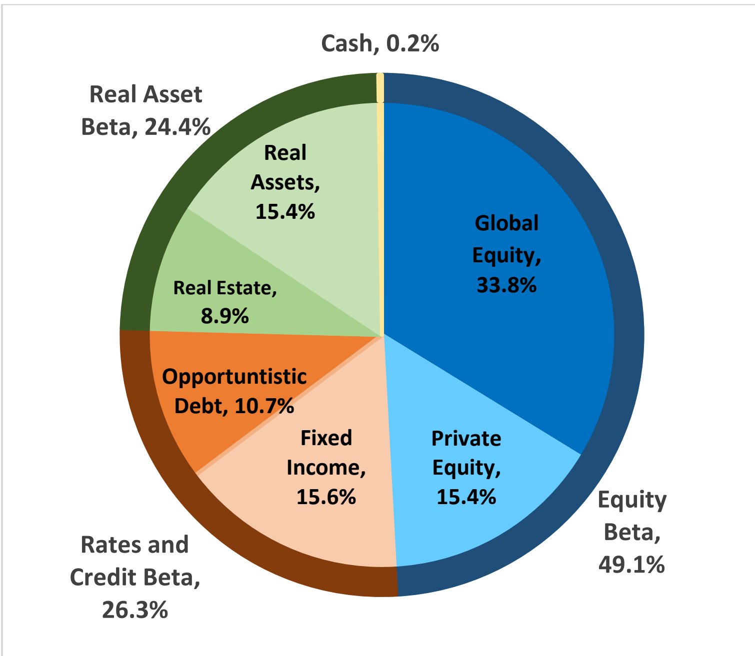
CIO INVESTMENT REPORT
~ by Larry Krummen, CFA ~
Chief Investment Officer
MPERS Board Meeting – November 17, 2022

Investment Performance Report

NEPC will present MPERS' 3rd Quarter 2022 investment performance report. A high-level summary of the report is provided below.

MPERS' Asset Allocation
September 30, 2022
Market Value $3,000,906,117



1-Year Return:	-0.19%
Benchmark Return:	-10.51%
Excess:	10.32%
3-Year Return:	9.52%
Benchmark Return:	4.75%
Excess:	4.77%
5-Year Return:	8.62%
Benchmark Return:	5.82%
Excess:	2.80%
10-Year Return:	9.14%
Benchmark Return:	7.11%
Excess:	2.03%

- MPERS' diversified portfolio was able to limit losses during a difficult market environment in the 3rd quarter of 2022. The fund finished the quarter down 1.5% relative to MPERS' policy benchmark, which fell 5.1% and a traditional 60/40 stock and bond portfolio which fell 5.9%.

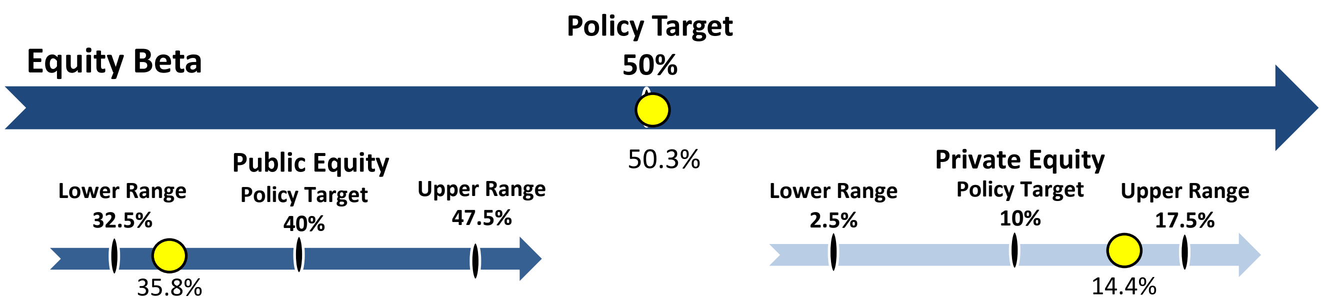
- MPERS' one-year excess return of 10.3% relative to the policy benchmark is unprecedented. The System's exposure to alternative investment strategies has clearly mitigated overall losses and while we anticipate some downward pressure on alternative valuations, which are holding up extremely well thus far.

- **MPERS' overall return profile now ranks in the top 1% of the peer universe across all time frames.** The risk-adjusted returns (measured by a system's Sharpe ratio) also rank in the top 1% of the peer rankings.

- Additional details on how the fund is currently positioned are highlighted on the following page.

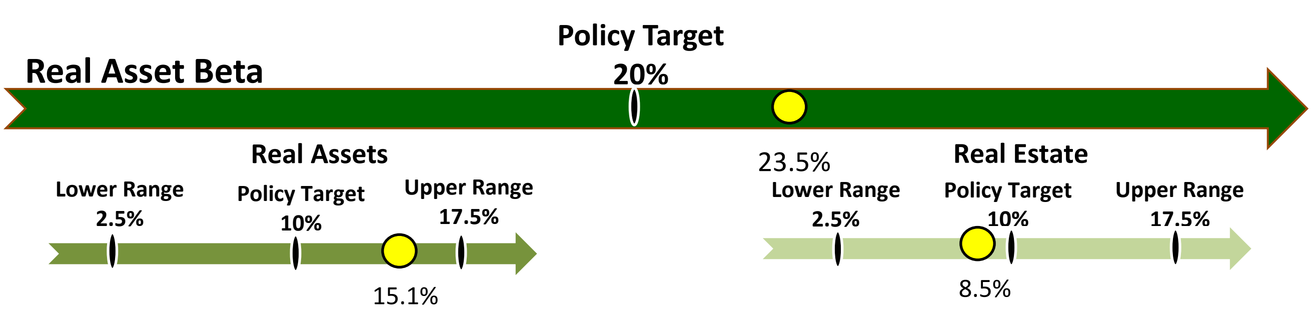
Current Asset Allocation and Positioning Relative to Targets

The biggest movement since September 30th has been within the global equity markets, which were up over 6% in the month of October. This helped push MPERS' portfolio back into positive territory for Fiscal Year 2023 (up 0.25% through November 7th) and increased the overall allocation to public equities. The current allocation relative to policy targets, along with additional comments on the positioning of the portfolio, is provided below. As of November 7, 2022, each of the respective allocations are within the permissible ranges established in MPERS' Investment Policy. The total fund leverage authority is being utilized modestly, with total leverage standing at 5.3% of assets.



The underweight allocation to the public equities is offset by an overweight allocation to private equity for an overall neutral allocation to the broader equity markets (beta group). Staff expects to add additional exposure to public equities should markets sell off considerably from current levels. The bounce in public equities in October, along with some timely rebalancing (purchases) by staff, has increased the public equity allocation to 35.8% (from 33.8% on September 30th). Distributions from the private equity portfolio has pulled the allocation under 15% for the first time in several years. Most of the distributions have resulted in significant gains, which are offsetting unrealized losses in other parts of the private equity portfolio.

Concerns over inflation and additional Federal Reserve rate hikes continue to push interest rates higher and bond prices lower. The 10-year Treasury is now yielding 4.1% (up from 3.4% in September), while the 30-year Treasury now yields 4.25% (up from 3.50%). With certain AAA-rated bonds now yielding over 6%, staff has started to gradually increase the fixed income allocation to take advantage of the higher yield environment.



The real assets beta portfolio continues to benefit from inflationary pressures and higher commodity prices and is the only segment with positive returns thus far in Fiscal Year 2023. We expect the portfolio will continue to perform well as these inflationary trends continue. Staff is reviewing several new real estate investments to potentially increase that allocation back towards the targeted allocation.