PERA

Public Employees
Retirement Association
*of* New Mexico

INVESTED IN TOMORROW.

1/31/2019

# 2019 Annual Strategic Letter

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 to overcome these challenges we see ahead. While 2018 will show-up in the books as a negative return year, PERA actually had a rather successful year in a number of different ways.

First, active management and better strategic asset allocation decisions really paid-off. We will go into further depth on these issues, but decisions PERA made produced material value add over benchmarks, which added hundreds of millions of dollars to the Fund's coffers. Second, we made significant progress in investment governance after the Board's investment delegation enhancements of December 2017. We incorporated our 5-stage manager selection process, created our internal investment team meeting called PRISM, adopted a risk budget process and upgraded benchmarking. Third, we had very constructive education sessions that culminated in adopting a new strategic asset allocation (SAA) that incorporates an unconventional risk balance strategy, which further improves our risk/return ratio and the "true" diversification in the portfolio. Fourth, we had very insightful and informative meetings and research on our asset/liability work. This led to greater understanding of the current unhealthy trajectory of PERA's projected cash-flows and provided the impetus for the Board to recommend a benefit structure re-design that moves PERA into a better funding situation. This activity also resulted in adopting a new long term actuarial discount rate of 7.25%, which is a more practical assumption that recognizes the potential of a lower return over the next 10 years.

Finally, the investment team was able to evaluate the progress made throughout the year with our staff planning session. During this session we discussed what went well and what didn't, and focused on ideas and actions for the coming year to add value in the portfolio. This letter is a result of this whole process and interaction that highlights forward challenges, ideas, and 2019 planned initiatives.

## Goals Review

PERA's 5-year Strategic plan (2018-2022) sets forth the high level strategic goals for all of PERA and sets the Investment Team's focus. The key goals and priorities from this plan are:

1. Maintain an appropriate strategic asset allocation (SAA) to meet the actuarial discount rate assumption.

   *2018 Year-End Update: the Board adopted a new long term actuarial discount rate of 7.25%. Embedded in the rationale for the 7.25% is an expectation of 6.75% over the next ten years as recognition of the current low return environment with higher expected returns thereafter. PERA's 2018 10-year expected returns, which include strategic asset allocation targets and assumptions for active management is 6.75% at 10.5% volatility. Moreover, over the long-term, PERA's investment returns have exceeded actuarial discount rates with a 10-year return at 8.44% and 30-year return of 8.33%.*

2. Provide ten-year annualized returns that equal or exceed the policy benchmark, net of fees.

   *2018 Year-End Update: PERA has met this objective. PERA has exceeded the policy benchmark, net of fees, in all relevant time periods: 1 year, 3 year, 5 year, 7 year, and 10 years. Specifically, over the past 10 years, PERA has exceeded the policy benchmark by 63 bps annualized.*

3. Work towards a 30 year funding period for unfunded actuarial accrued liability

   *2018 Year-End Update: after much research, analysis, and deliberation; the PERA Board adopted a solvency recommendation that would get the fund within a 30 year period for funding the UAAL.*

4. Achieve a total investment cost at or below 85 bps

*2018 Year-End Update: PERA has met this objective, with annual management fees equal to 46bps of the fund for Fiscal Year 2018. PERA continues to be cost-effective and focuses on driving costs lower at the manager level. In 2018 staff re-negotiated management fee, resulting in an annual fee savings of nearly $2 million per year.*

## Market Environment

Volatility returned to markets in 2018, driven by concerns over monetary tightening, global trade (U.S./China tariffs and negotiations, Brexit, etc.) and waning future economic growth. Volatility escalated into the final weeks of trading in 2018 as stock markets sold-off into bear market territory. Trading moves were symptomatic of jittery investors reacting (likely even overreacting) to every bit of news, confirmed or speculated. Contributing to the level of uncertainty at year-end were the U.S. budget impasse and subsequent partial government shutdown.

As we enter 2019, markets have found their footing and rebounded strongly, as the Federal Reserve has decelerated the pace at which they withdraw their balance sheet roll back quantitative easing. Importantly, trading in recent months demonstrates just how sensitive investors are to discounting the Fed's plans for adjusting its short-term borrowing rate. Though the move back to a positive real rate of return on cash is good for investors and the long-term sustainability of healthy markets, the transition back to higher discount rates dampens economic growth and can contribute to asset class volatility as it raises the cost of borrowing and therefore curbs credit-fueled spending/investment.

For these reasons – monetary tightening, fading fiscal stimulus, U.S./China trade negotiations, etc. – 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.

## Year-in-Review: Performance

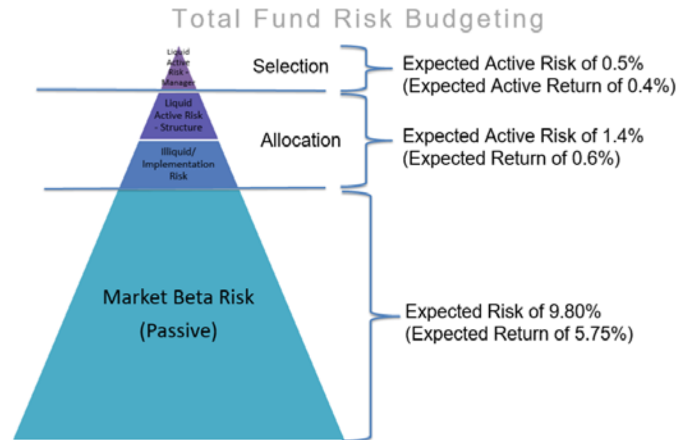
2018 proved to be a very strong performance year relatively, during a market period where asset classes across the risk spectrum, all declined. PERA out-performed the policy portfolio and the reference portfolio significantly. In total, PERA generated over $536 million in value add over these benchmarks.

PERA and staff made a significant amount of implementation decisions and substantial progress toward achieving our strategic goals in 2018. In brief, these activities include:

- Re-balance to strategic asset allocation (SAA) targets. This was a large re-allocation of assets to get to SAA targets and include more liquid real asset sub-classes. This re-allocated $930 million of assets, primarily from equities, to TIPS and commodities. The trade netted a 3.3% excess value add or $30 million.
- Adoption of a Risk Budget and active return target
- Inclusion of Risk Balance in the SAA
- An upgrade and re-allocation of active management risk in public equities
- Re-alignment of credit mandates
- Continued ramp-up of illiquid risk via private equity, illiquid real estate, and illiquid real assets

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 Policy Portfolio and the Reference Portfolio. Each serve important purposes. First, 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.

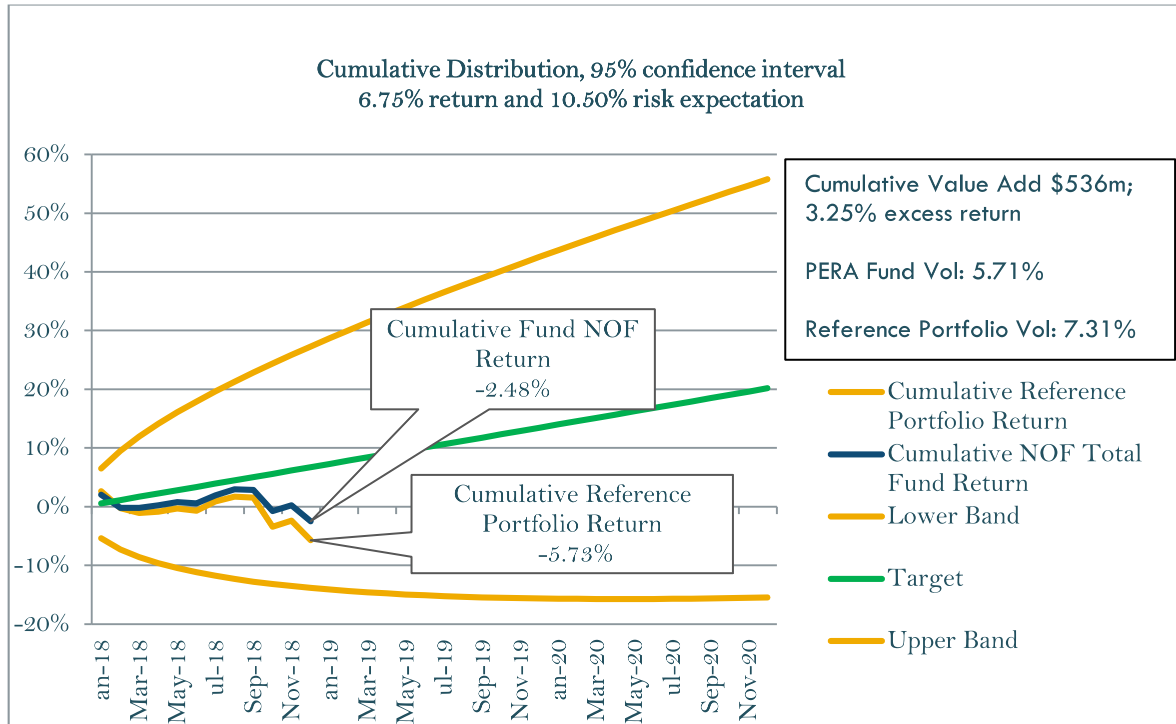
Second, the Reference Portfolio is a key evaluation mechanism for monitoring the benefits of our diversified and more complex SAA. It is a simple, 2-asset class (stocks and bonds), liquid index portfolio. We commonly refer to this as the "Bogle Portfolio"; meaning it's the least complex portfolio, designed to achieve our overall risk tolerance of 10.5%. Benchmark constituents are summarized below:

| Benchmark | Description | Calculation |
|---|---|---|
| Policy Portfolio | Passive and liquid implementation of the strategic asset allocation (SAA) | 43.5% Equity blend<br>• MSCI ACWI IMI<br>• MSCI ACWI Minimum Vol.<br>• Russell 3000<br>21.5% Risk Reduction blend (core bonds)<br>• Bloomberg Barclays US Aggregate<br>• Bloomberg Barclays Global Aggregate<br>15% Credit blend<br>• Bloomberg Barclays Global High Yield<br>• 50% JPM EMBI diversified, 50% JPM GBI<br>20% Real Asset blend<br>• Wilshire Global REITs<br>• Alerian MLP index<br>• DJ-Brookfield Global Infrastructure Index<br>• Bloomberg Barclays US TIPS<br>• Bloomberg Commodity index |
| Reference Portfolio | Passive and liquid implementation of a simple 2-asset class portfolio, targeting a 10.5% expected risk. | 58% Global Equity<br>• MSCI ACWI IMI<br>42% Core Bonds<br>• Bloomberg Barclays Global Aggregate. |

With the background of our risk budget and key portfolio benchmarks, we can now evaluate how the portfolio did in 2018. Because return assumptions are forecasted over a 10 year horizon, it is important to set expectations. For instance, PERA's 10 year total return assumption of 6.75% with a risk of 10.5% doesn't mean we will generate exactly 6.75% every single year for the next 10 years. Rather, it means that over a 10-year horizon our central expectation is 6.75%, but in some years we will have returns above and below that expectation and normally distributed based on our 10.5% expected volatility.

The following series of charts take this statistical and expected value viewpoint into account. For instance, the graph below depicts the cumulative returns in the 2018 calendar year for PERA relative to our Reference Portfolio. PERA's performance is in blue and the Reference Portfolio is in yellow. The graph also compares this with our central return expectation of 6.75% shown as the green constant target line. Moreover, because at the total fund we are taking an expected 10.5% volatility or risk, we show a 95% confidence band around our return expectations, as shown in the orange bands. What this illustrates is that 95% of the time, we should expect our returns to be within the bands given our targeted volatility.

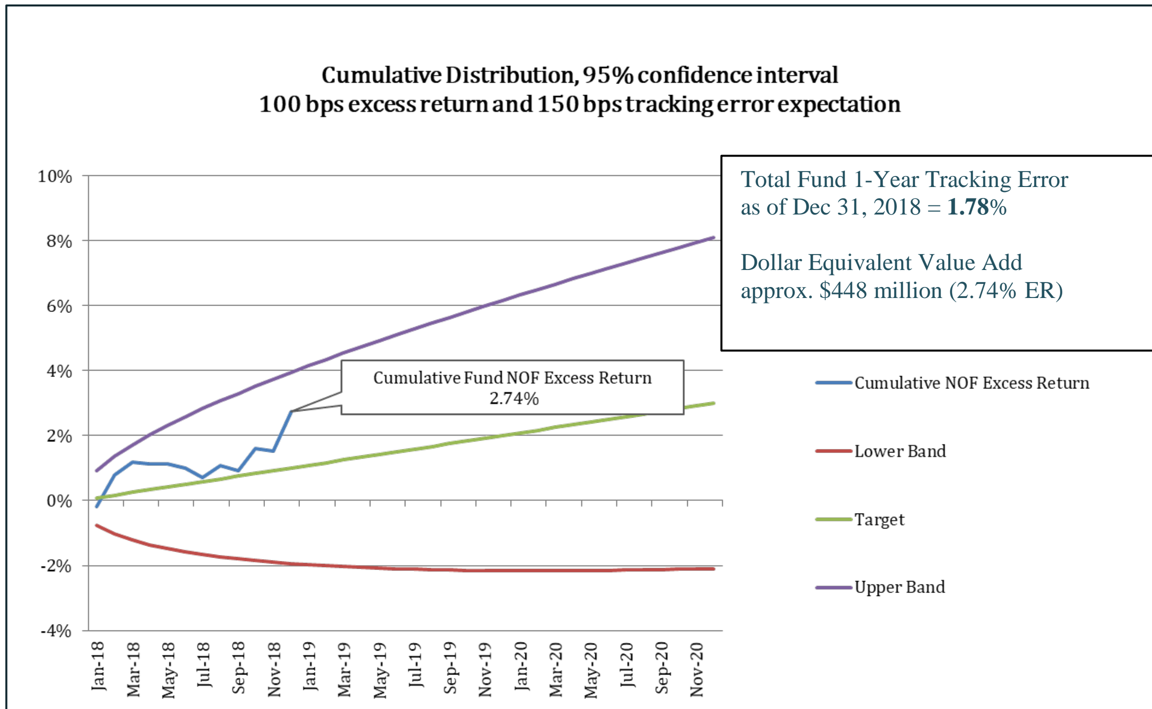
As the graph depicts, PERA's actual returns, are well-within what we would expect given our targeted return and volatility. Furthermore, PERA's actual returns out-performed the Reference Portfolio by 3.25% and produced more than $536 million in value add to the fund. This demonstrates the value of diversity, complexity, sophistication and active management in a very challenging absolute return year.




The second benchmark compared to PERA's actual returns is the Policy Portfolio. Again, this benchmark is designed to compare the value of active implementation decisions, outside of the liquid passive SAA. In the risk budget adopted by the Board, the 10-year target return of active management is 1% with a mean excess risk or tracking error of 1.5%. In the graph below, the target excess return of 1% is shown in green and the 95% confidence bands scaled to 1.5% tracking error are shown in orange.

For 2018, PERA produced an excess return of 2.74% over the policy portfolio. This was within our budgeted active risk and our 12 month rolling tracking error is sitting near our expectation. Secondly, the 2.74%

excess return is above our target expectation of 1%, which resulted in value added of more than $448 million to the fund.



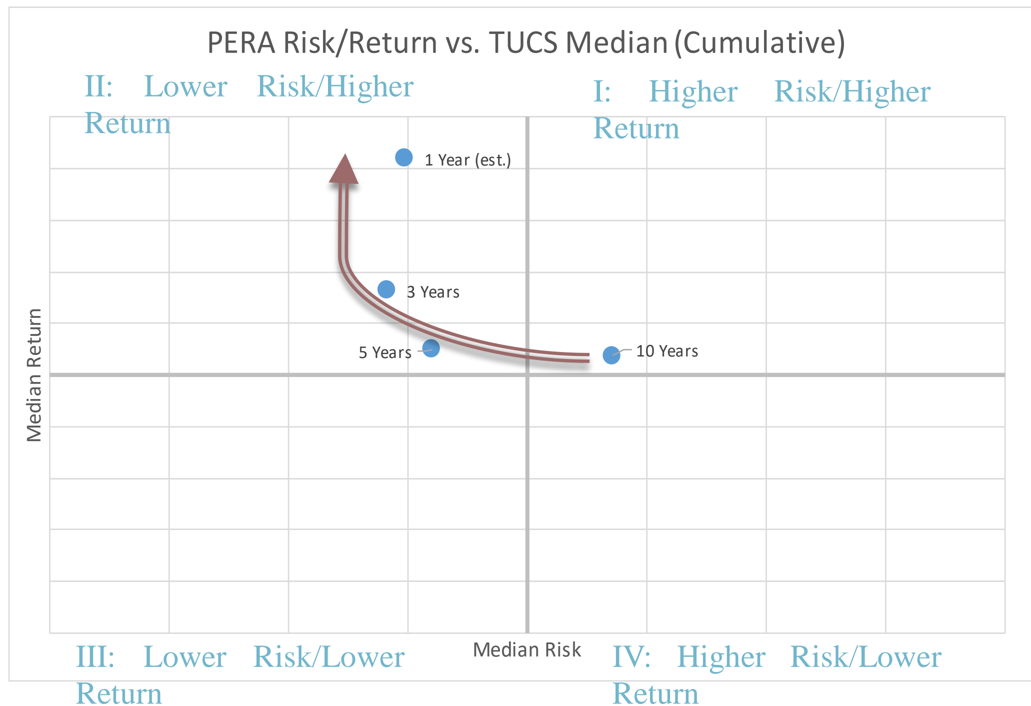

To put the returns in context with our operating costs, we show the following cost-benefit analysis. For instance, the cumulative value add for 2018, was roughly $536 million versus the Reference Portfolio. This is net of all management fees and costs. The cost to operate all of PERA from a salary and benefits perspective was $6.4 million. Thus, for all the hard work to build and monitor a complex, sophisticated portfolio *and* to employ expert staff; PERA members received a net value add of $536 million. Members kept 99% of all the value add generated, and 1% of the value add was utilized for staff via salaries and benefits. This is outstanding value for 2018. Moreover, this same positive trade-off to members remains significant when looking at long-term cost-benefit analysis.

| | Return Enhancement | Gross Value-Add | Cost of FY2018 Comp | Net Value-Add |
|---|---|---|---|---|
| Implementation Decisions | +2.74% | $454,949,322 | $6,431,600 | $448,517,722 |
| SAA Decisions | +0.51% | $93,643,379 | $6,431,600 | $87,211,779 |
| TOTAL | +3.25% | $542,729,501 | 6,431,600 | $535,729,501 |

Finally, PERA's long term performance and peer rankings improved markedly in the calendar year. For instance, PERA has out-performed its investment benchmarks for 1 year, 3 year, 5 year, 7 year, 10 year, 20 year, and 30 year periods.

On a risk adjusted basis, PERA also compares favorably versus peers. For the 3 year period, PERA's returns rank in the top 14% of all peers and top 28% on a 5 year basis. Furthermore, PERA has seen a progressive improvement in its risk-adjusted peer comparisons. This is reflective of the portfolio enhancements PERA has made throughout the years. The following graph depicts this progression. Relative to peers, the upper left hand box is where you want to be and conversely the lower right hand box is where you don't want to be. What this graph depicts is the effective use of risk versus peers—if you are in the upper left hand box you

are out-performing peers with less use of risk. Over the past 10 years, it is visible how PERA's portfolio has improved relative to peers, and is progressing toward being one of the more efficient users of risk in the institutional investment universe.




## Challenges

We spent a good chunk of time in 2018 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". Each one of these challenges is further described below.

1. **Low Return Environment**

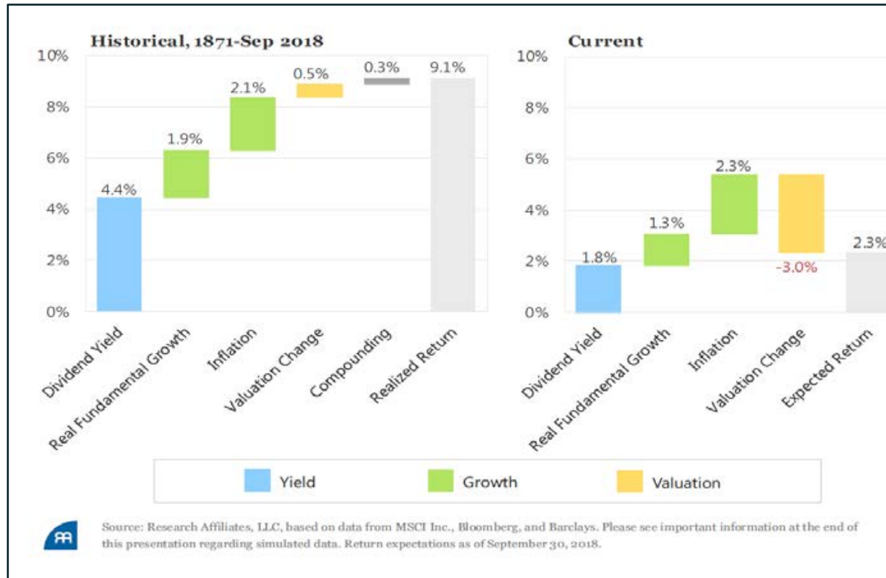
We have chronicled extensively the forecasted return environment going forward. In 2018, we highlighted numerous forecasts from respected firms and brought in numerous experts to discuss this topic, including a panel of New Mexico-based experts. The resounding takeaway is to expect modest returns from 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 the building blocks of returns for equities and bonds and compare this to history. To cut to the chase, expected yield for both equities and bonds, as well as valuations in equities, are the major drag on forward expected returns

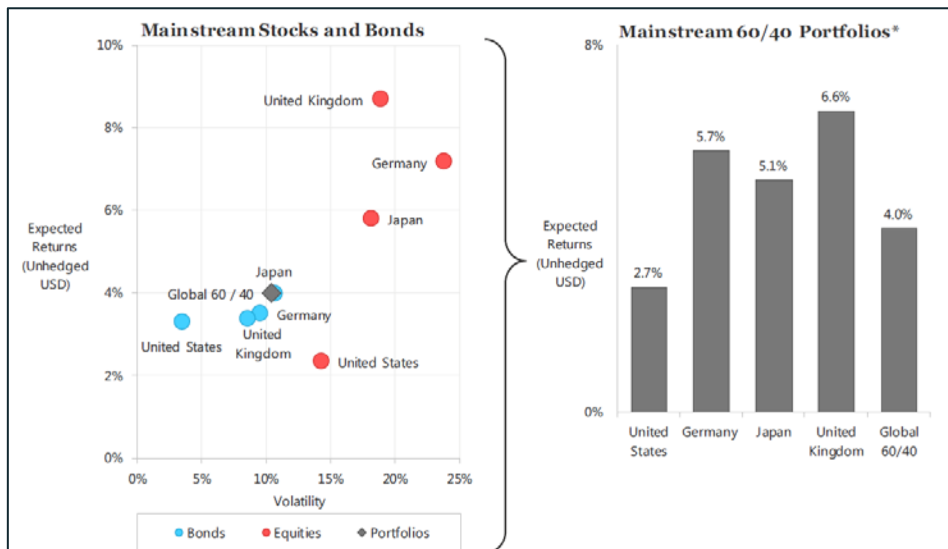
Since 1871, U.S. equities have returned an annualized 9.1%. The source of those returns comes from a handful of macro or economic factors, such as yield, economic growth (nominal and real), valuation, and re-investment/compounding factors, and the dominant factors (~92%) are attributable to dividend yield and nominal growth.

Extrapolating the factor decomposition for today, one will see there are two areas that fall woefully short of historical readings. Nominal growth expectations are lower than historical realizations, but are within the ballpark. While current dividend yields are less than half of what has been realized historically, at around 1.8%. Secondly, valuations, are in higher quartile ranges which portend to a reversion to more normalized levels, thus a negative expectation. While this has improved somewhat after the final quarter of 2018, this is at best neutral. All in all, this forecasts for a quite low long term equity return.

The following graph does a side-by-side comparison of this decomposition to show the stark difference of what we have experienced historically in equities versus what today's values look like.




Additionally, once an investor incorporates long term expected returns for bonds, which very closely match its current yield (see exhibit 1 in appendix), one can get a better picture of what a long term traditional diversified portfolio may return. Below are Research Affiliate's expected long term returns for a traditional, conventional 60% equities and 40% bonds portfolio, which by the way closely mirrors our Reference Portfolio. As the graph depicts, the returns are quite modest: a global 60/40 portfolio is expected to produce only a 4.0% return going forward.

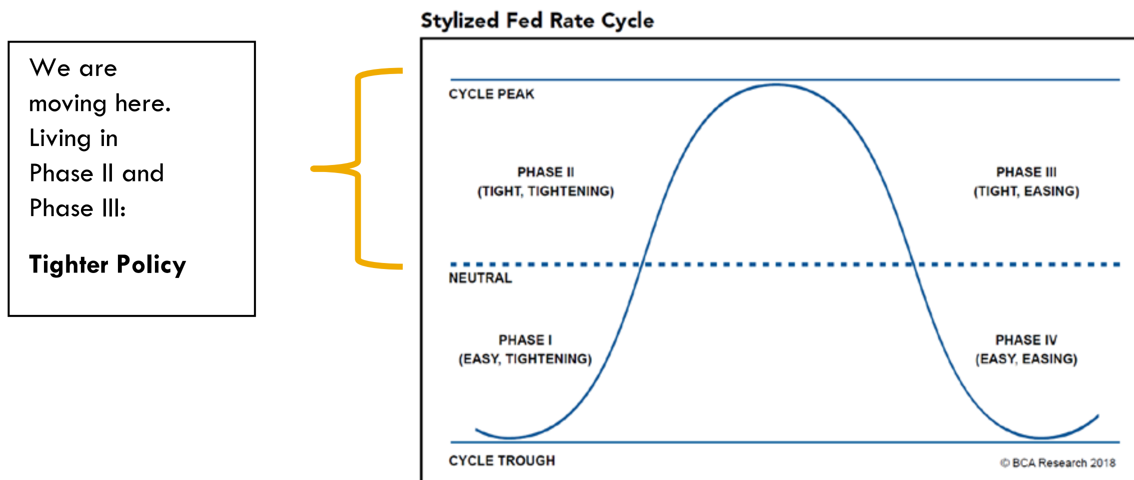


2. **Late Cycle Economy**

In past letters, we dedicated time discussing how the economy is progressing through the late cycle and what that portends for risk asset returns. In short, risk assets don't typically do very well in a late cycle economy. There are a few key features of a late cycle that we want to highlight. The following graph, courtesy of BCA Research, is a very good depiction of the monetary and interest rate cycle, which is a big driver of economic and thus market performance.

Since the global financial crisis, central banks world-wide have undertaken an unprecedented monetary easing cycle. In BCA Research's graph, this is Phase III and Phase IV. In fact, easing or Phase IV has lasted for an extended period, which took interest rates to near zero and when including quantitative easing, took effective interest rates negative. This propelled a very strong one-way bull market in risk assets supported by a tsunami of liquidity.

Fast forward to today, the Fed is slowly unwinding this tsunami and moving through a monetary and interest rate hiking phase. The Fed is moving out of Phase I below. Given the Fed's recent pause, it is arguable where exactly the Fed is in the tightening phase, but bottom line is there is more room to go and possibly an extended tightening phase to unravel the tsunami.




What does any of this mean for assets? Since 1961, virtually all the positive return of stocks has been made in the easing phases, Phase I and Phase IV. Again, we are entering the tightening phases, Phase II and Phase III. The historical returns in those periods is roughly zero (see Exhibit 2 in the appendix).

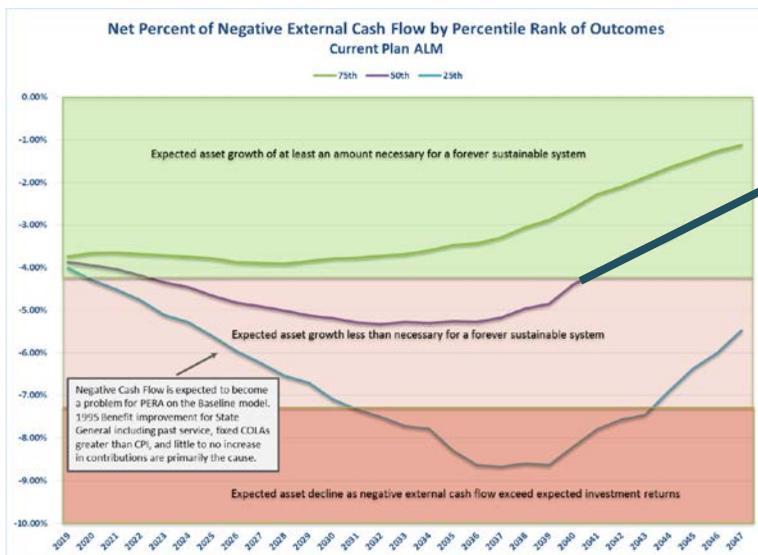
3. **Burgeoning Negative Cash Flow: Pig-in-the-Python**

PERA faces not just a return problem, but more importantly a cash flow problem. In short, over the past 20 years or so there have been three funding issues that put a significant strain on our cash-flow and funding status. It started in the mid-1990s with unfunded benefit enhancements, continued with employee/employer contribution rates being below the actuarial cost, and finally PERA paying fixed COLAs above CPI and what we actually could afford. These primary effects have created a liability bulge.

Over the next 15 years or so, we project the liability bulge or pig-in-the-python from past funding errors will increase the cash outflow of our earnings from roughly 3.75% currently to nearly 5.5%. This is a cash outflow growth rate that is outside our comfort zone and a material problem. This is our base case: meaning if we hit our 7.25% returns over this period. If we experience something less, the picture is worse.

The below chart highlights this problem. The chart is a summary of the distribution of 500 Monte-Carlo simulations of varying investment return scenarios juxtaposed with the expected cash outflow of our liabilities. For instance, the purple line is our base case assumption, which, as mentioned, burgeons to roughly a negative 5.5% cash outflow when we hit the 7.25% actuarial return hurdle. In the downside case of investment returns, we are unsustainable. In a nutshell, our goal is to build a portfolio and plan design that minimizes the bad case outcome to a level that we can live with. Unfortunately, investments can only do so much.

Finally, we get the question many times….what did the previous pension reform in 2013 do? Pension reform in 2013 put PERA on a vastly better path. Specifically, by creating a Tier 2 benefit structure that is less a burdensome liability structure. You can see the inflection point (below) in 2036, which is when Tier 2 retirees become the majority beneficiary class and the Tier 1current retirees' liability rolls out of the system.




## CASHFLOW

One of the big positive impacts of 2013 Pension Reform: creation of Tier 2 employees. Combined with rolling off of Tier 1 liabilities (pig-in-the-python) around 2036, a much better cash flow projection results.

## Solutions: Bridging the Return Gap

The road ahead is undoubtedly challenging. We have identified the following four strategies to help meet the future return gap.

1. *Improved Strategic Asset Allocation (Beta)*
   After much study and Board approval, in 2019 we will employ risk balance into our strategic asset allocation. This has many benefits. It will increase our expected return and decrease our expected risk, therefore improve our risk-adjusted (Sharpe) returns. Moreover, the risk balance inclusion improves our "true" risk diversification by reducing the expected risk contribution coming from equities to spread elsewhere in the portfolio and better diversify across different economic regimes. What this effect does is better align our assets with the nature of our liabilities and improves our surplus risk and return metrics. This also incrementally mitigates downside risk by improving the distribution of our returns.

   This enhancement, combined, with incrementally higher beta expectations, due to improved valuations in 2018, will increase our expected portfolio outcomes for the next 10 years. (See Exhibit 3 in the appendix for graphs providing the value of risk balance)

2. *Improving Effectiveness of Private Active Management (Allocation)*
   We continue on a path to ramp-up the Allocation piece of our risk budget which is dominated by the active risk and illiquid premium of our private assets across equity, credit and real assets. As a percentage of our portfolio, we are roughly 21% allocated to private assets, our target is to move closer to 27%. The private asset classes are value adding, but laborious and difficult to implement.

   As such, we have created a new Investment Associate position to primarily assist in the diligence and monitoring of active risk. Moreover, we believe by adding staff and other resources we can provide value. In particular, we believe instituting more creative structures such as joint-ventures, separate accounts, GP stakes, and co-investments; we can extract more value add and be more cost efficient. Part of this calculus includes continuing the upgrades from a technology and analytics standpoint where we can further use our Direct Alpha and alpha split toolset to evaluate the best opportunities. This is where our new resources will be particularly helpful, where conservatively we believe this can generate an extra $40 million to the plan cumulatively over multiple years.

   Finally, improvements and increases in active risk can add material value add and become an important strategy to Bridging the Return Gap.

3. *More Robust Public Active Management (Selection)*
   Throughout 2018 we made meaningful enhancements to our public market active risk. These were centered around focusing on our managers' ability to produce consistent idiosyncratic active exposures through a Beta-1, alpha-beta separation lens. This led to numerous changes in active public equities and active public credit moving from lower conviction strategies that didn't meet these parameters to higher conviction strategies that better fit this mold going forward. In the process, we also reduced fees, saving roughly $2 million annually.

   2019 will be a continuation of that process as we further explore how we can get to the next level in our public active management. Much of this centers around relaxing the long-only constraint. By introducing the ability for managers to short, we expect an improvement in managers' risk adjusted active returns, which translates into more efficient alpha. Strategies we will explore are 130-30 public equity strategies and we will pilot an updated portable alpha portfolio focusing on market neutral oriented strategies. Lastly, as we continue to search for the best idiosyncratic active strategies in this section of our risk budget, there is an impactful externality that can exist. We tend to generate factor-oriented risk, such as geographic or cap-size weightings different from our policy benchmarks. We believe these over-time will pay-off, but in short time frames can be dominated by risk-on/risk-off sentiment and co-movement during risk-off periods. As such, we will examine a way to better manage this risk and profit from it.

4. *Building a Game-plan to Manage the Turn*
   We, nor anyone else, can predict precisely when the next real downturn will occur and more importantly very few, if any, investors are able to consistently and profitably "time" portfolio allocations around this event. Nonetheless, as we have highlighted, the data points us in the direction of a late cycle economy and potential recession in the intermediate term. What is useful is to build a game plan to prepare for these events. In the coming quarter we will look to refine this game-plan, but there are three key high level foci we will center our actions around *before, during, and after* the down cycle.
   a. *Liquidity*. We are in a very strong liquid position as a total plan. We think there are some additional actions we can take *before* the downturn via our Beta Overlay to strengthen our liquidity and mitigate the effects of being a forced seller in a higher stress period.

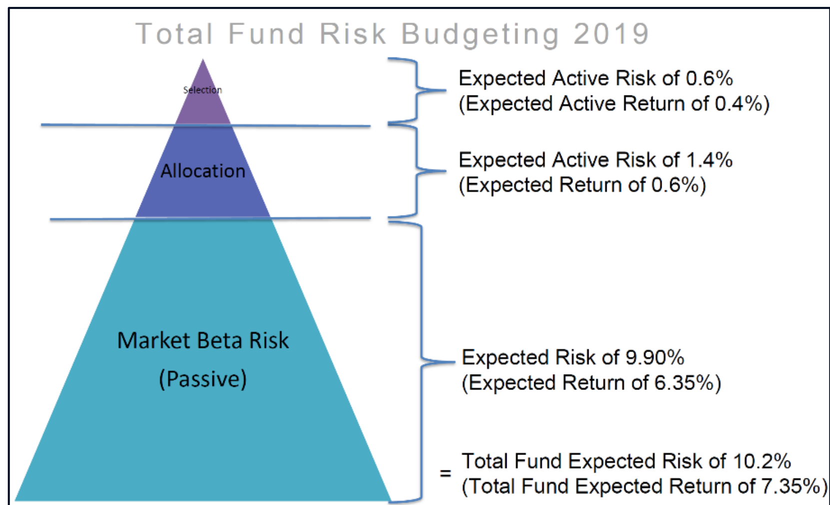
This includes expanding the diversification of our derivative toolset and increasing the scope of the cash overlay.

b. *Take advantage of distressed markets* (contingent capital, continue pacing plan). Maintaining our strong liquid position and having the proverbial "dry powder" combined with our investment governance delegation gives PERA a good position to have strong hands and act expeditiously to take advantage of opportunities. We believe this can mainly occur in the private markets as we ramp to our targets at improved valuations and terms. This includes not skipping a beat in pacing plans, seeking contingent capital vehicles, and being opportunistic.

c. *Re-balancing*. What is very important through a stressed market is to maintain strategic asset allocation targets and meet re-balancing policies. This is where value can be created. One of the big lessons learned for PERA was its inability in the Great Recession to meet these objectives. It was at a significant cost. By maintaining our liquidity, enhancing our Beta overlay, and staying disciplined to strategic asset allocation (SAA) targets through re-balancing will add value *during* and *after* the stress event.

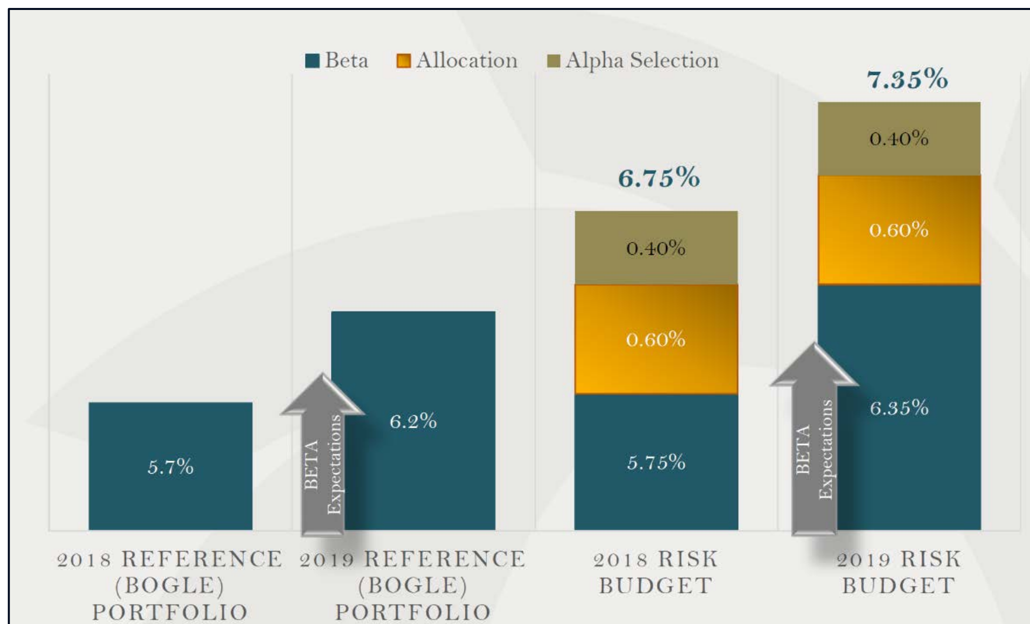
   On this note, we re-examined our strategic asset allocation (SAA) targets combined with our re-balancing policy, including the enhancements we expect to make in the Beta Overlay, to determine the value of staying disciplined. PERA maintains a 10% proportional band rebalancing policy in its current cash overlay program, which is expected to add value through time relative to no re-balancing or other variations. Importantly, we see similar value add results when focusing on shorter time periods, particularly in times of stress. Thus, we are comfortable with our current policy and seek to stay disciplined through market volatility.

All in all, the improvements we have made thus far and the next level enhancements we are exploring should improve expected risk-adjusted returns. The following would be our preliminary 10-year expected returns for all initiatives. Beta expected returns are 6.35%, an increase from 2018 and are reflective of better valuations in the public markets and risk balancing initiatives. The potential 1.0% expected returns from active risk is derived from initiatives in public and private active management discussed above. In total, we forecast all these initiatives would aggregate into a 7.35% 10 year median expected return for the total fund at 10.2% volatility.



It is important to set expectations around this number. The expected total return of 7.35% with a 10.2% expected volatility means that over a 10 year period we could expect a range of outcomes 50% below 7.35% and 50% of outcomes above 7.35%. Notably, this is slightly above our actuarial hurdle of 7.25%. However, in this number we are embedding alpha, particularly Selection or idiosyncratic active risk, which is less reliable. At this point of the investment super-cycle, this is a necessity. However, over the long run we would prefer that Beta + Allocation active risk to roughly equal our actuarial hurdle and the Selection active risk serve as "gravy" or extra buffer to increase the odds of us hitting our actuarial hurdle over long periods of time.

Furthermore, we have seen progress over the past 2-years in our strategic efforts to "Bridge the Return Gap." The following highlights that progress through our risk budgeting process. In particular, it shows the value of enhanced diversification, private asset and active management investing. In short, if we didn't include these levers and relied solely on passive indexing and held the "Bogle" portfolio, we would be significantly short of objectives.




## Investment Work Plan

At the beginning of each year we set forth a work-plan and some key goals for the year to provide direction of key activities and potential action items for the year. In 2018, we implemented the foundational pieces of our investment process by improving governance, SAA policy updates, and benchmarking. For the Investment Committee in 2019, we anticipate four (4) meetings and a workload with limited action items packed more with execution and monitoring activities. The following are key highlights from the Investment Committee proposed work plan for 2019:

February

- CIO Update
- Risk budgeting update, action item, if necessary.
- Staff Investment Consultant report
- Manager Activity Report

- Performance, Risk and regular portfolio reporting

May

- CIO Update
- Guest Speaker or Panel Topic: Disruptive Technology
- Reference Portfolio update, action item, if necessary
- Staff Investment Consultant report
- Manager Activity Report
- Performance, Risk and regular portfolio reporting

August

- CIO Update
- Guest Speaker or Panel Topic: Portfolio Tools
- Update on Internal Investment Process
- Staff Investment Consultant report
- Manager Activity Report
- Performance, Risk and regular portfolio reporting

November

- CIO Update
- Asset Allocation and Benchmarking Update, action item, if necessary
- Staff Investment Consultant report
- Manager Activity Report
- Performance, Risk and regular portfolio reporting

In addition, resulting from our two-day staff planning sessions, Investment Staff has set a matrix of goals and priorities for the year. These are initiatives we believe can add value in the portfolio and highly align with the insights and activities highlighted in this letter. The following are a summary of some key Staff priorities categorized by our Risk Budget:

- Selection
    - Continue to enhance our qualitative and quantitative manager monitoring process
    - Further explore and study strategies that relax the long-only constraint: 130/30 and portable alpha
- Allocation
    - Continue to study, explore implementation of a total fund overlay
    - Define strategy for co-invest and secondaries
- Beta
    - Implement Risk Balance for SAA.

Moreover, we will also work on key activities to upgrade our infrastructure, particularly tools and technology, as well as gear-up for the potential to recruit new members to the team and integrate activities that advance a positive culture of team-work.

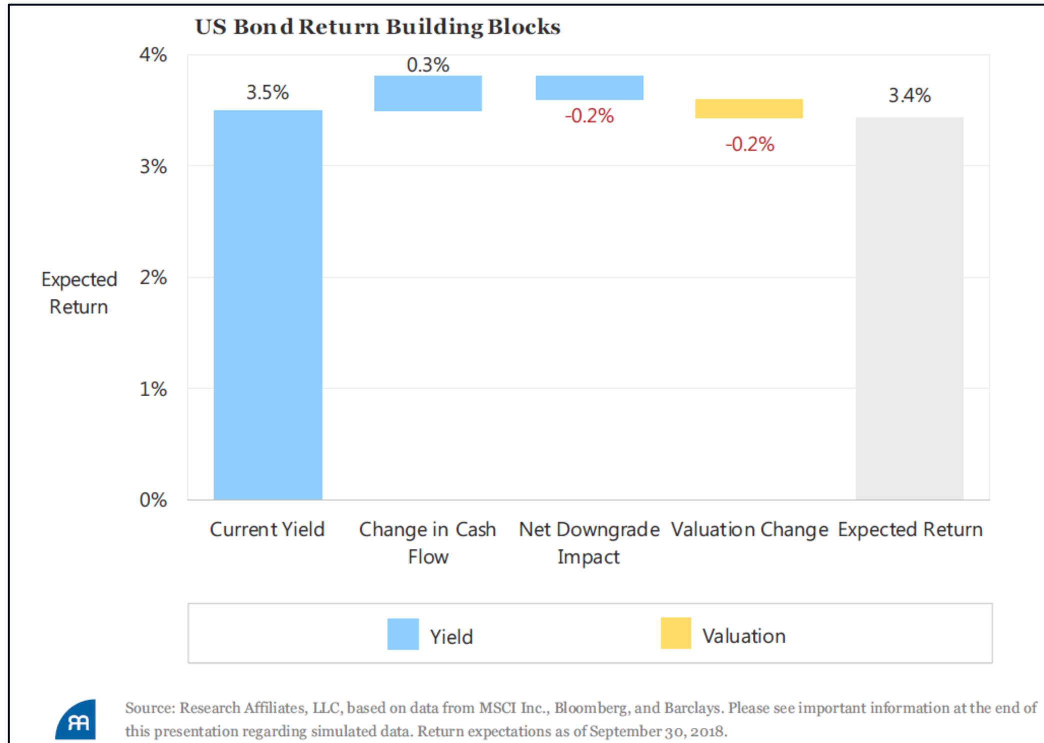
## Conclusions

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.

We have also learned that our liability, specifically our projected future cash outflows, are on an unsustainable path. Investments, alone, has a limited impact on changing this dynamic without taking dramatically more, imprudent risk. Our strategy and initiatives incrementally help minimize downside funding scenarios, but is no silver bullet and does little to cure past liability ills. Nonetheless, as a result of improved valuations and progress on our initiatives, there is a path to garnering a portfolio that has a better chance to meet the 10-year actuarial hurdle of 7.25%, despite the challenging environment ahead. It is not a guarantee, rather an improvement of our chances (greater than 50%) that we can meet our 10-year, 7.25% return objectives.

# APPENDIX

## Exhibit 1. Bond Building Blocks




## Exhibit 2. Stock Returns in Monetary Regime

### Tight Policy Is Hazardous To Stocks' Health, ...

ANNUALIZED S&P 500 PRICE RETURNS BY FED FUNDS RATE CYCLE PHASE FROM AUGUST 1961*

| | CAGR | # OF MONTHS |
|---|---|---|
| PHASE I (EASY, HIKING) | 7.8% | 225 |
| PHASE II (TIGHT, HIKING) | 0.8% | 125 |
| PHASE III (TIGHT, EASING) | 0.9% | 101 |
| PHASE IV (EASY, EASING) | 12.0% | 234 |
| EASY (PHASES I & IV) | 9.9% | 459 |
| TIGHT (PHASES II & III) | 0.9% | 226 |
| ALL PHASES | 6.8% | 685 |

* THROUGH AUGUST 29.

## Exhibit 3. Value of Risk Balance in PERA Portfolio