	-0.76	2.29	1.14			9.91	6/1/2020
Arrowmark	-0.43	1.69	4.86	1.69	8.10	8.38		8.84	6/1/2018
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53	2.21		2.70	
Value Added	1.84	0.32	8.11	0.32	10.63	6.17		6.14	
Blue Torch	2.87	2.87	9.02	2.87	13.28			8.97	8/1/2020
BSP Coinvestment	1.68	1.68	5.02	1.68	6.68	6.45		6.45	10/1/2019
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53	2.21		2.21	
Value Added	3.95	0.31	8.27	0.31	9.21	4.24		4.24	
BSP Private Credit	-1.01	-1.01	2.48	-1.01	5.40	6.73		5.55	2/1/2018
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53	2.21		2.74	
Value Added	1.26	-2.38	5.73	-2.38	7.93	4.52		2.81	
Capital Springs	-0.55	-0.55	4.45	-0.55	5.08			8.49	2/1/2020
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53			1.62	
Value Added	1.72	-1.92	7.70	-1.92	7.61			6.87	
Cerberus Capital Mgmt	0.83	1.86	7.80	1.86	10.47	11.61	10.58	9.69	9/1/2014
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53	2.21	2.98	3.20	
Value Added	3.10	0.49	11.05	0.49	13.00	9.40	7.60	6.49	
Columbia	-3.71	-0.10	-13.48	-0.10	-12.77	-0.38	1.87	4.97	11/1/2011
Blmbg. U.S. Corp: High Yield	-3.97	-0.65	-14.74	-0.65	-14.14	-0.45	1.57	4.74	
Value Added	0.26	0.55	1.26	0.55	1.37	0.07	0.30	0.23	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Manulife Asset Mgmt	-3.79	-1.59	-12.00	-1.59	-11.97	0.36	1.59	3.17	12/1/2011
Policy Index	-4.31	-4.45	-14.90	-4.45	-14.92	-3.11	-0.18	0.64	
Value Added	0.52	2.86	2.90	2.86	2.95	3.47	1.77	2.53	
Marathon Bluegrass	0.76	-3.06	-3.41	-3.06	-0.26	4.53	5.14	6.18	1/1/2016
Blmbg. U.S. Corp: High Yield	-3.97	-0.65	-14.74	-0.65	-14.14	-0.45	1.57	4.60	
Value Added	4.73	-2.41	11.33	-2.41	13.88	4.98	3.57	1.58	
Shenkman Capital	-2.61	0.87	-3.96	0.87	-3.21	1.74	2.74	3.94	10/1/2010
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53	2.21	2.98	4.01	
Value Added	-0.34	-0.50	-0.71	-0.50	-0.68	-0.47	-0.24	-0.07	
Waterfall	1.98	3.97	1.81	3.97	3.34	3.42	5.36	9.56	2/1/2010
Policy Index	-2.06	0.43	-8.86	0.43	-8.65	0.34	1.76	4.03	
Value Added	4.04	3.54	10.67	3.54	11.99	3.08	3.60	5.53	
White Oak Yield Spectrum	1.18	1.18	4.45	1.18	5.69	5.85		5.34	3/1/2018
Morningstar LSTA US Leveraged Loan	-2.27	1.37	-3.25	1.37	-2.53	2.21		2.75	
Value Added	3.45	-0.19	7.70	-0.19	8.22	3.64		2.59	
H/2 Credit Partner	0.00	0.00	5.07	0.00	1.62	2.60	1.39	4.32	7/1/2011
Mesa West Core Lend	1.06	1.06	3.93	1.06	3.94	5.49	6.50	6.53	5/1/2013
Mesa West IV	-2.35	-2.35	1.12	-2.35	4.25	6.60	6.86	5.97	3/1/2017
Cash Composite	0.21	0.56	0.76	0.56	0.79	0.75	1.35	3.30	1/1/1988
FTSE 3 Month T-Bill	0.20	0.45	0.62	0.45	0.63	0.57	1.13	2.89	
Value Added	0.01	0.11	0.14	0.11	0.16	0.18	0.22	0.41	

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Real Estate Composite	-0.25	2.72	17.41	2.72	23.15	15.19	12.75	6.85	7/1/1984
NCREIF ODCE NOF 1 Quarter Lag	4.54	4.54	20.58	4.54	28.31	11.66	9.55		
Value Added	-4.79	-1.82	-3.17	-1.82	-5.16	3.53	3.20		
Baring	-5.44	-9.10	1.72	-9.10	1.96	14.29		17.71	1/1/2019
Barings Euro RE II	-2.34	-5.28	-4.66	-5.28	18.40			-18.93	12/1/2020
Divcowest IV	0.64	0.64	21.05	0.64	29.68	11.08	16.34	19.29	3/1/2014
Fundamental Partners III	0.90	0.90	15.58	0.90	26.62	20.73	16.09	15.09	5/1/2017
Greenfield Acq VI	-12.58	-12.58	-23.14	-12.58	-7.47	-43.25	-37.98	-17.21	12/1/2012
Greenfield Acq VII	4.48	4.48	23.31	4.48	24.75	20.01	17.91	15.59	7/1/2014
Harrison Street	0.00	6.19	11.83	6.19	13.82	8.54	8.20	8.46	5/1/2012
Lubert Adler VII	-0.35	-0.35	9.56	-0.35	12.49	-2.81	2.66	-0.63	7/1/2014
Lubert Adler VII B	3.06	3.06	17.77	3.06	38.02	24.80	16.66	15.80	7/1/2017
Patron Capital	0.19	-3.63	2.37	-3.63	6.95	6.32	10.08	4.55	8/1/2016
Prologis Targeted US	0.00	5.80	34.57	5.80	50.06	28.28	23.81	19.99	10/1/2014
Rubenstein PF II	-6.16	-6.16	-2.54	-6.16	-2.25	-4.93	2.68	7.38	7/1/2013
Stockbridge Sm/Mkts	0.00	0.00	20.34	0.00	20.34	13.74	11.45	10.73	5/1/2014
Walton St RE VI	3.26	3.26	14.59	3.26	18.31	3.94	4.19	-11.96	5/1/2009
Walton St RE VII	6.24	6.24	6.81	6.24	8.12	-1.01	0.19	6.31	7/1/2013

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Real Return Composite	-2.86	2.69	1.77	2.69	4.78	5.54	4.55	4.29	7/1/2011
Real Return (P)	-2.86	2.69	1.77	2.69	4.78	5.54	4.51	3.54	
Value Added	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.75	
Putnam	-0.22	-0.71	-6.34	-0.71	-2.05			9.77	7/1/2020
Policy Index	-7.28	-4.79	-20.80	-4.79	-16.89			1.60	
Value Added	7.06	4.08	14.46	4.08	14.84			8.17	
Tortoise Capital	-7.68	8.09	20.15	8.09	22.29	5.95	2.41	8.63	8/1/2009
Alerian MLP Index	-7.62	8.05	18.90	8.05	19.56	4.46	1.90	5.87	
Value Added	-0.06	0.04	1.25	0.04	2.73	1.49	0.51	2.76	
Amerra AGRI Fund II	5.08	5.08	17.17	5.08	17.59	12.68	6.86	6.42	12/1/2012
Amerra AGRI Holdings	-1.38	-1.38	-0.31	-1.38	-0.50	-2.05	-1.92	-1.41	8/1/2015
BTG Pactual	-0.58	-0.58	9.91	-0.58	11.13	3.71	2.20	-2.93	12/1/2014
IFM Infrastructure	0.72	0.72	2.87	0.72	2.89	4.24		4.25	7/1/2019
Magnetar MTP EOF II	4.74	4.74	195.01	4.74	207.78	69.93	42.57	27.47	8/1/2015
Oberland Capital	2.52	2.52	6.54	2.52	15.00	13.48		13.76	8/1/2018
Taurus Mine Finance	17.33	17.33	68.92	17.33	81.53	12.77	14.29	14.94	4/1/2015
TPF II	-1.48	-1.48	34.64	-1.48	34.47	5.82	5.95	-0.44	10/1/2008
Blackstone Strat Opp	0.08	0.40	3.95	0.40	5.78	-3.30	-2.17	-2.01	8/1/2017
Luxor Capital	-0.04	-0.12	0.31	-0.12	10.40	-7.87	0.50	-0.42	4/1/2014
Myriad Opportunities	-0.04	-0.29	-43.20	-0.29	-48.55	-21.03	-14.54	-9.38	5/1/2016
Pine River	-0.17	5.11	-8.85	5.11	-6.46	2.86	4.53	2.83	5/1/2014
PRISMA Capital	-0.25	-0.78	-1.00	-0.78	-2.30	-0.16	0.89	2.39	9/1/2011

Asset Allocation & Performance

Pension Plan Accounts

Periods Ended September 30, 2022

	Performance (%) net of fees								
	1 Month	QTD	YTD	FYTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
SRS Partners US	0.00	0.00	0.00	0.00	-0.01	8.31	6.91	8.74	8/1/2017
Tricadia Select	0.00	0.00	0.00	0.00	0.00	0.00	-4.94	-4.91	9/1/2017

Kentucky Public Pensions Authority

KERS, KERS-Hazardous, & SPRS Unit Holdings

Quarter Ending: September 30, 2022

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority						
Pension: KERS, KERS-H, & SPRS Unit Holdings						
Quarter Ended September 30, 2022						
UNIT OF PARTICIPATION	KERS		KERS-H		SPRS	
	Shares/Par	Base Market Value	Shares/Par	Base Market Value	Shares/Par	Base Market Value
Grand Total	20,414,927.670	3,003,018,148.39	4,975,448.780	796,186,933.30	3,897,229.218	537,095,950.27
KRS ABSOLUTE RETURN UNIT	150,116.784	18,235,088.52	39,166.351	4,757,641.74	16,250.558	1,973,998.88
KRS ADAMS STREET A1 UNIT	175,598.046	24,450,997.32	52,218.930	7,271,179.53	21,775.058	3,032,049.03
KRS ADAMS STREET B1 UNIT	161,447.757	19,974,436.94	48,010.956	5,939,951.29	20,020.349	2,476,932.51
KRS AMERRA AGRI UNIT	-	-	25,662.096	2,318,156.85	12,983.675	1,172,865.82
KRS AMERRA UNIT	-	-	7,456.869	1,400,094.42	3,772.782	708,373.85
KRS ARROWMARK UNIT	405,599.625	78,650,177.37	125,747.662	24,383,838.92	50,099.456	9,714,829.25
KRS BLACKROCK UNIT	602,844.425	79,289,695.95	212,961.513	28,009,968.93	84,499.673	11,113,901.20
KRS BLUE TORCH UNIT	157,476.048	23,194,435.78	47,314.490	6,968,887.74	19,521.195	2,875,250.61
KRS BNYM CUSTODY FEE UNIT	-134,740.901	-134,740.90	-36,211.128	-36,211.13	-23,882.190	-23,882.19
KRS BTG UNIT	-	-	19,433.189	1,570,948.08	8,993.946	727,056.29
KRS CASH UNIT	5,020,024.965	486,634,729.21	652,930.769	63,294,264.51	1,332,844.978	129,204,268.80
KRS DIVCOWEST IV UNIT	-	-	151.575	83,648.79	54.514	30,084.31
KRS DOMESTIC EQUITY UNIT	642,544.836	143,168,254.96	233,225.500	51,966,004.51	107,135.678	23,871,373.95
KRS GLOBAL FIXED UNIT	272,155.649	33,754,433.13	133,330.075	16,536,423.61	55,833.554	6,924,823.98
KRS GREENFIELD UNIT	-	-	265.191	3,470.17	95.376	1,248.05
KRS GREENFIELD VII UNIT	-	-	704.752	216,039.10	253.464	77,698.44
KRS HARRISON UNIT	229,149.436	51,433,997.66	56,783.798	12,745,472.06	27,092.529	6,081,084.46
KRS IFM INFRASST DEBT UNIT	70,008.907	9,757,794.55	21,562.199	3,005,324.85	8,358.079	1,164,943.45
KRS INTERNAL EQUITY UNIT	1,513,267.829	392,288,471.84	550,658.833	142,748,763.94	276,576.408	71,697,642.92
KRS INTERNATIONAL EQUITY UNIT	1,938,765.902	264,083,107.37	702,300.760	95,661,764.43	370,910.367	50,522,428.82
KRS L-A VII UNIT	-	-	13,032.050	1,240,495.64	4,685.431	445,997.12
KRS LIQUID CORE FIXED UNIT	5,249,939.168	637,427,459.26	872,807.779	105,972,969.82	927,083.983	112,562,978.14
KRS LIQUID CREDIT FIXED UNIT	10,020.517	0.76	3,470.982	0.26	1,638.453	0.12
KRS LIQUID HY FI UNIT	873,424.998	125,907,037.24	191,197.321	27,561,711.96	141,733.075	20,431,280.98
KRS MAGNETAR MTP UNIT	159.328	81,966.58	28.401	14,610.95	14.098	7,252.74
KRS MESA WEST CORE UNIT	30,939.768	5,604,979.68	18,362.356	3,326,483.65	5,427.457	983,226.06
KRS MESA WEST IV UNIT	19,083.519	1,858,693.80	5,220.386	508,454.39	2,206.660	214,923.95
KRS MULTI SECTOR CREDIT FI	787,166.869	128,823,958.46	132,990.502	21,764,588.40	71,068.687	11,630,760.82
KRS OBERLAND UNIT	501,797.958	169,431,361.44	6,194.374	431,650.13	33,029.315	11,152,300.88
KRS PE 2010 UNIT	-	-	63,459.265	21,426,929.89	120.702	77,566.92
KRS PE 2011 UNIT	-	-	16,092.398	4,865,789.75	817.325	119,774.34
KRS PE 2012 A UNIT	-	-	803.733	516,504.20	7,907.340	2,838,683.57
KRS PE 2012 B UNIT	-	-	5,442.449	797,560.04	6,747.641	1,108,864.35
KRS PE 2013 UNIT	0.009	3.23	25,082.987	9,004,628.99	-	-
KRS PE 2014 UNIT	-	-	21,404.302	3,517,446.69	-	-
KRS PE 2015 UNIT	-	-	15,704.863	3,851,812.14	4,950.924	1,214,275.42
KRS PE 2016 UNIT	-	-	31,129.760	8,063,832.95	-	-
KRS PE 2017 UNIT	-	-	15,544.238	2,402,241.42	-	-
KRS PE 2018 UNIT	-	-	18,126.427	3,269,375.18	-	-
KRS PE 2019 UNIT	-	-	17,417.216	3,926,577.37	-	-
KRS PE 2021 UNIT	124,848.259	15,580,121.24	35,894.626	4,479,378.64	14,363.627	1,792,472.33
KRS PERIMETER PARK UNIT	19,205.499	1,879,916.69	15,740.350	1,540,733.03	3,731.088	365,214.91
KRS POST-2015 REAL ESTATE UNIT	221,940.763	32,606,088.96	60,712.931	8,919,547.73	25,663.386	3,770,297.24
KRS PRIVATE CREDIT FI UNIT	395,951.616	73,924,799.83	142,217.951	26,552,318.86	36,757.037	6,862,597.58
KRS PROLOGIS UNIT	195,624.976	50,711,658.88	53,514.110	13,872,407.03	22,620.444	5,863,874.15
KRS REAL RETURN UNIT	231,810.371	35,946,534.27	58,062.819	9,003,726.21	23,185.367	3,595,324.86
KRS RUBENSTEIN PF II UNIT	-	-	4,735.076	912,716.87	1,702.973	328,259.18
KRS SHENKMAN UNIT	152,613.694	22,874,434.24	126,260.498	18,924,497.42	58,718.921	8,801,058.82
KRS STOCKBRIDGE UNIT	123,246.396	28,873,824.76	24,535.920	5,748,207.47	11,887.258	2,784,913.92
KRS TAURUS UNIT	-	-	813.695	230,255.69	256.516	72,587.73
KRS TPF II UNIT	255.889	27,500.86	39.538	4,249.22	18.128	1,948.25
KRS WALTON VI UNIT	22,864.485	3,946,871.24	4,997.614	862,688.97	1,657.353	286,092.55
KRS WALTON VII UNIT	-	-	3,196.765	561,655.78	1,149.716	201,999.41
KRS WATERFALL UNIT	249,774.280	42,730,057.27	77,540.718	13,265,254.22	94,896.864	16,234,451.50

KRS Investment Committee Meeting - Investment Review and Update

Kentucky Public Pensions Authority						
Insurance: KERS INS, KERS-H INS, & SPRS INS Unit Holdings						
Quarter Ended September 30, 2022						
UNIT OF PARTICIPATION	KERS INS		KERS-H INS		SPRS INS	
	Shares/Par	Base Market Value	Shares/Par	Base Market Value	Shares/Par	Base Market Value
Grand Total	10,260,542.881	1,262,960,015.22	4,920,675.011	560,646,271.20	1,803,087.049	221,888,095.97
KR3 ARROWMARK UNIT	198,111.345	38,828,759.76	123,155.934	24,137,901.72	45,477.526	8,913,350.88
KRS INS PE 2014 UNIT	-	-	13,865.707	2,282,519.47	8,629.168	1,420,500.52
KRS INS ABSOLUTE RETURN UNIT	53,550.629	6,508,640.27	35,558.729	4,321,872.21	13,334.717	1,620,725.61
KRS INS ADAMS STREET A1 UNIT	72,955.575	10,158,635.86	39,247.488	5,464,982.48	15,160.562	2,111,019.33
KRS INS ADAMS STREET B1 UNIT	67,076.567	8,298,762.64	36,084.791	4,464,437.12	13,938.876	1,724,528.08
KRS INS AMERRA AGRI UNIT	29,726.006	2,685,514.03	24,104.949	2,177,695.14	9,060.063	818,506.40
KRS INS AMERRA UNIT	6,443.202	1,214,834.26	5,224.818	985,113.91	1,963.795	370,263.95
KRS INS BLACKROCK UNIT	682,434.780	35,874,139.39	390,932.341	20,550,478.53	136,358.589	7,168,079.90
KRS INS BLUE TORCH UNIT	66,616.664	9,811,879.11	35,017.303	5,157,651.60	13,564.966	1,997,965.65
KRS INS BNYM CUSTODY FEE UNIT	-78,098.296	-78,098.30	-34,967.936	-34,967.94	-13,835.599	-13,835.60
KRS INS BTG UNIT	22,584.548	1,825,698.93	15,311.541	1,237,760.61	5,808.949	469,586.20
KRS INS CASH UNIT	1,567,122.834	160,791,582.49	274,182.565	28,131,967.43	89,959.536	9,230,122.77
KRS INS DB PRIVATE EQ UNIT	9,222.553	3,095,341.43	7,656.259	2,569,650.26	1,714.293	575,363.69
KRS INS DIVCOWEST IV UNIT	157.933	87,654.64	118.367	65,695.05	44.583	24,744.08
KRS INS DOMESTIC EQUITY UNIT	387,617.496	86,380,056.24	169,347.294	37,738,824.82	68,508.452	15,267,019.67
KRS INS GLOBAL FIXED UNIT	171,926.832	20,924,355.09	7,406.261	901,379.00	38,970.931	4,742,957.16
KRS INS GREENFIELD UNIT	277.542	3,614.60	208.010	2,709.04	78.297	1,019.71
KRS INS GREENFIELD VII UNIT	732.945	224,692.00	549.322	168,400.44	206.767	63,386.60
KRS INS HARRISON UNIT	77,338.977	16,976,384.95	56,020.957	12,296,947.39	21,455.354	4,709,583.23
KRS INS IFM INFRASTR DEBT UNIT	31,014.205	4,268,884.16	17,451.011	2,402,007.22	5,879.271	809,239.73
KRS INS INTERNAL EQUITY UNIT	849,161.680	220,630,634.67	378,469.563	98,334,606.77	148,846.972	38,673,673.90
KRS INS INTL EQ UNIT	1,197,544.746	161,212,633.03	494,981.216	66,634,023.82	204,298.124	27,502,470.04
KRS INS L-A-VII UNIT	13,548.550	1,289,967.48	10,154.240	966,792.71	3,824.578	364,140.91
KRS INS LIQUID CORE FIXED UNIT	1,319,644.757	158,603,207.46	578,106.474	69,480,472.34	226,860.081	27,265,471.48
KRS INS LIQUID CREDIT FIXED UN	1,738,367.727	1.74	1,337,212.672	1.34	401,179.551	0.40
KRS INS LIQUID HY FI UNIT	240,035.783	33,713,532.44	106,012.785	14,889,719.45	41,248.556	5,793,446.77
KRS INS MAGNETAR MTP	28.007	14,514.76	22.063	11,434.25	8.389	4,347.64
KRS INS MESA WEST CORE UNIT	32,110.702	5,697,884.58	27,534.291	4,885,823.18	10,315.876	1,830,500.96
KRS INS MESA WEST IV UNIT	5,833.644	549,063.47	4,362.906	410,637.38	1,667.930	156,985.83
KRS INS MULTI SECTOR CREDIT FI	212,837.305	34,246,677.87	127,352.658	20,491,734.07	43,970.794	7,075,139.47
KRS INS OBERLAND UNIT	17,688.380	1,272,975.06	4,997.899	359,682.50	1,170.023	84,202.74
KRS INS PE 2010 UNIT	38,412.770	12,673,714.85	18,296.438	6,036,634.12	8,136.536	2,684,527.49
KRS INS PE 2011 UNIT	-	-	19,361.390	6,120,563.87	9,219.697	2,914,550.26
KRS INS PE 2012 A UNIT	-	-	434.734	280,294.78	270.552	174,438.42
KRS INS PE 2012 B UNIT	-	-	3,763.938	554,164.31	2,324.095	342,176.33
KRS INS PE 2013 UNIT	-	-	19,633.549	7,057,263.27	12,218.713	4,392,006.48
KRS INS PE 2015 UNIT	-	-	13,166.699	3,208,703.68	8,194.146	1,996,900.39
KRS INS PE 2016 UNIT	92,882.502	24,059,304.52	56,648.123	14,673,532.82	21,944.781	5,684,344.82
KRS INS PE 2017 UNIT	46,631.023	7,167,329.20	28,439.928	4,371,302.91	11,017.181	1,693,374.02
KRS INS PE 2018 UNIT	57,955.314	10,755,033.87	16,375.391	3,038,856.54	3,833.500	711,400.21
KRS INS PE 2019 UNIT	104,205.627	23,492,349.03	7,443.261	1,678,025.37	2,977.305	671,210.28
KRS INS PE 2021 UNIT	58,974.160	7,411,846.13	27,796.493	3,493,450.84	10,889.881	1,368,635.39
KRS INS POST-2015 REAL ESTATE	71,749.493	10,507,629.30	53,660.510	7,858,518.91	20,514.306	3,004,296.11
KRS INS PRIVATE CREDIT FI UNIT	210,123.309	38,611,509.96	126,881.512	23,315,294.19	45,680.372	8,394,062.26
KRS INS PROLOGIS UNIT	36,159.667	14,920,858.60	27,043.360	11,159,122.42	10,338.611	4,266,105.46
KRS INS REAL RETURN UNIT	68,619.697	10,645,153.52	31,377.313	4,867,644.84	12,247.861	1,900,042.79
KRS INS RUBENSTEIN PF II UNIT	4,991.951	956,421.95	3,741.344	716,814.64	1,409.174	269,987.62
KRS INS SHENKMAN UNIT	287,691.080	42,725,365.93	69,070.071	10,257,683.55	24,046.896	3,571,234.92
KRS INS STOCKBRIDGE UNIT	38,327.097	8,940,410.37	27,034.753	6,306,289.94	10,358.286	2,416,236.42
KRS INS TAURUS UNIT	-	-	434.921	123,313.50	270.669	76,743.00
KRS INS TPF II UNIT	17.081	1,835.66	9.178	986.34	3.998	429.66
KRS INS WALTON VI UNIT	1,735.306	297,761.62	992.318	170,272.11	424.189	72,786.70
KRS INS WALTON VII UNIT	3,329.973	585,059.52	2,495.727	438,486.69	939.400	165,047.86
KRS INS WATERFALL UNIT	145,123.213	24,096,007.08	80,891.582	13,431,098.25	26,156.930	4,343,051.38

Kentucky Public Pensions Authority

Internal Asset Holdings Report & Internal Asset Transaction Report

Quarter Ending: September 30, 2022

Reports can be found:

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

Kentucky Public Pensions Authority

Commissions Report

Quarter Ending: September 30, 2022

Reports can be found:

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

Kentucky Public Pensions Authority

Security Litigation Report

Quarter Ending: September 30, 2022

Claims Filed during the Quarter (pg 3):

13

Proceeds Received during the Quarter (pg 4):

\$41,285.63

Kentucky Retirement Systems	
Quarterly Securities Litigation Report	
Quarter Ended 09/30/22	
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	13
Total Filed	1,638
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	\$41,286
Total Proceeds	\$60,254,971

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
Exactech Shareholder Securities Litigation	FILED	7/5/2022	4/1/1996	4/15/2018	956765	KRS INS NTGI STRUCTURED
Exactech Shareholder Securities Litigation	FILED	7/5/2022	4/1/1996	4/15/2018	956588	KRS NTGI STRUCTURED
NIELSEN HOLDINGS PLC, Securities Litigation (18CV07143)	FILED	7/12/2022	2/11/2016	7/25/2018	KR2F1011002	KRS INTERNAL EQUITY
NIELSEN HOLDINGS PLC, Securities Litigation (18CV07143)	FILED	7/12/2022	2/11/2016	7/25/2018	KR2F1902002	S&P 500 INDEX
NIELSEN HOLDINGS PLC, Securities Litigation (18CV07143)	FILED	7/12/2022	2/11/2016	7/25/2018	KR3F1011002	KRS INTERNAL EQUITY
MICROCHIP TECHNOLOGY INC., Securities Litigation	FILED	7/23/2022	3/1/2018	11/7/2018	956772	KRS INS KRS INTERNAL EQUITY
MICROCHIP TECHNOLOGY INC., Securities Litigation	FILED	7/23/2022	3/1/2018	11/7/2018	956599	KRS S P 500 INDEX
MICROCHIP TECHNOLOGY INC., Securities Litigation	FILED	7/23/2022	3/1/2018	11/7/2018	956589	KRS SYSTEMATIC
MICROCHIP TECHNOLOGY INC., Securities Litigation	FILED	7/23/2022	3/1/2018	11/7/2018	956766	KRS INS SYSTEMATIC
MICROCHIP TECHNOLOGY INC., Securities Litigation	FILED	7/23/2022	3/1/2018	11/7/2018	956774	KRS INS S P 500 INDEX
MICROCHIP TECHNOLOGY INC., Securities Litigation	FILED	7/23/2022	3/1/2018	11/7/2018	956596	KRS KRS INTERNAL EQUITY
DEPOMED, INC., Securities Litigation (17CV04830)	FILED	8/15/2022	7/29/2015	8/7/2017	956765	KRS INS NTGI STRUCTURED
DEPOMED, INC., Securities Litigation (17CV04830)	FILED	8/15/2022	7/29/2015	8/7/2017	956588	KRS NTGI STRUCTURED
BLACKBERRY LIMITED Securities Litigation (13CV07060)	FILED	8/23/2022	3/28/2013	9/20/2013	KR2F1009002	INVESCO
OVASCIENCE, INC., Securities Litigation	FILED	8/23/2022	12/17/2014	9/28/2015	KR2F1002002	NTGI STRUCTURED
OVASCIENCE, INC., Securities Litigation	FILED	8/23/2022	12/17/2014	9/28/2015	KR3F1002002	NTGI STRUCTURED
CANADIAN IMPERIAL BANK OF COMMERCE Securities Litigation (Canada)	FILED	9/14/2022	5/31/2007	2/28/2008	KR2F2002002	BOSTON CO NON-US VAL
CANADIAN IMPERIAL BANK OF COMMERCE Securities Litigation (Canada)	FILED	9/14/2022	5/31/2007	2/28/2008	KR3F2002002	BOSTON CO NON-US VAL
LIBERTY OILFIELD SERVICES INC Securities Litigation	FILED	9/14/2022	1/11/2018	4/3/2020	956765	KRS INS NTGI STRUCTURED
NISSAN MOTOR CO., LTD., Securities Litigation	FILED	9/14/2022	5/11/2014	11/16/2018	KR3F2901002	NON-US TRANS ACCT
NISSAN MOTOR CO., LTD., Securities Litigation	FILED	9/14/2022	5/11/2014	11/16/2018	KR2F2901002	NON-US TRANS ACCT
Airbus SE : American Depositary Shares, Securities Litigation	FILED	9/15/2022	2/24/2016	7/30/2020	904032	KRS PUTNAM
Airbus SE : American Depositary Shares, Securities Litigation	FILED	9/15/2022	2/24/2016	7/30/2020	904033	KRS INS PUTNAM
Airbus SE : American Depositary Shares, Securities Litigation	FILED	9/15/2022	2/24/2016	7/30/2020	956779	KRS INS AMERICAN CENTURY
Airbus SE : American Depositary Shares, Securities Litigation	FILED	9/15/2022	2/24/2016	7/30/2020	956623	KRS AMERICAN CENTURY
CBS CORPORATION, Securities Litigation (18CV07796)	FILED	9/16/2022	11/29/2017	7/27/2018	956599	KRS S P 500 INDEX
CBS CORPORATION, Securities Litigation (18CV07796)	FILED	9/16/2022	11/29/2017	7/27/2018	956596	KRS KRS INTERNAL EQUITY
CBS CORPORATION, Securities Litigation (18CV07796)	FILED	9/16/2022	11/29/2017	7/27/2018	956774	KRS INS S P 500 INDEX
CBS CORPORATION, Securities Litigation (18CV07796)	FILED	9/16/2022	11/29/2017	7/27/2018	956772	KRS INS KRS INTERNAL EQUITY
CPI AEROSTRUCTURES, INC Securities Litigation	FILED	9/23/2022	3/22/2018	2/14/2020	956588	KRS NTGI STRUCTURED
AMNEAL PHARMACEUTICALS, INC., Securities Litigation	FILED	9/28/2022	5/7/2018	5/5/2021	956765	KRS INS NTGI STRUCTURED
AMNEAL PHARMACEUTICALS, INC., Securities Litigation	FILED	9/28/2022	5/7/2018	5/5/2021	956588	KRS NTGI STRUCTURED
BLACKBERRY LIMITED Securities Litigation (13CV07060)	FILED	9/29/2022	3/28/2013	9/20/2013	KR2F2001002	PYRAMIS NONUS GROWTH
BLACKBERRY LIMITED Securities Litigation (13CV07060)	FILED	9/29/2022	3/28/2013	9/20/2013	KR3F2001002	PYRAMIS NONUS GROWTH



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008

Base Currency: USD

KR2G0000000 - TOTAL FUND

6/30/2022 - 9/30/2022

Status: FINAL

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	10-00395-BAJ-RBAMEDISYS, INC. (2010) Distribution 2ND DISTRI 20220720S000150 / 0000000000037 KR2F10020002 : NTGI STRUCTURED	7/20/2022 7/20/2022	0.000000 0.000000	446.92 446.92	446.92 446.92	446.92 446.92 Gain/Loss Local Amounts: 446.92 Long Gain/Loss Base Amounts: 446.92 Long
CD	0.000 NA9123459	24119Universal Health Services , Inc. (2016) Distribution 1ST 20220721S000060 / 0000000000008 KR2F10110002 : KRS INTERNAL EQUITY	7/21/2022 7/21/2022	0.000000 0.000000	3,912.70 3,912.70	3,912.70 3,912.70	3,912.70 3,912.70 Gain/Loss Local Amounts: 3,912.70 Long Gain/Loss Base Amounts: 3,912.70 Long
CD	0.000 NA9123459	24119Universal Health Services , Inc. (2016) Distribution 1ST 20220721S000080 / 0000000000008 KR2F19020002 : S&P 500 INDEX	7/21/2022 7/21/2022	0.000000 0.000000	174.63 174.63	174.63 174.63	174.63 174.63 Gain/Loss Local Amounts: 174.63 Long Gain/Loss Base Amounts: 174.63 Long
CD	0.000 NA9123459	WINTHROP REALTY LIQUID TRUST - DISTRIBUTION 20220725S000030 / BE5A378FDBA8 KR2F90010002 : CASH ACCOUNT KR2	7/21/2022 7/21/2022	0.000000 0.000000	1,273.65 1,273.65	1,273.65 1,273.65	1,273.65 1,273.65 Gain/Loss Local Amounts: 1,273.65 Long Gain/Loss Base Amounts: 1,273.65 Long
CD	0.000 NA9123459	2-13-cv-06731-BMSDFC GLOBAL CO RP Distribution 2ND DISTRIBUTI 20220725S000100 / 0000000000000 KR2F10020002 : NTGI STRUCTURED	7/25/2022 7/25/2022	0.000000 0.000000	13.48 13.48	13.48 13.48	13.48 13.48 Gain/Loss Local Amounts: 13.48 Long Gain/Loss Base Amounts: 13.48 Long
CD	0.000 NA9123459	23578TILE SHOP HOLDINGS, INC. (2019) Distribution 1ST DISTRI 20220726S001640 / 0000000000001 KR2F10020002 : NTGI STRUCTURED	7/26/2022 7/26/2022	0.000000 0.000000	695.60 695.60	695.60 695.60	695.60 695.60 Gain/Loss Local Amounts: 695.60 Long Gain/Loss Base Amounts: 695.60 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008
 Base Currency: USD
 Status: FINAL

KR2G00000000 - TOTAL FUND

6/30/2022 - 9/30/2022

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	115-cv-11775-GAOENDURANCE INTE RNATIONAL GROUP HOLDINGS, INC. 20220803S000110 / 000000000000 KR2F10020002 : NTGI STRUCTURED	8/3/2022 8/3/2022	0.000000 0.000000	23.76 23.76	23.76 23.76	23.76 23.76 Gain/Loss Local Amounts: 23.76 Long Gain/Loss Base Amounts: 23.76 Long
CD	0.000 NA9123459	SIGNET SECS CLASS ACTION 20220804S000030 / 19B6BB7F2B00 KR2F20080002 : LAZARD ASSET MGMT	8/2/2022 8/2/2022	0.000000 0.000000	9,718.01 9,718.01	9,718.01 9,718.01	9,718.01 9,718.01 Gain/Loss Local Amounts: 9,718.01 Long Gain/Loss Base Amounts: 9,718.01 Long
CD	0.000 NA9123459	23855BANKRATE, INC. (SEC) Dist ribution 1ST DISTRIBUTION PROC 20220812S000600 / 000000000000 KR2F10020002 : NTGI STRUCTURED	8/12/2022 8/12/2022	0.000000 0.000000	1,520.66 1,520.66	1,520.66 1,520.66	1,520.66 1,520.66 Gain/Loss Local Amounts: 1,520.66 Long Gain/Loss Base Amounts: 1,520.66 Long
CD	0.000 NA9123459	20199ENVISION HEALTHCARE CORPO RATION (D. DEL.) Distribution 20220823S000050 / 000000000083 KR2F19020002 : S&P 500 INDEX	8/23/2022 8/23/2022	0.000000 0.000000	553.15 553.15	553.15 553.15	553.15 553.15 Gain/Loss Local Amounts: 553.15 Long Gain/Loss Base Amounts: 553.15 Long
CD	0.000 NA9123459	22609Baxter International Inc. Distribution 1ST DISTRIBUTION 20220915S000600 / 000000000008 KR2F19020002 : S&P 500 INDEX	9/15/2022 9/15/2022	0.000000 0.000000	1,313.71 1,313.71	1,313.71 1,313.71	1,313.71 1,313.71 Gain/Loss Local Amounts: 1,313.71 Long Gain/Loss Base Amounts: 1,313.71 Long
CD	0.000 NA9123459	16-cv-00520-RAHEARTWARE INTERN ATIONAL, INC. Distribution 2ND 20220916S000510 / 000000000020 KR2F10020002 : NTGI STRUCTURED	9/16/2022 9/16/2022	0.000000 0.000000	3,563.78 3,563.78	3,563.78 3,563.78	3,563.78 3,563.78 Gain/Loss Local Amounts: 3,563.78 Long Gain/Loss Base Amounts: 3,563.78 Long
CD	0.000 NA9123459	212-cv-00604-MHW-KAJBIG LOTS I NC. Distribution 2ND DISTRIBUT 20220922S000190 / 000000000000 KR2F90010002 : CASH ACCOUNT KR2	9/22/2022 9/22/2022	0.000000 0.000000	492.33 492.33	492.33 492.33	492.33 492.33 Gain/Loss Local Amounts: 492.33 Long Gain/Loss Base Amounts: 492.33 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008

Base Currency: USD

Status: FINAL

KR2G0000000 - TOTAL FUND

6/30/2022 - 9/30/2022

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	AMEDISYS INC SEC LIT	9/21/2022	0.000000	294.73	294.73	294.73
	NA9123459	20220923S000190 / 208D52E10B92		0.000000	294.73	294.73	294.73
		KR2F10020002 : NTGI STRUCTURED	9/21/2022				Gain/Loss Local Amounts: 294.73 Long Gain/Loss Base Amounts: 294.73 Long
CD	0.000	21022PERRIGO COMPANY PLC. (201	9/26/2022	0.000000	170.34	170.34	170.34
	NA9123459	9) Distribution 1ST DISTRIBUTI		0.000000	170.34	170.34	170.34
		20220926S005060 / 000000000087	9/26/2022				Gain/Loss Local Amounts: 170.34 Long Gain/Loss Base Amounts: 170.34 Long
		KR2F19020002 : S&P 500 INDEX					
CD	0.000	CLASS ACTION SERVICES LLC FL4	9/22/2022	0.000000	3,276.51	3,276.51	3,276.51
	NA9123459	20221011A000020		0.000000	3,276.51	3,276.51	3,276.51
		KR2F70020002 : PAAMCO	9/22/2022				Gain/Loss Local Amounts: 3,276.51 Long Gain/Loss Base Amounts: 3,276.51 Long
TOTAL U.S. DOLLAR CASH & CASH EQUIVALENTS:					<u>27,443.96</u>	<u>27,443.96</u>	<u>27,443.96</u>
					<u>27,443.96</u>	<u>27,443.96</u>	<u>27,443.96</u>
TOTAL CASH & CASH EQUIVALENTS CLASS ACTIONS:					<u>27,443.96</u>	<u>27,443.96</u>	<u>27,443.96</u>
TOTAL CLASS ACTIONS:					<u>27,443.96</u>	<u>27,443.96</u>	<u>27,443.96</u>
TOTAL TRANSACTIONS BASE:					<u>27,443.96</u>	<u>27,443.96</u>	<u>27,443.96</u>



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008

Base Currency: USD

KR3G00000000 - TOTAL FUND

6/30/2022 - 9/30/2022

Status: FINAL

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	10-00395-BAJ-RBAMEDISYS, INC.	7/20/2022	0.000000	22.36	22.36	22.36
	NA9123459	(2010) Distribution 2ND DISTRI		0.000000	22.36	22.36	22.36
		20220720S000150 / 0000000000037	7/20/2022				Gain/Loss Local Amounts: 22.36 Long
		KR3F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 22.36 Long
CD	0.000	24119Universal Health Services	7/21/2022	0.000000	1,734.99	1,734.99	1,734.99
	NA9123459	, Inc. (2016) Distribution 1ST		0.000000	1,734.99	1,734.99	1,734.99
		20220721S000060 / 0000000000009	7/21/2022				Gain/Loss Local Amounts: 1,734.99 Long
		KR3F10110002 : KRS INTERNAL EQUITY					Gain/Loss Base Amounts: 1,734.99 Long
CD	0.000	5 11-CV-05235-RMWOMNIVISION TE	7/22/2022	0.000000	24.81	24.81	24.81
	NA9123459	CHNOLOGIES, INC (2011) Distrib		0.000000	24.81	24.81	24.81
		20220722S000260 / 0000000000020	7/22/2022				Gain/Loss Local Amounts: 24.81 Long
		KR3F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 24.81 Long
CD	0.000	WINTHROP REALTY LIQUID TRUST -	7/21/2022	0.000000	404.25	404.25	404.25
	NA9123459	DISTRIBUTION		0.000000	404.25	404.25	404.25
		20220725S000030 / BE5A378FDBA8	7/21/2022				Gain/Loss Local Amounts: 404.25 Long
		KR3F90010002 : CASH ACCOUNT KR3					Gain/Loss Base Amounts: 404.25 Long
CD	0.000	2-13-cv-06731-BMSDFC GLOBAL CO	7/25/2022	0.000000	16.30	16.30	16.30
	NA9123459	RP Distribution 2ND DISTRIBUTI		0.000000	16.30	16.30	16.30
		20220725S000110 / 0000000000000	7/25/2022				Gain/Loss Local Amounts: 16.30 Long
		KR3F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 16.30 Long
CD	0.000	23578TILE SHOP HOLDINGS, INC.	7/26/2022	0.000000	171.01	171.01	171.01
	NA9123459	(2019) Distribution 1ST DISTRI		0.000000	171.01	171.01	171.01
		20220726S001070 / 0000000000001	7/26/2022				Gain/Loss Local Amounts: 171.01 Long
		KR3F10020002 : NTGI STRUCTURED					Gain/Loss Base Amounts: 171.01 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008

Base Currency: USD

KR3G00000000 - TOTAL FUND

6/30/2022 - 9/30/2022

Status: FINAL

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	115-cv-11775-GAOENDURANCE INTE RNATIONAL GROUP HOLDINGS, INC. 20220803S000110 / 000000000000 KR3F10020002 : NTGI STRUCTURED	8/3/2022 8/3/2022	0.000000 0.000000	16.27 16.27	16.27 16.27	16.27 16.27 Gain/Loss Local Amounts: 16.27 Long Gain/Loss Base Amounts: 16.27 Long
CD	0.000 NA9123459	SIGNET SECS CLASS ACTION 20220804S000020 / 19B6BB7F2B00 KR3F20080002 : LAZARD ASSET MGMT	8/2/2022 8/2/2022	0.000000 0.000000	3,566.06 3,566.06	3,566.06 3,566.06	3,566.06 3,566.06 Gain/Loss Local Amounts: 3,566.06 Long Gain/Loss Base Amounts: 3,566.06 Long
CD	0.000 NA9123459	23855BANKRATE, INC. (SEC) Dist ribution 1ST DISTRIBUTION PROC 20220812S000610 / 000000000000 KR3F10020002 : NTGI STRUCTURED	8/12/2022 8/12/2022	0.000000 0.000000	681.67 681.67	681.67 681.67	681.67 681.67 Gain/Loss Local Amounts: 681.67 Long Gain/Loss Base Amounts: 681.67 Long
CD	0.000 NA9123459	20199ENVISION HEALTHCARE CORPO RATION (D. DEL.) Distribution 20220823S000050 / 000000000083 KR3F19020002 : S&P 500 INDEX	8/23/2022 8/23/2022	0.000000 0.000000	245.33 245.33	245.33 245.33	245.33 245.33 Gain/Loss Local Amounts: 245.33 Long Gain/Loss Base Amounts: 245.33 Long
CD	0.000 NA9123459	22609Baxter International Inc. Distribution 1ST DISTRIBUTION 20220915S000600 / 000000000008 KR3F19020002 : S&P 500 INDEX	9/15/2022 9/15/2022	0.000000 0.000000	702.75 702.75	702.75 702.75	702.75 702.75 Gain/Loss Local Amounts: 702.75 Long Gain/Loss Base Amounts: 702.75 Long
CD	0.000 NA9123459	14-CV-09662 (JSR)PETROBRAS - P ETROLEO BRASILEIRO S.A (2014) 20220920S000010 / 000000000009 KR3F29010002 : NON-US TRANS ACCT	9/20/2022 9/20/2022	0.000000 0.000000	3,174.16 3,174.16	3,174.16 3,174.16	3,174.16 3,174.16 Gain/Loss Local Amounts: 3,174.16 Long Gain/Loss Base Amounts: 3,174.16 Long
CD	0.000 NA9123459	21878Acer Therapeutics Inc Dis tribution 1ST DISTRIBUTION PRO 20220921S000200 / 000000000007 KR3F10020002 : NTGI STRUCTURED	9/21/2022 9/21/2022	0.000000 0.000000	1,675.67 1,675.67	1,675.67 1,675.67	1,675.67 1,675.67 Gain/Loss Local Amounts: 1,675.67 Long Gain/Loss Base Amounts: 1,675.67 Long



Transaction Detail
Reported By Transaction Category

Report ID: IACS0008

Base Currency: USD

Status: FINAL

KR3G0000000 - TOTAL FUND

6/30/2022 - 9/30/2022

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	ASSISTED LIVING CONCEPTS SEC L IT	9/21/2022	0.000000	338.01	338.01	338.01
		20220923S000190 / 208D52E10B92 KR3F10020002 : NTGI STRUCTURED	9/21/2022	0.000000	338.01	338.01	338.01
						Gain/Loss Local Amounts: 338.01 Long Gain/Loss Base Amounts: 338.01 Long	
CD	0.000 NA9123459	21022PERRIGO COMPANY PLC. (201 9) Distribution 1ST DISTRIBUTI	9/26/2022	0.000000	188.85	188.85	188.85
		20220926S005060 / 000000000087 KR3F19020002 : S&P 500 INDEX	9/26/2022	0.000000	188.85	188.85	188.85
						Gain/Loss Local Amounts: 188.85 Long Gain/Loss Base Amounts: 188.85 Long	
CD	0.000 NA9123459	CLASS ACTION SERVICES LLC FL4 20221011A000020	9/22/2022	0.000000	879.18	879.18	879.18
		KR3F70020002 : PAAMCO	9/22/2022	0.000000	879.18	879.18	879.18
						Gain/Loss Local Amounts: 879.18 Long Gain/Loss Base Amounts: 879.18 Long	
TOTAL U.S. DOLLAR CASH & CASH EQUIVALENTS:					<u>13,841.67</u>	<u>13,841.67</u>	<u>13,841.67</u>
					13,841.67	13,841.67	13,841.67
TOTAL CASH & CASH EQUIVALENTS CLASS ACTIONS:					<u>13,841.67</u>	<u>13,841.67</u>	<u>13,841.67</u>
					13,841.67	13,841.67	13,841.67
TOTAL CLASS ACTIONS:					<u>13,841.67</u>	<u>13,841.67</u>	<u>13,841.67</u>
					13,841.67	13,841.67	13,841.67
TOTAL TRANSACTIONS BASE:					<u>13,841.67</u>	<u>13,841.67</u>	<u>13,841.67</u>
					13,841.67	13,841.67	13,841.67

Kentucky Retirement Systems

Investment Policy Statement

III. Asset Allocation Guidelines

In establishing asset allocation guidelines the Board recognizes that each plan and any underlying fund* have their own capacity to tolerate investment volatility, or risk. The asset allocation guidelines of each Fund will be reviewed annually.

Based on the November 2020 asset liability study and an efficient frontier analysis conducted in February 2022, which analyzes the expected returns, risk, and correlations of various asset classes, projected liabilities, liquidity, and the risks associated with alternative asset mix strategies, the Board has established the following Asset Allocation Guidelines, effective April 1, 2022. The asset classes are grouped together into macro-asset classes based on their expected correlations to one another in order to create a better understanding of risk and diversification, and based on asset class exposures to the economic factors of growth and inflation.

*KERS Hazardous and Non-hazardous

KERS Hazardous Pension Fund and the KRS Insurance Trust Fund - 6.25% Assumed Rate of Return			
Asset Class	Target	Minimum	Maximum
Equity			
Public Equity	43.5%	30%	50%
Private Equity	10%	7%	13%
Fixed Income			
Core Fixed Income	10%	8%	12%
Specialty Credit**	15%	10%	20%
Cash	1.5%	0%	3%
Inflation Protected			
Real Estate	10%	7%	13%
Real Return	10%	7%	13%

**includes High Yield Fixed Income

KERS Non-Hazardous Pension Fund and SPRS Pension Plan - 5.25% Assumed Rate of Return			
Asset Class	Target	Minimum	Maximum
Equity			
Public Equity	32.5%	24%	42%
Private Equity	7%	5%	9%
Fixed Income			
Core Fixed Income	20.5%	16.5%	24.5%
Specialty Credit**	15%	10.5%	19.5%
Cash	5%	0%	10%
Inflation Protected			
Real Estate	10%	7%	13%
Real Return	10%	7%	13%

**includes High Yield Fixed Income

The intent of the Board in allocating funds to the investment managers is for the investment managers to fully invest the funds. However, the Board is aware that from time to time the investment manager will require a portion of the allocated funds to be held in cash provided the cash holdings do not exceed five percent (5%) of the manager's allocation for any given quarter, unless such cash holdings are an integral part of a fixed income manager's investment strategy.

The individual asset allocations of each Pension and Insurance Funds constituent will be reviewed monthly by Staff relative to its target asset class allocation, taking into account any tactical policy shift directed by the Investment Committee.

Regarding individual investment manager initial allocations, Staff will get approval at the Investment Committee meeting for a specific dollar amount intended to be committed to a closed-end fund such as private equity or real estate funds and will get approval for a percent of the appropriate asset class target for open-end investments such as public equity, and public fixed income investment managers. For those open-end funds where assets can be added or subtracted, the Chief Investment Officer will have discretion to reduce or increase an investment manager's allocation between 50% and 150% of the approved target. The target will not be raised prior to the one-year anniversary of the amount approved by the Investment Committee, and must be reported to the Investment Committee at the next scheduled meeting. If the need arises to terminate an investment manager between Board meetings, the Chief Investment Officer will have discretion to do so after receiving approval from either the Board Chair or the Investment Committee Chair. The Investment Committee and the Board must be notified of the investment manager termination at the next scheduled Investment Committee and Board meetings.

Short-term market shifts may cause the asset mix to drift from the allocation targets. Should the target percentage fall out of the indicated range for a particular asset class, Staff shall direct rebalancing transactions to reallocate assets from the over-allocated asset class to the under-allocated asset class. Within the allowable ranges, Staff should use regular cash flows to rebalance toward targets to avoid incurring additional trading costs to correct minor deviations from policy targets. Except when there is a perceived extraordinary downside risk in a particular asset class, movement outside the normal ranges should be avoided.

Investments in private assets are generally less liquid than investments in public markets securities and are typically implemented via periodic commitments to funds with limited partnership structures. As a result, actual allocations to these asset classes may deviate from their strategic targets for extended periods. Actual vs. target deviations for these asset classes shall not be considered in violation of the Asset Allocation Guidelines. Under/over weights to these asset classes shall be invested in public markets securities with the most similar risk/return characteristics as a short-term proxy for the private asset classes.

In keeping with its responsibility as a Board and wherever consistent with its fiduciary responsibility, the Board encourages the investment of the System's assets in investments, funds, and securities of corporations which provide a positive contribution to the economy of the Commonwealth of Kentucky. However, where any security is not a prohibited investment under the governing laws and policies, discretion will be granted to the appointed investment managers in the selection of such securities and timing of transactions consistent with the following guidelines and restrictions.