

Investment

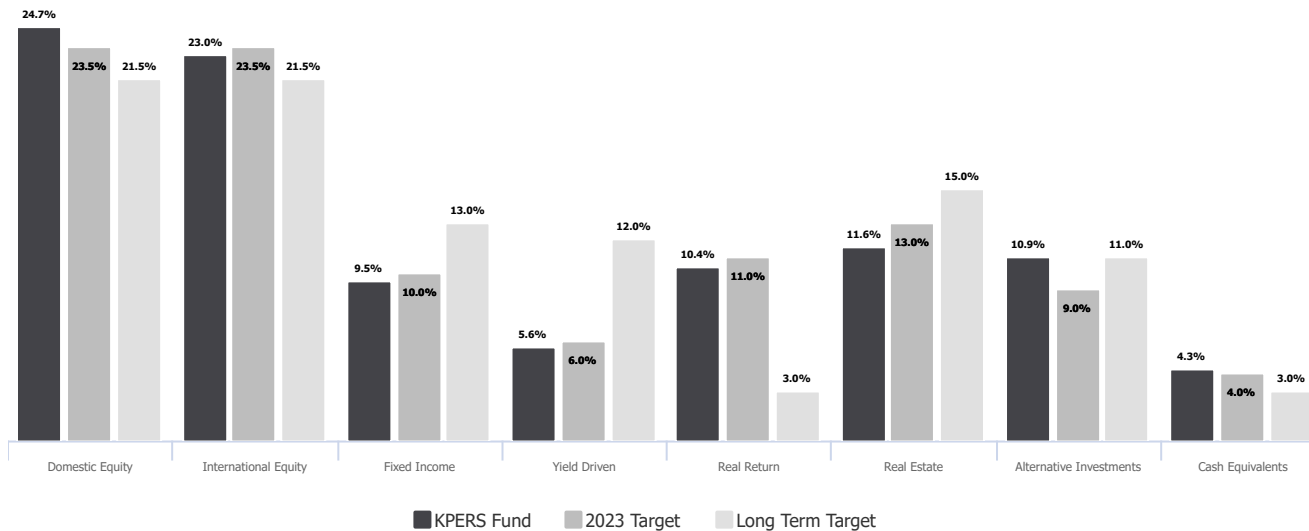
Section



CHIEF INVESTMENT OFFICER’S REVIEW

The Kansas Public Employees Retirement System investment portfolio represents all contributions to the plan, from both members and their employers, as well as net earnings on these assets. Total assets at the end of Fiscal Year 2023 were \$25.6 billion. The System’s investment portfolio is managed for the long term, in order to generate adequate returns to pay the

benefits promised to members. In order to achieve that goal, the assets receive the benefit of a broadly diversified investment portfolio which includes domestic and non-U.S. stocks, bonds, real estate, timber, infrastructure, alternative investments, and cash equivalents.



BASIS OF PRESENTATION

The investment performance data is calculated by the Retirement System’s custodial bank and prepared by the Retirement System’s Investment Division staff. In Fiscal Year 2023, the System’s custodial bank was State Street Bank and Trust. Performance calculations were prepared using time-weighted rates of return, gross of fees, unless otherwise indicated.

ASSET ALLOCATION

Portfolio investments are diversified among eight different asset classes for asset allocation and investment performance purposes, including: domestic equity; international (non-U.S.) equity; fixed income; “yield driven” assets; “real return” assets; real estate; alternative investments; and cash equivalents. (NOTE: For financial reporting purposes, as reported in the Financial Section and the Investment Summary in the Investment Section, investments are categorized by the underlying security.)

The Board of Trustees, working with the System’s general investment consultant, Meketa Investment Group (MIG) and investment staff, completed an asset/liability study in May 2023. At the conclusion of the asset/liability study, the Board adopted a new set of long-term asset allocation targets. The risk philosophy implied by the asset allocation policy targets places significant

emphasis on managing and improving the funded status of the Retirement System over time. The long term target asset mix is 21.5 percent domestic equity, 21.5 percent international equity, 13 percent fixed income, 12 percent yield driven assets, 3 percent real return assets (infrastructure), 15 percent real estate, 11 percent alternatives (private equity), and 3 percent cash equivalents. An implementation plan to achieve the new long term target asset mix is in progress. The table above reflects both the interim targets in place at June 30, 2023 as well as the long term target allocations adopted by the Board.

The allocation to equity investments (primarily publicly-traded stocks) continues to comprise the largest portion of the Retirement System’s investment portfolio. This allocation reflects the System’s long-term investment orientation and the expectation that equities will provide attractive real returns over time. Equity investments allow the investment portfolio to participate in the investment returns produced by companies seeking to grow and profit from their business activities. Equity investments are made globally, sourcing investment return from both domestic and foreign companies, and diversifying the accompanying investment risk across a broad spectrum of economies, currencies, economic sectors, and industries. Fixed income investments are also an important component of the System’s asset mix. Due to its relatively low correlation with

equities, the fixed income portfolio serves to diversify the risk of equity investing.

The yield driven asset class is designed to house those assets which derive a significant part of their expected return from income and have moderate exposure to growth risk, but also provide a degree of diversification. The yield driven asset class consists of the System’s strategic fixed income portfolios and investments in domestic Real Estate Investment Trusts (REITs).

The majority of the real return asset category is made up of Treasury Inflation Protected Securities (TIPS) and global inflation linked bonds (GILBs). These two portfolios are both managed passively. The long term asset allocation targets adopted in May 2023 contemplates an exit from the TIPS and GILBs portfolio in Fiscal Year 2024 as part of the asset allocation implementation plan. The real return asset class also houses the System’s investments in infrastructure and timber assets.

Real estate investments generate returns in a different manner than equities or fixed income investments, since real estate follows a different (and, typically, longer) market cycle. Because it moves in a different market cycle than publicly-traded stocks and bonds, real estate provides diversification advantages, as well as some inflation protection, to the investment portfolio. The System’s real estate portfolio is heavily weighted to “core” real estate, which means that it also produces an attractive current income.

The System’s alternative investments, which consist primarily of investments in private partnerships that make venture capital investments, pursue leveraged buyout strategies or own private debt, represent the higher end of the investment risk/return spectrum. Private equity managers pursue higher growth opportunities in pursuit of higher returns, with commensurate investment risk.

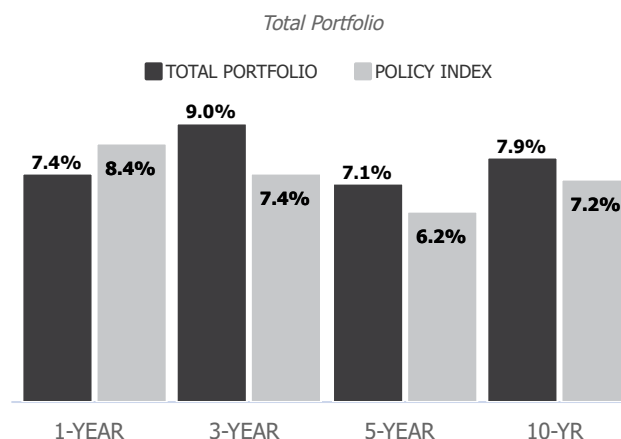
The System also holds cash equivalents investments, primarily to facilitate investment transactions and the cash flows needed to pay benefits. The cash equivalents portfolio is bifurcated, with a portion of the portfolio invested in a slightly longer duration strategy with daily liquidity, while the majority of the portfolio is invested as a STIF (short term investment fund). The long term asset allocation targets adopted in May 2023 will result in all of the cash equivalent investments to be invested in the STIF in Fiscal Year 2024 as part of the asset allocation implementation plan.

INVESTMENT POLICY

The Board of Trustees has adopted a Statement of Investment Policy, Objectives and Guidelines (the Statement), which serves as a guide to the implementation of the System’s broad investment objectives. The Statement complements state statutes and documents the principles and standards that guide

the management of the System’s assets. It is binding upon all persons with authority over the assets, including investment managers, custodians, consultants, staff and the members of the Board of Trustees. The Statement is the product of the Board’s careful and prudent study and is reviewed annually and updated as needed. It sets forth the investment policies, objectives, and guidelines which the Board of Trustees judges to be appropriate and prudent, in consideration of the needs of the System, and to comply with K.S.A. 74-4901 et seq., to direct the System’s assets. Although the System is not subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA), the Board intends to abide by the provisions of ERISA to the greatest extent practicable. As such, this Statement is written to be consistent with ERISA. Among other things, the Statement establishes the criteria against which the System’s investment managers are to be measured. In addition, it serves as a review document to guide ongoing oversight of the investment of the Fund as a yardstick of compliance with K.S.A 74-4901 et seq.

TIME WEIGHTED TOTAL RETURN



FISCAL YEAR 2023 INVESTMENT PERFORMANCE

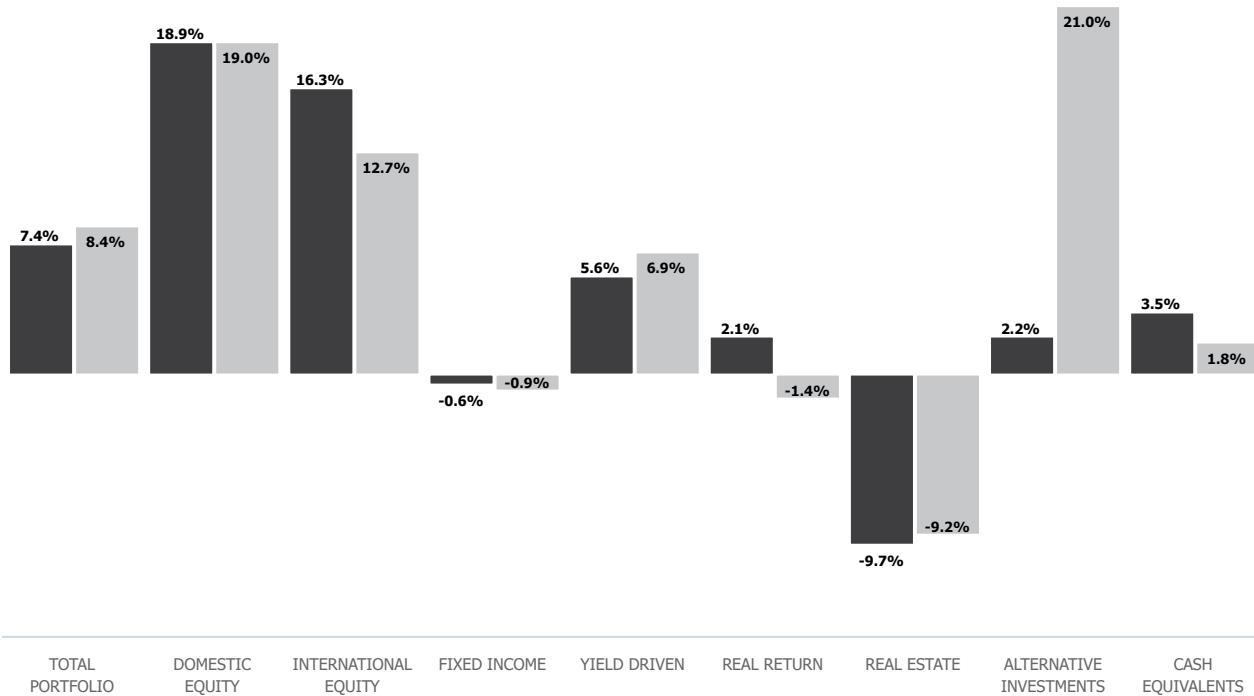
The Retirement System’s total investment portfolio experienced a 7.4 percent total return for the one year ending June 30, 2023. The 7.4 percent return underperformed the KPERS Policy Index by 1.0 percent for the fiscal year. For the three years ending June 30, 2023, the System’s total investment portfolio has produced an average annualized return of 9.0 percent, which outperformed the Policy Index by 1.6 percent. The System’s investment portfolio generated a 7.1 percent total return during the five years ending June 30, 2023, exceeding the Policy Index benchmark by 0.9 percent. For the ten-year period, total return has been 7.9 percent, and has exceeded the Policy Index by 0.7 percent, as of June 30, 2023.

For the 25-year period ending June 30, 2023, the System’s assets have produced an average annualized total return of 6.9 percent, trailing the current 7.0 percent actuarial return assumption.

TIME WEIGHTED TOTAL RETURN BY ASSET CLASS

Fiscal Year 2023

■ KPERS ■ INDEX



FINANCIAL MARKET AND PERFORMANCE OVERVIEW

Fiscal Year 2023 was a mixed and volatile year for investors. Returns on U.S. equities were modest over the first half of the year, with the Russell 3000 Index delivering 2.4 percent as investors expected additional central bank interest rate increases, rising though moderating inflation and the possibility of a recession. Sentiment shifted in the second half of Fiscal Year 2023 as investors began to factor in the end of interest rate hikes and the possibility that the economy would experience only a moderate, or perhaps no recession. Risk assets responded to this shift with the Russell 3000 gaining 16.2 percent and the System's international equity benchmark returning 9.5 percent over the six months ending June 30, 2023. The System maintained its asset allocation discipline throughout and the portfolio delivered a 7.4 percent total return for Fiscal Year 2023.

Public domestic equities increased over Fiscal Year 2023 with the Russell 3000 Index producing a 19.0 percent return, while the MSCI U.S. REITS Index produced a total return of negative 0.1 percent for investors. International equities gained, as the MSCI ACWI ex U.S. index delivered 12.7 percent return for the fiscal year.

Fixed income returns were mixed for the fiscal year. The Bloomberg Aggregate Bond Index produced a total return of

negative 0.9 percent for the fiscal year, while high yield bonds delivered positive returns with the Bloomberg U.S. Corporate High Yield Index producing a 9.1 percent total return for the fiscal year.

Inflation-linked bonds declined with the Bloomberg U.S. TIPS Index posting a negative 1.4 percent total return for the fiscal year. Globally, inflation-linked bonds underperformed U.S. TIPS on a USD hedged basis, with the Bloomberg World Government Inflation-Linked Bond (Hedged) Index returning negative 3.7 percent for the fiscal year.

Private real estate returns, as measured by the NCREIF ODCE Index, was negative 10.0 percent for the fiscal year. The System's private equity portfolio posted a 2.2 percent return for Fiscal Year 2023.

INVESTMENT STAFF

The System employs a staff of ten investment professionals to provide oversight and management of the assets and external investment managers. Under the oversight of the Chief Investment Officer (CIO), responsibility for the portfolio is assigned to the respective investment teams. The Deputy CIO for Public Markets has oversight responsibility for the publicly-traded asset classes, and oversees the System's active international equity investment portfolios and the currency overlay

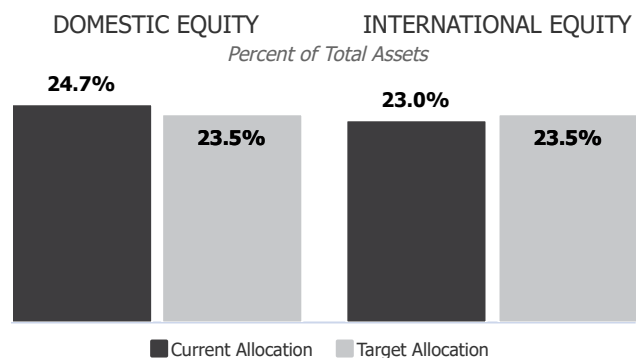
strategies. The Investment Officer for Public Markets oversees the core fixed income portfolios and the yield driven investment portfolios. The Assistant Investment Officer for Public Markets has oversight responsibility for the passive domestic equity and international equity portfolios, the passive TIPS/GILB portfolios in the real return asset class, and the cash equivalents portfolios. The Deputy CIO for Private Markets and two Assistant Investment Officers for Private Markets manage the System’s real estate and private equity investments, as well as the allocations to infrastructure and timber. The CIO and the Investment Officers are supported by a team of Investment Analysts who provide research support and assistance in managing the portfolios. The investment staff focus on bringing a consistent, disciplined management process to all aspects of oversight of investment managers, compliance monitoring and risk management.

PUBLIC EQUITY INVESTMENTS

Public equity investments represent the largest strategy allocation within the System’s portfolio. As of June 30, 2023, the fair value of the System’s global equity portfolio was \$12.2 billion. The strategy is executed through external managers investing domestically and internationally. Active strategies are utilized for international equities. The domestic equity portfolio is passively managed to replicate the return of broad market indices.

PORTFOLIO STRUCTURE

The following graphs describe the current and target allocations at June 30, 2023:



DOMESTIC EQUITY

Domestic equities represent 51.6 percent of the total public equity portfolio and 24.7 percent of total assets. Domestic equity investments are benchmarked against the Russell 3000 Index. It is the System’s view that consistent outperformance over time through active management is extremely difficult when investing in U.S. equities. Therefore, 100 percent of the domestic equity portfolio is passively managed in an index strategy. This passive exposure is designed to replicate the return on the Russell 3000 Index and is implemented through two investment managers.

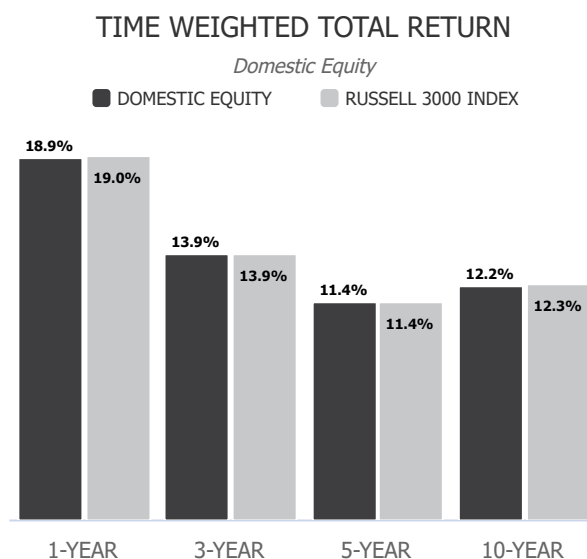
INTERNATIONAL EQUITY

International equities represent 48.4 percent of the total public equity portfolio and 23.0 percent of total assets. International equity investments are benchmarked against the MSCI All Country World – Ex U.S. Net Index. Equity investments in companies domiciled outside of the United States offer the potential to add value through prudent active management. The System retains four active managers to invest across the non-U.S. developed markets and emerging markets.

PERFORMANCE

The return of the System’s domestic equity portfolio was in line with the portfolio’s benchmark during Fiscal Year 2023. The domestic equity portfolio produced a positive 18.9 percent total return during the fiscal year. Over longer time periods, the return on the domestic equity portfolio was also in line with its benchmark, as expected, given its purely passive approach.

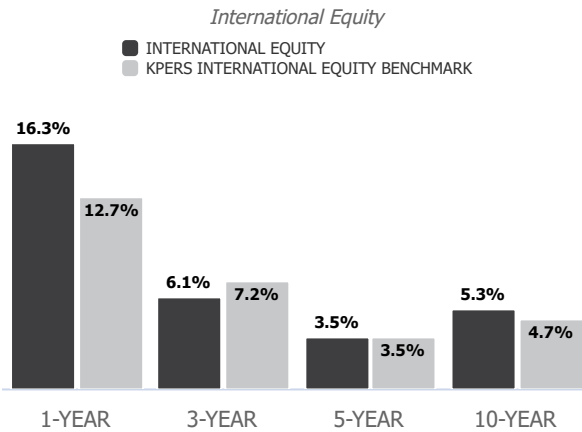
The following chart reports the performance of the domestic equity portfolio:



The return of the international equity portfolio was positive and above the benchmark return during Fiscal Year 2023. The international equity portfolio produced a total return of positive 16.3 percent for the fiscal year, relative to the positive 12.7 percent return for the benchmark. The System’s four active international equity managers outperformed the benchmark during Fiscal Year 2023. Over very long time periods, the international equity portfolio has produced positive relative returns, as active management has added value relative to the benchmark.

The following chart reports the performance of the international equity portfolio:

TIME WEIGHTED TOTAL RETURN

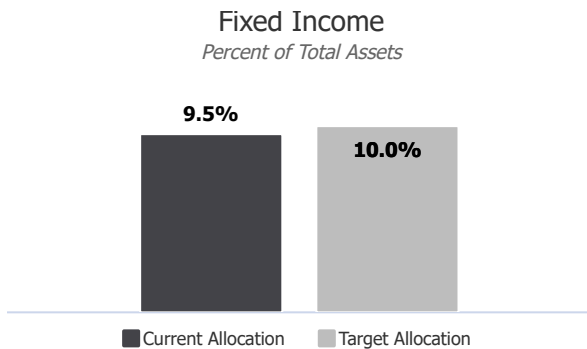


FIXED INCOME INVESTMENTS

As of June 30, 2023, the Retirement System’s fixed income portfolio had a fair value of \$2.4 billion, representing 9.5 percent of the total assets of the System. The structure of the portfolio consists of external managers investing through an active core fixed income U.S. mandate. Two investment managers manage this strategy.

PORTFOLIO STRUCTURE

The following graph describes the current and target allocations at June 30, 2023:



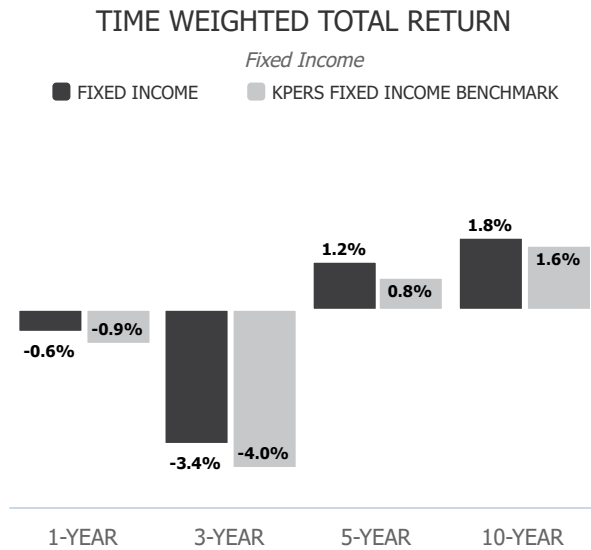
CORE U.S. FIXED INCOME

KPERs invests the fixed income portfolio in core U.S. strategies through two active investment managers. The portfolio’s objective is to provide diversification to other assets in the System’s portfolio and to preserve capital while providing current income. The core fixed income U.S. strategies are primarily invested in traditional investment grade securities. The fixed income portfolio uses the Bloomberg U.S. Aggregate Index as the benchmark.

PERFORMANCE

The core U.S. fixed income portfolio produced a total return of negative 0.6 percent during Fiscal Year 2023, slightly outperforming the benchmark return of negative 0.9 percent. One investment manager outperformed the benchmark during the period, while the other investment manager performed in line with the benchmark. Over longer periods, the fixed income portfolio has produced positive relative returns, as active management has added value.

The following chart reports the performance of the fixed income portfolio:

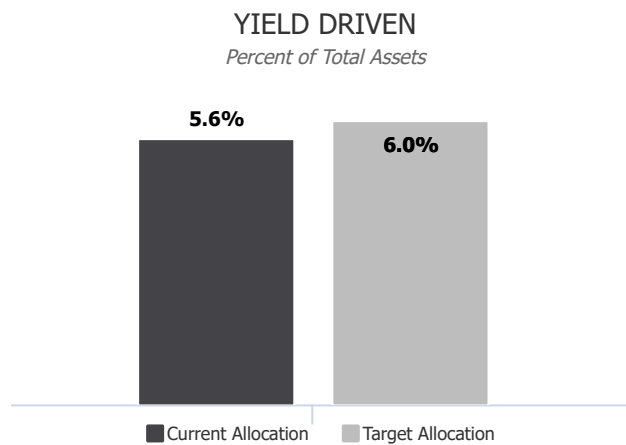


YIELD DRIVEN INVESTMENTS

As of June 30, 2023, the System’s yield driven portfolio had a fair value of \$1.4 billion, representing 5.6 percent of total assets. The strategy is actively managed by two strategic fixed income managers and one REIT manager. The yield driven asset class is designed to produce current income and an element of diversification away from equity risk, while also maintaining some degree of correlation with equities.

PORTFOLIO STRUCTURE

The following graph describes the current and target allocations at June 30, 2023:



STRATEGIC FIXED INCOME

The strategic fixed income strategy represents approximately 76.4 percent of the total yield driven portfolio and 4.3 percent of total assets. KPERS currently measures the performance of the strategy against the Bloomberg U.S. High Yield 2 percent Issuer Cap Index. The strategic fixed income portfolio maintains a minimum investment of 70 percent in high yield corporate debt securities. Both of the System’s two strategic fixed income managers underperformed the benchmark during Fiscal Year 2023.

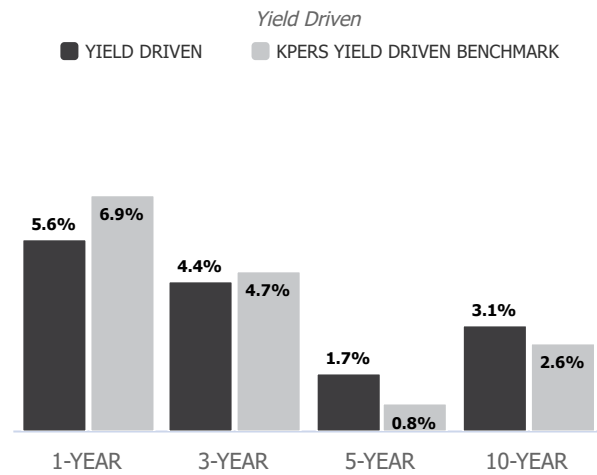
REAL ESTATE INVESTMENT TRUSTS (REITS)

REITs represent 23.6 percent of the yield driven asset class and 1.3 percent of the System’s total assets. This strategy is benchmarked against the MSCI U.S. REIT Index. The System’s publicly-traded real estate securities portfolio is implemented through one manager that actively invests in domestic REITs, real estate operating companies (REOCs) and related investment vehicles. The REIT manager produced a modest negative total return, in line with the benchmark during Fiscal Year 2023.

PERFORMANCE

The yield driven portfolio produced a total return of 5.6 percent in Fiscal Year 2023, underperforming the asset class benchmark return of 6.9 percent. The yield driven portfolio has delivered positive returns over longer time periods.

TIME WEIGHTED TOTAL RETURN

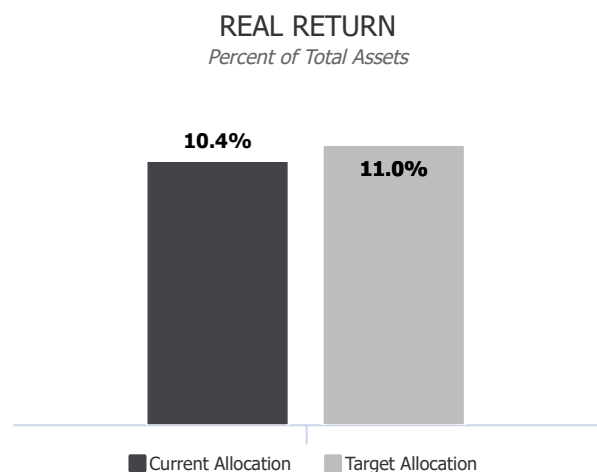


REAL RETURN INVESTMENTS

The real return portfolio is designed to provide the System with a hedge against future inflationary episodes. This strategy uses both public and private market investments. Public market exposure is global and achieved primarily through inflation linked fixed income securities issued by governments and their agencies in the U.S., as well as in developed countries around the world. KPERS currently achieves exposure in the private markets through investments in timber and infrastructure. The real return portfolio represents 10.4 percent of the System’s total assets, and had a fair value of \$2.7 billion as of June 30, 2023.

PORTFOLIO STRUCTURE

The following graph describes the current and target allocations at June 30, 2023:



U.S. TREASURY INFLATION LINKED BONDS (TIPS)

The TIPS portfolio represents 43.0 percent of the real return portfolio and is benchmarked against the Bloomberg U.S. TIPS Index. This passively managed exposure is designed to replicate the return on domestic inflation linked bonds. It is the System's view that the minimal excess return available through active management of TIPS is not sufficient to compensate for the incremental costs of active management fees. The TIPS portfolio performed in line with its benchmark during Fiscal Year 2023, as expected, producing a negative 1.3 percent total return.

GLOBAL INFLATION LINKED BONDS (GILBS)

The GILB portfolio represents 31.7 percent of the real return portfolio and is benchmarked against the Bloomberg World ILB Index (USD Hedged). The GILB portfolio provides global diversification by broadening the opportunity set to capture unexpected inflation within investment grade sovereign bonds. This portfolio was transitioned from active management to passive management during Fiscal Year 2019. Since the transition, performance of the GILB portfolio has been in line with the benchmark, as expected. In Fiscal Year 2023, the GILB portfolio produced a negative 3.8 percent total return.

TIMBER

Timber investments are a component of the System's real return asset allocation due to their historically high correlation to inflation and comprised 4.3 percent of the real return portfolio. The System is diversified within timber markets located throughout seven states in the southern U.S. Over time, timber investments are expected to provide the System with current cash yields and modest capital appreciation. For Fiscal Year 2023, the System's timber investments produced a 53.4 percent total return primarily due to strategic sales in Texas and Idaho, outperforming the strategy benchmark and outperforming the real return asset class benchmark.

INFRASTRUCTURE

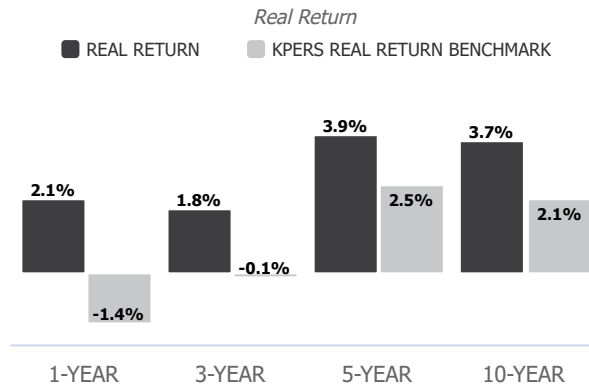
The infrastructure portfolio represents 21.0 percent of the real return portfolio. The System's four infrastructure managers have been successful in operating their infrastructure investments. The System's infrastructure portfolio is well diversified, with investments in Australia, Europe, and throughout North and South America. It is invested across multiple sectors, including renewable power, toll roads, electric utilities, airports, seaports and energy. The infrastructure portfolio produced a total return of 10.2 percent for the fiscal year, outperforming the strategy benchmark by 2.0 percent and outperforming the real return asset class benchmark.

PERFORMANCE

The System's real return portfolio outperformed its benchmark in Fiscal Year 2023, producing a 2.1 percent total return against a benchmark return of negative 1.4 percent. Timber was the

strongest performing investment strategy in the asset class. The real return portfolio has outperformed its benchmark over the one, three, five, and ten year time periods ending June 30, 2023.

TIME WEIGHTED TOTAL RETURN



REAL ESTATE INVESTMENTS

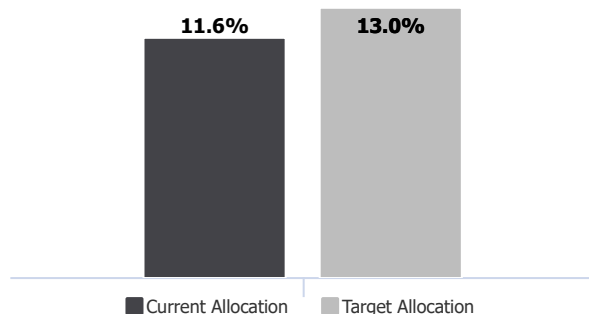
As of June 30, 2023, the real estate portfolio had a fair value of \$3.0 billion, representing 11.6 percent of the total fund. The real estate portfolio is primarily designed to provide diversification to the broader portfolio, while also providing a meaningful current income. Capital appreciation is a tertiary objective of current real estate investment activities.

PORTFOLIO STRUCTURE

The System's real estate portfolio is classified into two categories: core and non-core. The core portion of the portfolio is targeted at a 75 percent allocation, while the non-core segment is targeted at a 25 percent allocation.

REAL ESTATE

Percent of Total Assets



CORE REAL ESTATE

The largest segment of the real estate portfolio is core real estate. This portion of the portfolio is expected to produce steady current income in the form of investment yield, while also providing portfolio diversification and serving as an inflation

hedge. The Retirement System's core portfolio primarily consists of partial and full commitments to eight commingled funds.

The System continued to invest into pooled real estate investment funds during Fiscal Year 2023. This strategy is expected to result in improved liquidity, enhanced portfolio diversification, lower management fees and a reduction in the single event risk associated with owning individual real estate assets.

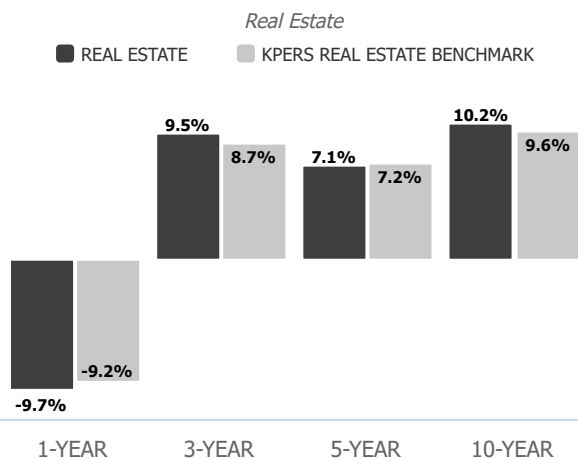
NON-CORE REAL ESTATE

The non-core segment consists of investments that generally involve some element of property lifecycle risk (such as positioning, leasing and development) while also using greater leverage (debt) than core strategies. While providing elements of inflation protection and a diversification benefit to the broader portfolio, the System expects non-core real estate investments to produce meaningful capital appreciation and higher overall long-term returns than core investments. The non-core portfolio consists of investment funds employing diverse strategies and property types, both domestically and internationally.

REAL ESTATE PERFORMANCE

The System's real estate portfolio underperformed its benchmark in Fiscal Year 2023. The core real estate portfolio produced a total return of negative 9.8 percent, outperforming the strategy benchmark by 0.2 percent, while the non-core real estate portfolio underperformed its benchmark by 2.0 percent, with a total return of negative 9.0 percent. In total, the System's real estate portfolio produced a total return of negative 9.7 percent, which underperformed the benchmark return by 0.5 percent. Overall, most of the System's real estate fund investments were negatively impacted by a weakening economic landscape, with the majority generating negative returns. Longer term results from the real estate asset class produced a 10.2 percent total return for the trailing ten years, exceeding the asset class benchmark total return of 9.6 percent.

TIME WEIGHTED TOTAL RETURN

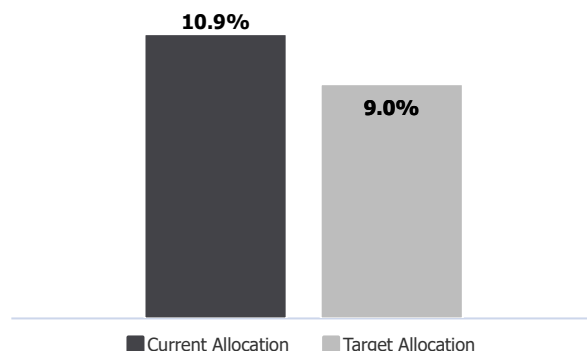


ALTERNATIVE INVESTMENTS

As of June 30, 2023, the System's alternative investment portfolio had a fair value of \$2.8 billion, representing 10.9 percent of the total portfolio. Since the inception of the alternative investment program in 1997 through June 30, 2023, the System has committed \$4.9 billion to 136 funds with 59 general partners.

ALTERNATIVES

Percent of Total Assets



PORTFOLIO STRUCTURE

The alternative investment portfolio consists primarily of interests in private partnerships that provide equity and debt to companies. The portfolio contains two primary sub-portfolios based on investment period. Each portfolio has its own set of directives, guidelines, external fund managers and consultants who provide advice on investment strategy and investment selection during its investment period. The largest portfolio is the Private Equity Program (PEP), representing over 99.9 percent of the market value of the asset class. The PEP portfolio actively seeks new commitments to private equity funds in three styles: buyout, venture capital/growth equity and special situations. Since the inception of PEP in 2007, the System has committed \$3.8 billion to 82 funds with 28 general partners.

The second portfolio is the Alternative Investment Portfolio (AIP), which represents less than 0.1 percent of the market value of the asset class. From 1997 to 2001, AIP made commitments to 54 funds with 35 general partners across five styles: buyout, venture capital, mezzanine, distressed debt and natural resources. As this is a mature portfolio, the remaining funds in the AIP portfolio are currently pursuing exit strategies for their existing holdings.

ALTERNATIVE INVESTMENTS PERFORMANCE

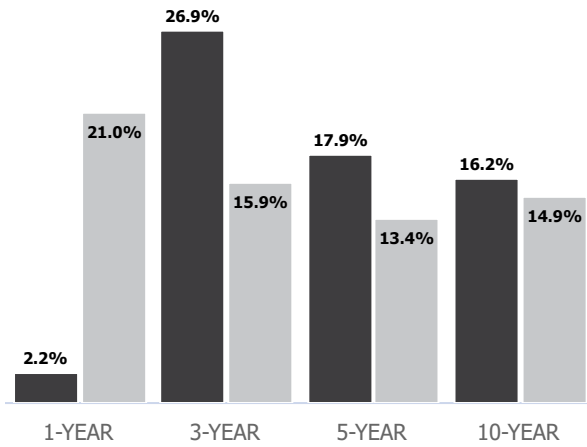
The System’s alternative investments portfolio underperformed its benchmark in Fiscal Year 2023, producing a 2.2 percent total return against a benchmark return of 21.0 percent.

Private equity investments typically span ten years or longer. Therefore, the longer term returns from this asset class are more relevant in assessing its success in adding value to the overall portfolio. The System’s current long-term performance objective for alternative investments is to exceed the return of the Russell 3000 Index plus 2 percent. As shown in the chart below, the alternative investments portfolio is outperforming this objective over the ten year time period, with a total return of 16.2 percent.

TIME WEIGHTED TOTAL RETURN

Alternative Investments

- ALTERNATIVE INVESTMENTS
- KPERS ALTERNATIVE INVESTMENTS BENCHMARK



As required by K.S.A 74-4907, a schedule of alternative investments initiated on or after July 1, 1991, is listed on the following two pages.

ALTERNATIVE INVESTMENTS INITIATED ON OR AFTER JULY 1, 1991 ⁽¹⁾

As of June 30, 2023

Description	Cost	Net Asset Value
Apax Europe IX, L.P.	\$ 38,303,675	\$ 72,964,479
Apax Europe X, L.P.	35,004,405	46,542,662
Apollo Investment Fund VII, L.P.	5,428,232	269,056
Apollo Investment Fund VIII, L.P.	27,137,404	22,139,590
Apollo Investment Fund IX, L.P.	37,937,437	59,526,950
Ares Corporate Opportunities Fund III, L.P.	3,369,921	199,560
Ares Corporate Opportunities Fund IV, L.P.	7,057,573	6,716,748
Ares Corporate Opportunities Fund V, L.P.	50,971,370	72,590,978
Ares Corporate Opportunities Fund VI, L.P.	35,000,205	40,235,185
Ares Special Situations Fund IV, L.P.	47,686,469	34,910,453
Audax Mezzanine Fund III, L.P.	2,205,661	1,091,560
Beacon Group Energy Fund II, L.P.	1,841,499	492,835
Capital Resource Partners IV, L.P.	1	-
CCMP Capital Investors III, L.P.	7,342,310	2,248,722
Centerbridge Capital Partners II, L.P.	16,361,208	2,699,992
Centerbridge Capital Partners III, L.P.	20,107,025	29,099,992
Clayton Dublier & Rice VI, L.P.	2,998,283	8,767
Consolidated Storage Company, Inc.	34,155	34,155
Crestview Partners III, L.P.	30,977,031	42,364,777
Cypress Merchant Banking II, L.P.	6,889,672	7,386
Encap Energy Capital VIII, L.P.	15,725,679	9,749,669
Encap Energy Capital IX, L.P.	24,829,223	13,422,182
Encap Energy Capital X, L.P.	30,963,613	36,640,885
First Reserve Fund XII, L.P.	17,100,605	30,490
FS Equity Partners VII, L.P.	35,801,413	53,055,367
FS Equity Partners VIII, L.P.	52,690,493	98,157,014
Green Equity Investors VII, L.P.	51,378,412	93,064,903
Green Equity Investors VIII, L.P.	44,096,000	50,499,312
GSO Capital Solutions Fund II, L.P.	13,499,480	3,420,728
GSO Capital Solutions Fund III, L.P.	22,743,490	20,292,993
Halpern Denny Fund III, L.P.	1	-
HD Access, Inc.	180,137	105,395
Hellman & Friedman VII, L.P.	712,928	3,053,922
Hellman & Friedman VIII, L.P.	30,649,404	54,851,062
Hellman & Friedman IX, L.P.	67,434,529	99,467,144
Hellman & Friedman X, L.P.	50,894,296	55,050,731
JMI Equity Fund VII, L.P.	3,462,412	2,148,655
JMI Equity Fund X, L.P.	31,354,608	40,384,516
JMI Equity Fund XI, L.P.	2,302,682	3,066,681
Montagu IV, L.P.	2,781,056	1,590,796
Montagu V, L.P.	36,478,330	52,009,331
Montagu VI, L.P.	20,316,250	25,834,494
New Enterprise Associates 13, L.P.	4,473,663	2,251,764
New Enterprise Associates 16, L.P.	43,506,898	53,119,747

ALTERNATIVE INVESTMENTS INITIATED ON OR AFTER JULY 1, 1991 ⁽¹⁾ (CONTINUED)

As of June 30, 2023

Description	Cost	Net Asset Value
New Enterprise Associates 17, L.P.	36,502,096	40,980,684
New Enterprise Associates 18, L.P.	6,120,000	6,175,790
NEA 18 Venture Growth Equity	4,960,000	3,474,029
New Mountain Partners V, L.P.	33,545,271	79,488,304
New Mountain Partners VI, L.P.	27,676,469	35,116,181
OCM Opportunities Fund VIIb, L.P.	-	9,719
Pine Brook Capital Partners, L.P.	7,260,582	1,202,650
Pine Brook Capital Partners II, L.P.	35,323,779	40,092,701
Platinum Equity Capital Partners III, L.P.	9,563,932	8,442,992
Platinum Equity Capital Partners IV, L.P.	49,811,556	86,382,801
Platinum Equity Capital Partners V, L.P.	45,012,708	67,923,141
Platinum Equity Capital Partners VI, L.P.	1,611,645	1,499,004
Quad-C Partners IX, L.P.	29,843,499	35,326,257
Quad-C Partners X, L.P.	14,191,898	14,559,823
Snow Phipps II, L.P.	12,616,430	13,734,814
Snow Phipps III, L.P.	22,823,325	34,866,052
TA XII, L.P.	39,259,927	81,112,736
TA XIII, L.P.	39,207,213	62,110,263
TA XIV, L.P.	49,500,000	45,676,422
TowerBrook Investors III, L.P.	3,982,077	81,868
TowerBrook Investors IV, L.P.	15,636,158	32,823,876
TowerBrook Investors V, L.P.	56,989,173	72,235,088
TPG Growth II, L.P.	3,432,724	628,391
TPG Growth III, L.P.	28,497,146	33,554,307
TPG Growth IV, L.P.	30,792,070	53,456,265
TPG Growth V, L.P.	30,854,807	40,402,549
TPG Partners VI, L.P.	6,764,302	367,302
TPG Partners VII, L.P.	33,781,964	30,720,879
TPG Partners VIII, L.P.	59,706,178	87,090,894
VantagePoint Venture Partners IV, L.P.	7,596,229	48,016
Vista Equity Partners Fund IV, L.P.	8,583,071	19,043,139
Vista Equity Partners Fund V, L.P.	40,716,480	99,687,542
Vista Equity Partners Fund VI, L.P.	51,866,445	101,572,030
Vista Equity Partners Fund VII L.P.	56,027,218	78,575,708
Warburg Pincus Equity Partners, L.P.	-	81,072
Warburg Pincus Global Growth, L.P.	64,228,966	93,986,246
Warburg Pincus Private Equity X, L.P.	13,818	914,288
Warburg Pincus Private Equity XI, L.P.	13,488,079	22,503,740
Warburg Pincus Private Equity XII, L.P.	35,612,115	63,157,089
Warburg Pincus Global 14, L.P.	7,739,125	8,280,539
Wellspring Capital Partners V, L.P.	8,176,689	7,988,372
Wellspring Capital Partners VI, L.P.	60,410,617	100,489,558
Windjammer Mezzanine & Equity Fund II, L.P.	-	63,207
	<u>\$ 2,069,754,919</u>	<u>\$ 2,811,337,956</u>

(1) Investment values quoted without spin-offs or distributions.

LIST OF LARGEST HOLDINGS ⁽¹⁾

As of June 30, 2023

EQUITIES			FIXED INCOME				
Shares	Security	Fair Value (\$)	Par Value	Security	Description	Fair Value (\$)	
2,149,197	Apple Inc	\$416,879,742	201,940,000	US Treasury N/B	3.375% 15 May 2033	\$194,746,897	
1,071,270	Microsoft Corp	364,810,286	155,000,000	Treasury Bill	0.010% 18 Apr 2024	148,565,950	
9,214,883	Taiwan Semiconductor Mfg	170,424,075	125,000,000	Treasury Bill	0.010% 07 Dec 2023	122,161,250	
1,297,976	Amazon.com Inc	169,204,151	95,000,000	Treasury Bill	0.010% 21 Dec 2023	92,635,450	
342,046	Nvidia Corp	144,692,299	81,935,000	US Treasury N/B	3.625% 15 May 2053	78,746,909	
2,975,859	Tencent Holdings LTD	125,921,298	65,489,000	US Treasury N/B	4.000% 15 Feb 2026	64,483,744	
397,456	Tesla Inc	104,042,057	62,770,000	US Treasury N/B	3.875% 15 May 2043	61,249,711	
854,379	Alphabet Inc CL A	102,269,166	51,558,834	State Street TR	STIF FUND	51,558,834	
9,249,600	AIA Group Ltd	93,362,346	50,000,000	Treasury Bill	0.010% 16 May 2024	47,721,500	
318,502	Meta Platforms Inc Class A	91,403,704	42,650,000	Treasury Bill	0.010% 13 Jun 2024	40,546,929	

(1) A complete listing of the System's holdings is available at the Retirement System office.

CHANGES IN FAIR VALUE OF INVESTMENTS ⁽¹⁾

(In Thousands)

For the Fiscal Year Ended June 30, 2023

	June 30, 2022 Fair Value	Purchases and Other Increases	Sales and Other Decreases	June 30, 2023 Fair Value	Asset Mix Fair Value
Marketable Securities					
Domestic Equities	\$ 6,115,677	\$ 1,697,456	\$ (590,764)	\$ 7,222,369	27.96%
International Equities	4,735,586	4,656,745	(4,287,134)	5,105,197	19.77
Total Fixed	6,123,529	10,950,687	(11,059,310)	6,014,906	23.29
Temporary ⁽²⁾ Investments	854,962	30,616,078	(30,445,460)	1,025,580	3.97
Total Marketable Securities	17,829,754	47,920,966	(46,382,668)	19,368,052	74.99
Real Estate and Alternative Investments					
Real Estate	3,706,636	395,691	(454,086)	3,648,241	14.12
Alternatives	2,823,032	265,085	(276,776)	2,811,341	10.89
Total Real Estate and Alternative Investments	6,529,668	660,776	(730,862)	6,459,582	25.01
Total	<u>\$ 24,359,422</u>	<u>\$ 48,581,742</u>	<u>\$ (47,113,530)</u>	<u>\$ 25,827,634</u>	<u>100.00%</u>

(1) Amounts include changes in unrealized appreciation and exclude interest and dividend accruals.

(2) Temporary Investments include currencies, short term pools, and securities maturing within one year of purchase.

U.S. EQUITY COMMISSIONS

For the Fiscal Year Ended June 30, 2023

Broker Name	Commissions Paid	Shares	Commissions per Share	Percent of Total Commissions
Liquidnet, Inc	\$ 48,358	2,472,288	0.020	20.3%
Wells Fargo Securities, LLC	37,869	1,659,052	0.023	16.0
JP Morgan Securities, LLC	34,341	1,373,037	0.025	14.4
Citigroup Global Markets, Inc	25,797	2,355,482	0.011	10.8
Morgan Stanley Co., Inc	21,891	3,020,784	0.007	9.2
Bank of America Securities, Inc	9,982	1,169,644	0.009	4.2
Evercore ISI	8,732	246,471	0.040	3.7
UBS Securities	5,823	358,258	0.020	2.4
Other	45,254	3,446,886	0.013	19.0
Total Broker Commissions	<u>\$ 238,047</u>	<u>16,101,902</u>		<u>100.0%</u>