PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

8/27/2019

2019 Annual Strategic Letter-Summer Update

Our past Strategic Letters provided the Investment Committee, Board and stakeholders updates on our long-term goals, the challenges we face in meeting them and finally the solutions we are collaborating around. As a 2019 summer update, we continue to perform within and above expectations that we set with our first risk budget in 2018 and updated in 2019.

This Letter updates results on goals and performance half-way through the year from our initial Letter published at the beginning of the year. Finally, we provide some updated commentary on the volatile markets and economic environment we are in as well as some updated information on the long-run low return environment.

Goals Review

PERA's 5-year Strategic plan (2018-2022) sets forth the high level goals for all of PERA and sets the Investment Team's focus. These goals also correspond with the investment-related performance measures that are monitored by our regulatory and legislative bodies. I'm happy to report that as of June 30, 2019, we have met or exceeded all our Investment objectives. The following matrix identifies the three key objectives and the actual results we have achieved.

PERA Investment Objectives	Actual Results
Maintain appropriate strategic asset allocation to meet the actuarial discount rate assumption over the long run	✓ Exceeded actuarial hurdle rates for 3 years, 10 years, 30 years, and since data inception (1985)
Meet 10-Year annualized returns to equal or exceed benchmarks	✓ Exceeded Passive "Reference" Portfolio & Internal Benchmarks for 3, 10, 20, 30 years, and since data inception (1985) ✓ For 10 years, PERA produced approximately $1.5 billion in value add over Passive "Reference" Portfolio
Achieve a total investment cost at or below a benchmark cost relative to peers adjusted for fund size and asset mix.	✓ Compared to 317 Global funds (162 U.S. Pension funds, 74 Canadian funds, 70 European funds, 8 Asia-Pacific funds), PERA is low cost and saved approximately $1.7m in fees and costs.

Market Environment

The first quarter of 2019 saw markets and beta rebound strongly from a difficult second half of 2018. The second quarter of 2019 was more muted with May being a difficult month in markets. We continue to see mixed messages all around. It is clear that we are experiencing a late market and economic cycle. Globally, material economic slowing has occurred as central banks, particularly in Europe, are ramping plans for stimulus. In the U.S., while the economy and risk assets have performed relatively well, mixed messages cloud the outlook. Economic and job gains persist in the U.S., but trade wars, fading fiscal stimulus, and an inverted yield curve portend to slowdown and possibly recession ahead.

Further clouding the picture is a Fed that has changed its policy from raising rates to reducing and accommodative as well as re-assessing the overall environment. This couldn't be expressed any better than Jerome Powell himself.

Jerome Powell, Chair of Fed, on August 23 at Jackson Hole, Wyoming

- *"As we look back over the decade since the end of the financial crisis, we can again see fundamental economic changes that call for a reassessment of our policy framework. The current era has been characterized by much lower neutral interest rates, disinflationary pressures, and slower growth. We face heightened risks of lengthy, difficult-to-escape periods in which our policy interest rate is pinned near zero. To address this new normal, we are conducting a public review of our monetary policy strategy, tools, and communications—the first of its kind for the Federal Reserve."*

Importantly, trading in recent months demonstrates just how sensitive investors are to discounting the Fed's plans for adjusting its short-term borrowing rate. For these reasons, we expect a continuation of elevated volatility for the foreseeable future. High levels of volatility are symptomatic of elevated investor uncertainty regarding future conditions and the only reasonable defense to uncertainty is continued "true" diversification.

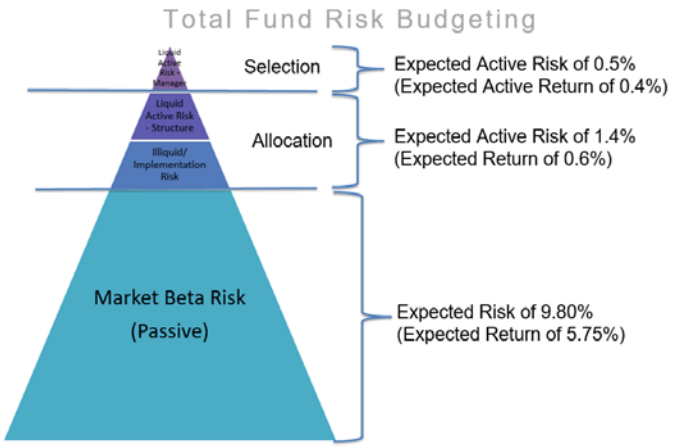
Fiscal Year-in-Review: Performance

PERA achieved a fiscal year-end all time high with assets at roughly $15.7 billion. Performance for the year was 6.4%, which was slightly below the actuarial hurdle but ahead of the Passive "Reference" benchmark and proved to be in the top 23% of all public plan peers. PERA over the long run has beat the actuarial hurdle rate, the Passive "Reference" benchmark and the Internal "Policy" benchmark. The results are shown on the table below.

Time Period	PERA Return (net of fees)	Average Actuarial Hurdle	Passive "Reference" Benchmark	Internal "Policy" Benchmark
One-year	6.38%	7.25%	6.33%	6.96%
Three-year	8.12%	7.71%	7.69%	7.94%
Ten-year	9.12%	7.71%	7.84%	8.54%
Thirty-year	8.29%	7.71%	7.14%	8.12%
Inception to Date (1985)	8.90%	7.71%	8.07%	8.84%

*Reference Benchmark = 58% global stocks/42% bonds passive portfolio. This is equivalent to the risk of PERA portfolio.

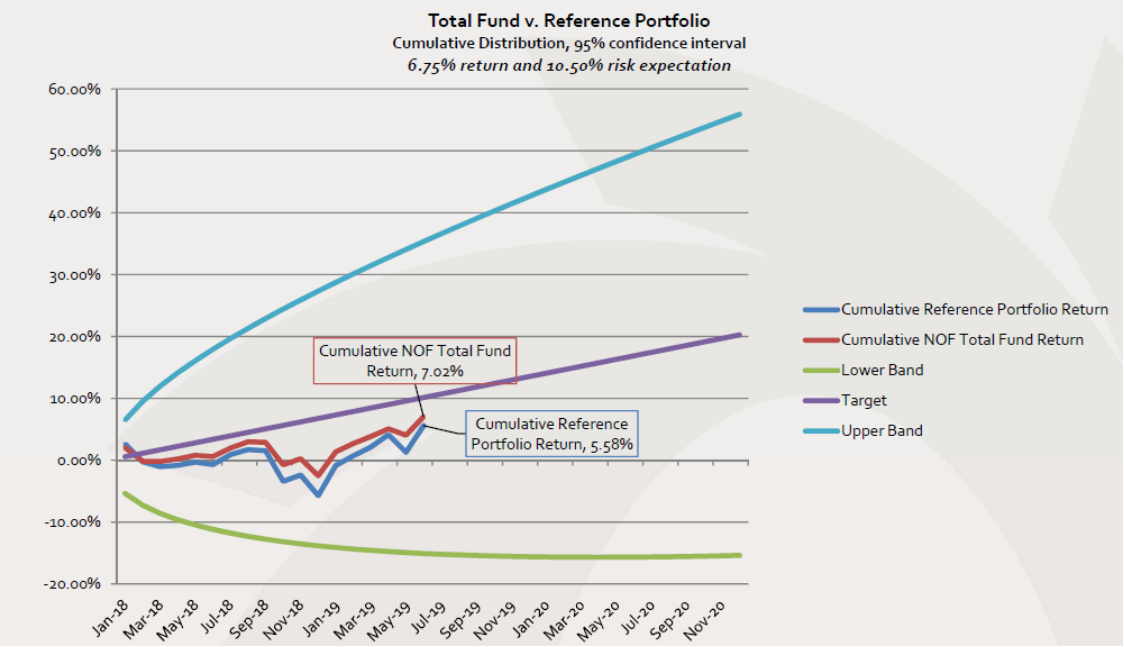
As a reminder, there are key governors in portfolio implementation. First, the adopted Strategic Asset Allocation (SAA), which sets forth 10-year return expectations for each portion of risk taken in the portfolio, or more simply put, serves as the Board's allowance of diversified market beta risk. Second, the adopted Active Risk Budget, which appropriately balances risk tolerance with desired excess return, and serves as the Board's allowance of active risk taken beyond the SAA's market beta risk. The below schematic summarizes the 2018 Board adopted risk budgeting framework:



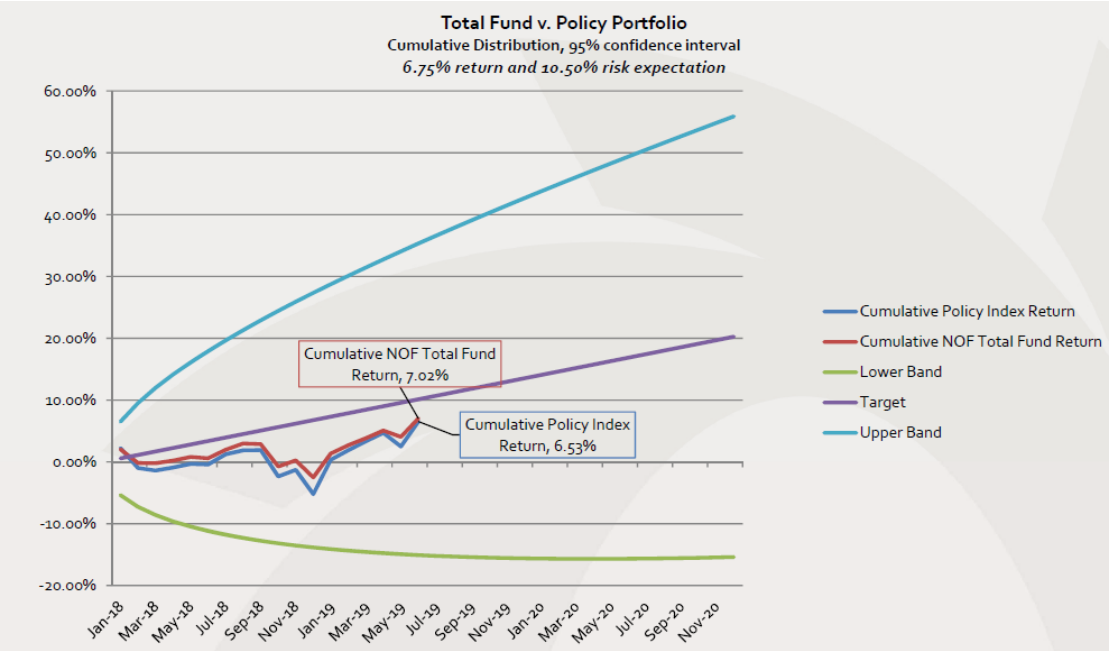
To evaluate the success of portfolio implementation, PERA utilizes two key benchmarks: the Internal Policy Portfolio and the Reference Portfolio. Each serve important purposes. First, the Reference Portfolio is a key evaluation mechanism for monitoring the benefits of our diversified and more complex SAA. It is a simple, 2-asset class (stocks and bonds), liquid index portfolio. We commonly refer to this as the "Bogle Portfolio"; meaning it's the least complex portfolio, designed to achieve our overall risk tolerance of 10.5%.

Second, the Policy Portfolio is a passive and liquid representation of the Board adopted SAA. Performance in excess of this Policy Portfolio reflects the benefit of active implementation decisions, both liquid and illiquid, allocated in accordance with the Board's adopted active risk budget. This is important because employing active risk in a portfolio can be more costly, and should present skill driven results in excess of our low cost market beta. We need to ensure that we are getting our bang for our buck.

The first chart is performance relative to the Passive 'Reference" Portfolio since PERA adopted a risk budget in 2018. Performance has been well within expectations and provided 144 bps of value add.



The second chart is performance relative to the Internal "Policy" benchmark since PERA adopted a risk budget in 2018. Performance has been well within expectation and provided 50 bps of value add.



Finally, on a risk adjusted basis, PERA also compares favorably versus peers. PERA ranks in the top 17% of peers for the fiscal-year-to-date. This is reflective of the portfolio enhancements PERA has made throughout the years to more efficiently use the risk allotted in the portfolio.

	1 Year	3 Year	5 Year	10 Year
PERA Rank	17th percentile	24th percentile	41th percentile	62th percentile
# Funds in Universe	78	77	73	65

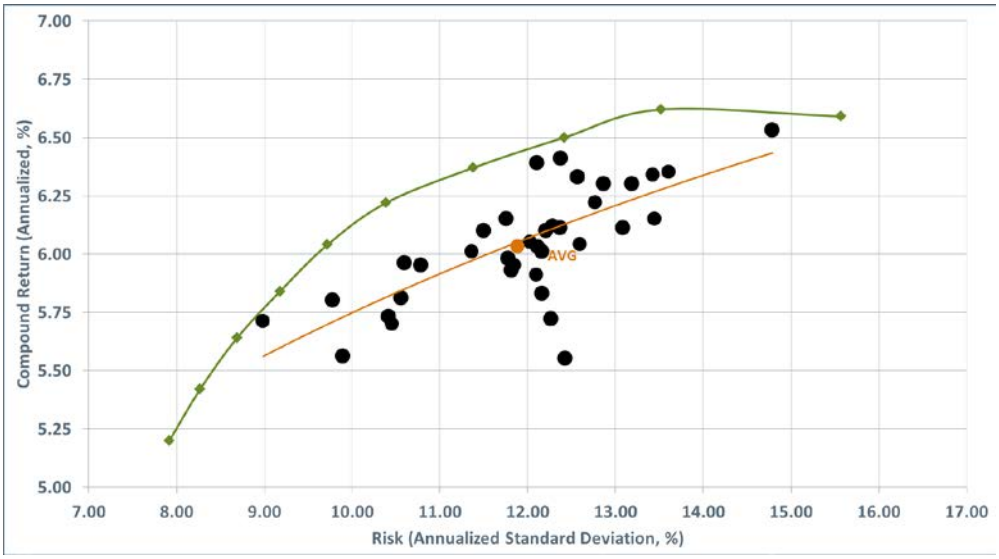
Challenges

We spent a good chunk of time over the past two-years studying not only our goals, but the obstacles to achieving these goals. For 2019, we have identified three strategic challenges: 1. Low Return Environment, 2. Late Cycle Economy, and 3. PERA cash-flow problem "pig-in-the-python". In this Letter, we want to provide an update on one—the Low Return Environment.

1. **Low Return Environment**

We have chronicled extensively the forecasted return environment going forward. The resounding takeaway is to expect modest returns from passive market exposures going forward. Much of the rationale is based on long-run macro factors such as where the monetary and the debt super-cycle stands, demographics, productivity trends, low cash and dividend rates, and finally valuations.

For this discussion, we will highlight another key study from our friends at the New Mexico State Investment Council (SIC). The SIC conducted a study that examined the asset allocation of 37 large public pensions and applied their consultant's 10 year return-risk assumptions. The following black dot analysis shows the results of that study. Each black dot is 37 large public pension plans expected return and risk for the next 10 years. As the graph depicts, the average expectation for return is quite low at 6% with a high of 6.5% for the highest risk fund.



Additionally, PERA partnered with the SIC to conduct an additional study based on PERA's long-term risk premium returns. Risk premium is calculated as returns above the return of 10-year U.S. Treasury bond. Based on this historical analysis, PERA's median risk premium return was roughly 3.0%. Assuming PERA will continue to achieve a 3% risk premium, combined with June's current yield on the 10-Year U.S. Treasury of 2.20%; one would expect a go forward return of 5.20%, which is shown in the table below.

Historical View

Category	Risk Premium Multiplier	Risk Premium	Curr 10 Yr Tsy Yield	Expected Return
Very Lucky	150%	4.50%	2.20%	6.70%
Lucky	125%	3.75%	2.20%	5.95%
Expected	100%	3.00%	2.20%	5.20%
Unlucky	75%	2.25%	2.20%	4.45%
Very Unlucky	50%	1.50%	2.20%	3.70%

Note: Historical Risk Premium is about 3.00% at median

Bottom line, these additional return assumption studies provide further indication for a low return environment. By and large, institutional investors, depending on their risk tolerance face long term expected returns in the 5.5% to 6.5% range, based on these studies. Of course, this is well below PERA's assumed actuarial hurdle rate of 7.25%.

Solutions: Bridging the Return Gap

The road ahead is undoubtedly challenging to meet actuarial hurdles. We have identified the following three key strategies to help meet the future return gap. In total, we believe over the next 10 years the quality execution of the below strategies will help bridge the gap from 5.6% to roughly 7.0%; providing 1.4% in value add over the Passive Reference Portfolio.

1. *Risk Balance: Improved Strategic Asset Allocation (Beta)*
   This strategy employs better risk balanced diversification and our custom risk parity initiatives that were approved by the Board in 2018 and we have implemented in Q2 2019. By doing so, we improve our return/risk ratio and improve return expectations above the Passive Reference Portfolio.

2. *Private Assets: Improving Effectiveness of Private Active Management (Allocation)*
   We have worked hard to be more deliberate in our allocations to private partnerships and more scrupulous in examining the fees we pay. The analytic and process enhancements we have made here will help us be better private allocators as we expand the strategy and integrate co-investing and other interesting partnership structures to extract more value add.

3. *Active: More Robust Public Active Management (Selection)*
   Similar to our private active management, we have made great strides in Selection and emphasizing our idiosyncratic risk. We've seen this in our analytic and process enhancements and re-shaping of public active exposures in equity and credit. Expanding this exposure to include 130/30 and alpha overlay will be further value adding in the future.

Conclusions

As we continue to move strategically to "*Bridge the Gap*" by incorporating Risk Balance and initiatives to improve our active risk via public market active management (Selection) and private asset management (Allocation) enhancements, we need to be aware that the current environment around us is moving to a later stage business cycle. We will need to maneuver these short run risks to execute our long term strategy and path. We have developed a high level game plan to keep moving forward on strategic objectives. This late cycle also has implications for the path dependency of our returns and how that impacts our funding status.

For 2019 to-date, PERA and staff continue to make progress on key investment initiatives. In brief, these initiatives include:

- Implementing and funding ~3% of assets in our custom risk parity strategy
- Continued ramp-up and funding of private assets
- Expansion of cash/liquidity overlay and implementation Structure risk overlay
- Upgrading manager monitoring processes
- Further study of portable alpha strategies for potential implementation to improve Selection
- Planning for technology/analytics upgrades