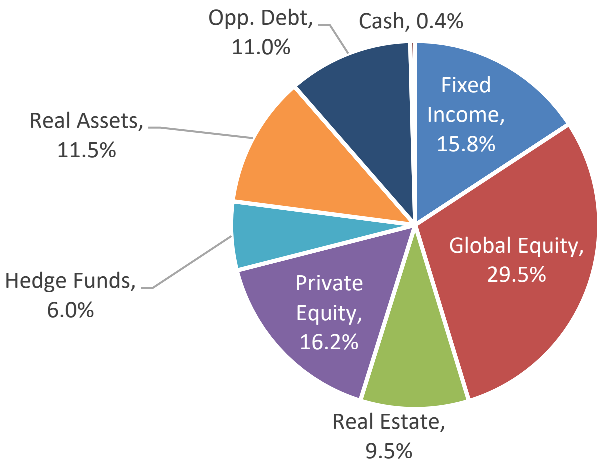
CIO INVESTMENT REPORT
~ by Larry Krummen, CFA ~
Chief Investment Officer
MPERS Board Meeting – November 29, 2018

3rd Quarter 2018 Investment Performance Report

NEPC will present MPERS' 3rd Quarter 2018 investment performance report. A high level summary of the report is provided below.

Actual Asset Allocation
September 30, 2018
Net Asset Value $2,357,669,265



1-year Return:	8.90%
Benchmark:	7.10%
Excess Return:	1.80%
3-year Return:	8.85%
Benchmark:	8.60%
Excess Return:	0.25%
5-year Return:	8.75%
Benchmark:	7.66%
Excess Return:	1.09%
10-year Return:	7.95%
Benchmark:	7.39%
Excess Return:	0.56%

- Fiscal year 2019 got off to a nice start, as the investment portfolio generated a 2.6% return in the 3rd quarter of 2018. Global equities were up 4.2% in the quarter, backed by steady economic growth. MPERS' private equity portfolio also continues to perform well, generating a 7% return for the quarter. Fixed income continued to struggle in this environment, as bond prices fell with the overall rise in interest rates (driven by the improved economic outlook).

- Unfortunately the good start to the fiscal year has essentially been erased thus far in the 4th quarter, as fears over U.S./China trade fears, rising U.S. interest rates, and falling oil prices have sent equity markets tumbling. The portfolio is now estimated to be flat for the fiscal year (July 1st – November 20th), with global equities down roughly 5.5% over the same period. The overriding concern here is whether market sentiment has changed. After 10 strong years of growth following the global financial crisis, we may indeed be moving to more of a transition/consolidation period for the economy, which suggests a more cautious and nimble approach to portfolio management.

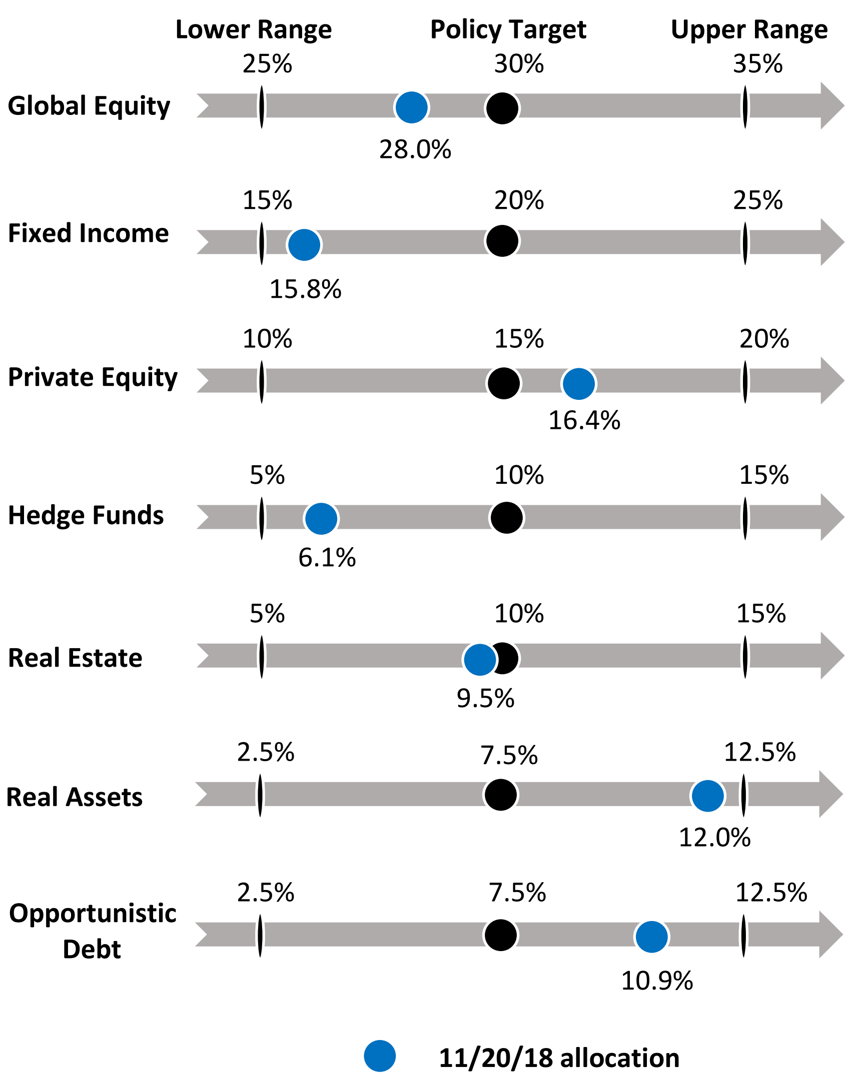
- Longer term performance remains excellent across any metric, regardless of whether you are looking at absolute return or relative performance to policy benchmarks and the peer universe. MPERS' one, five, and ten year returns all rank in the top quartile of the public fund peer universe, with a risk profile in the lowest 19% of the universe over the ten year period. That combination has produced a Sharpe ratio (a measure of risk vs. reward) that is in the top 6% of our peers.

- The current positioning of the portfolio is detailed on the following page.

Current Asset Allocation, Positioning Relative to Targets, and Impact from Leverage

The historical performance of the portfolio, coupled with a potentially more volatile (transitional) period in the economy, are two reasons why we are excited to bring the leverage and asset allocation proposal in front of the Board. We continue to have strong conviction in the positioning of the portfolio, and have effectively been running a zero cash balance for a significant time. This presents a challenge when volalitilty returns to the market – the difficulty of determining what to sell when rebalancing the portfolio. Should equity markets continue to weaken, the leverage facility provides a valuable source of funds for rebalancing the portfolio in lieu of selling assets. The ability to look beyond short term "noise" and market fluctuations and see the longer-term value proposition is a key differentiator between retail and institutional investors, and the flexibility within a leverage facility capitalizes on that concept. The facility allows MPERS to stay 100% invested across all market environments, which mitigates the "market timing" risk and opportunity costs of holding excess cash in the portfolio. With that in mind, should market volatility continue to push equity prices lower, we anticipate the first use of the leverage facility (if approved) would be to rebalance the equity portfolio back to a neutral weight relative to policy.

As of November 20, 2018, each of the respective asset class allocations are within the permissible ranges. The current allocation relative to policy targets, along with additional comments on the positioning of the portfolio, is provided below. MPERS' current cash balance stands at $23.3 million (or 1.0% of assets), but is expected to be drawn down close to zero over the coming weeks due to benefit payments and new investments.



Notes on Allocation & Positioning

Asset Class	Notes on Allocation & Positioning
Global Equity	Recent market volatility/losses has reduced current allocation. Would look to add exposure if volatility continues.
Fixed Income	Minimal change to allocation. Mid to long--term Government Agency bonds are now yielding over 4%.
Private Equity	Sector remains best performing asset class on an absolute return basis. Allocation has increased given public equity weakness.
Hedge Funds	All underlying strategies would roll into equity and opportunistic debt portfolio if proposed asset allocation mix is approved.
Real Estate	Portfolio is performing well but increasing interest rates could pressure pricing of core portfolio.
Real Assets	Strong performance within the sector relative to equities has increased allocation. Timber is 3.5% of portfolio.
Opportunistic Debt	Remains one of the best performing asset classes with a consistent flow of new investment opportunities.