October 7, 2021

Public Fund Board Member Considerations and Economic Overview

Public Fund Board Member Considerations

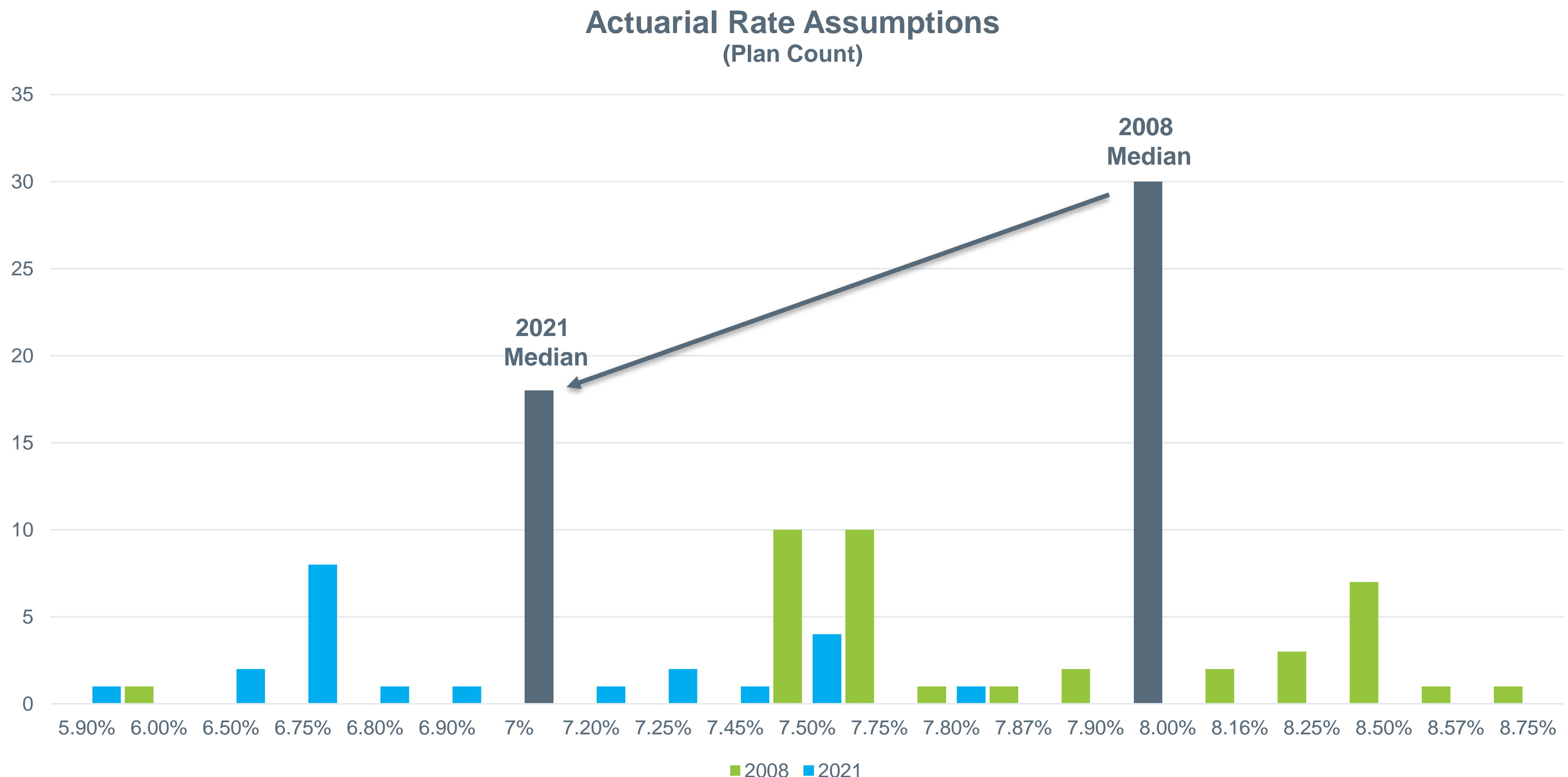
Long-Run Expected Return vs. Actuarial Assumed Rate of Return (ARoR)

- They are NOT the same!
- It is important for all fiduciaries to understand the difference between the **long-run expected return** (as provided by the asset allocation analysis), and the **actuarial assumed rate of return** (as provided by the Actuary's analysis).

Definitions	
Long-Run Expected Return	The expected return of the asset allocation based on current market conditions and the risk preferences of the plan. The primary purpose is to pursue returns at acceptable levels of risk. The forecast horizon is typically 10+ years and can, and indeed must change to reflect changes in the capital markets and investment environment.
Actuarial Assumed Rate of Return (ARoR)	The primary purpose of the ARoR is to set an appropriate and prudent level of future contributions to ensure benefits promised can be paid and the costs of doing so fall on the generation of citizens who benefited from the work done by plan participants. Thus, the typical forecast period is 30 to 50 years, spanning a full generation.

Assumed Rates of Return (ARoR) Have Fallen Over Time

- Over the last 13 years, actuarial assumption rates have fallen, albeit at a slower pace than asset class return assumptions.
- While there is notable dispersion among plans, the general trend has been downward, with median plans currently using an ARoR of 7%.



Source: RVK 2008 and 2021 Public Fund Survey

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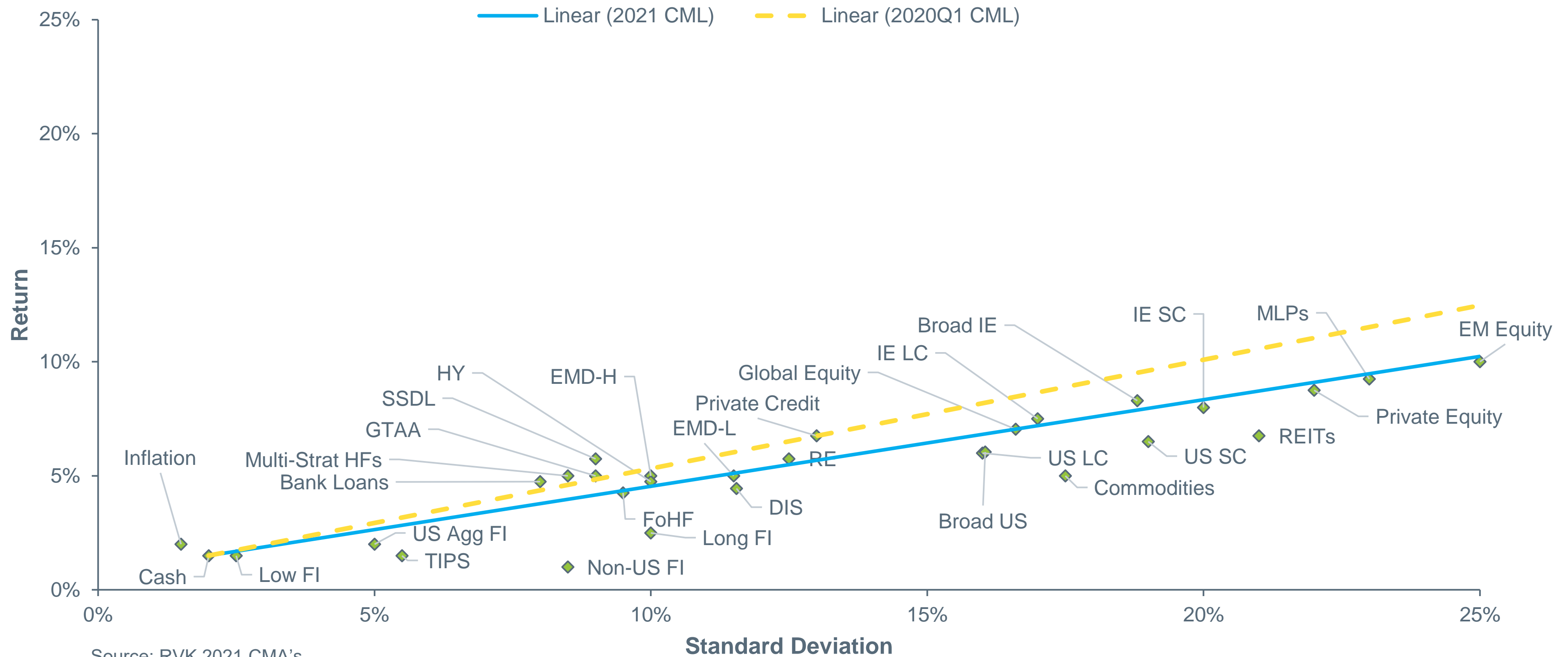
The Decline in Public Plan ARoR's Continues Unabated

- Plans continue to reduce respective ARoR's. Below are some notable examples since our most recent public fund survey:

Plan	Summary of ARoR Changes
Maryland State Retirement and Pensions System, Baltimore	Reduced its actuarial assumed rate of return to 6.8% from 7.4%. The $65.5 billion pension fund's board approved the change at its July 20 meeting. The new assumed rate of return is effective July 1, 2022.
Oregon Public Employees Retirement System	Preliminarily lowered its assumed rate of return to 6.9% from 7.2%. The pension fund board adopted the new assumed rate of return at its Oct. 1 meeting.
North Carolina Retirement Systems, Raleigh	Lowering the assumed rate of return to 6.5% from 7% for the principal pension fund.
Chicago Public School Teachers' Pension & Retirement Fund	Lowering its assumed rate of return to 6.75% from 7%.
Texas County & District Retirement System	Board of trustees approved lowering the long-term assumed rate of return for the $35.7 billion system to 7.5% from 8%.
Missouri Public School and Education Employee Retirement Systems, Jefferson City	Lowered its expected rate of return to 7.3% from 7.5% at its June 8th, 2021 board meeting. The new expected rate of return is effective July 1.
New York State Common Retirement Fund, Albany	Cut its assumed rate of return on investments to 5.9% from 6.8%.

Forward-Looking Expected Returns Are Falling As Well



Source: RVK 2021 CMA's.

- Return/risk forecasts continue to flatten:
  - Continues the trend of getting paid less for taking on incremental risk.
  - Late cycle indications with elevated equity valuations and a rising interest rate environment.
  - Higher level of volatility is normal; recent experience has been unusually low.
  - Inflation may be on the rise, but labor dynamics (e.g., slower wage growth) may prevent sharp increases.

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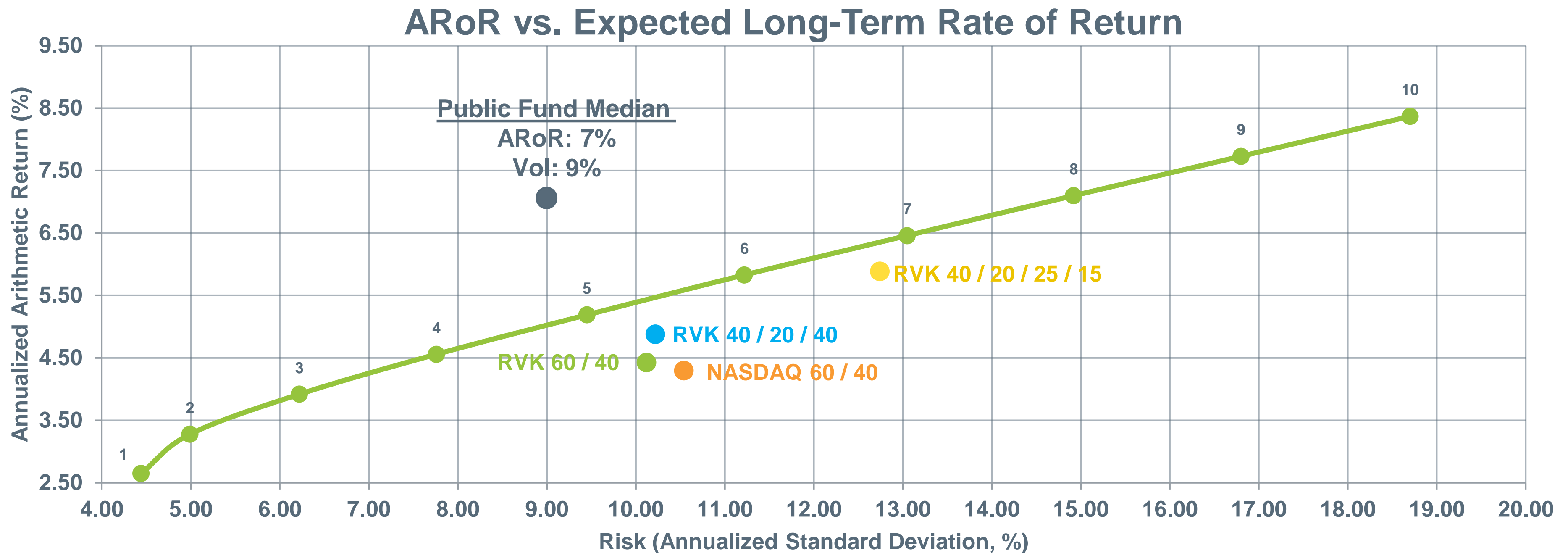
ARoR vs. Expected Long-Term Rate of Return



Alternative Portfolios

	60% US Equity 40% Fixed Income	40% US Equity 20% Int. Equity 40% Fixed Income	40% US Equity 20% Int. Equity 25% Fixed Income 15% Private Eq.
Expected Arithmetic Return	4.43%	4.88%	5.89%
Expected Risk (Standard Dev.)	10.12%	10.22%	12.74%
Expected Compound Return	**3.94%**	**4.39%**	**5.13%**

Source: RVK 2021 CMAs. US Equity = Broad US Equity, Int. Equity = Broad International Equity, Fixed Income = US Agg Fixed Income
Public Fund Median assumes median 10-year historical standard deviation from RVK's 2021 Public Fund Survey of 9%.

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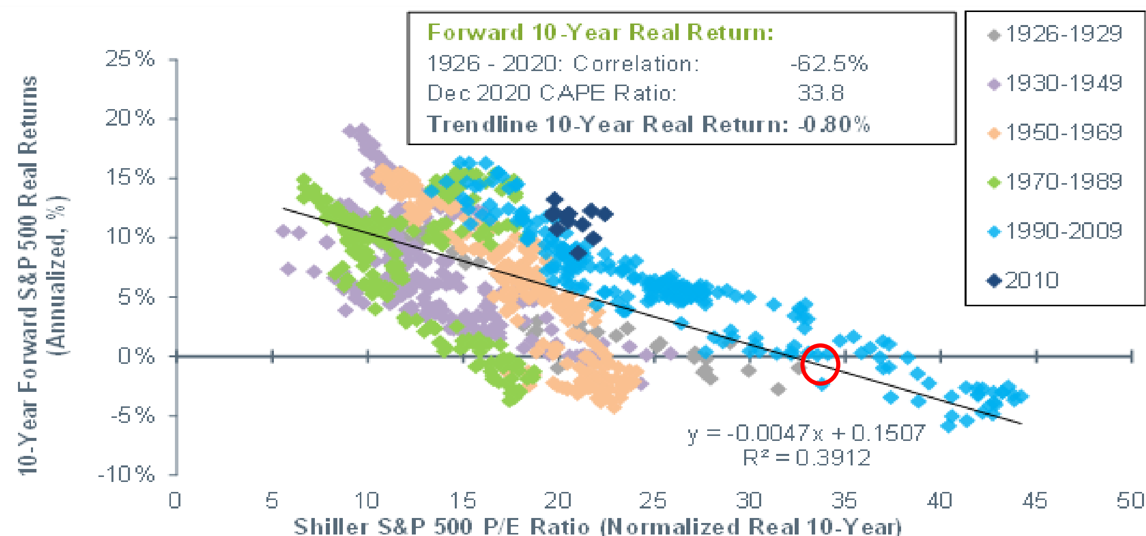
What is Driving Expected Returns Down?

- Shiller CAPE ratios are commonly used in the industry in the assumption setting process given its historically predictive power for future equity returns.
- Forward-looking equity assumptions have generally fallen given that equity returns are assumed to mean-revert over longer periods[1] .

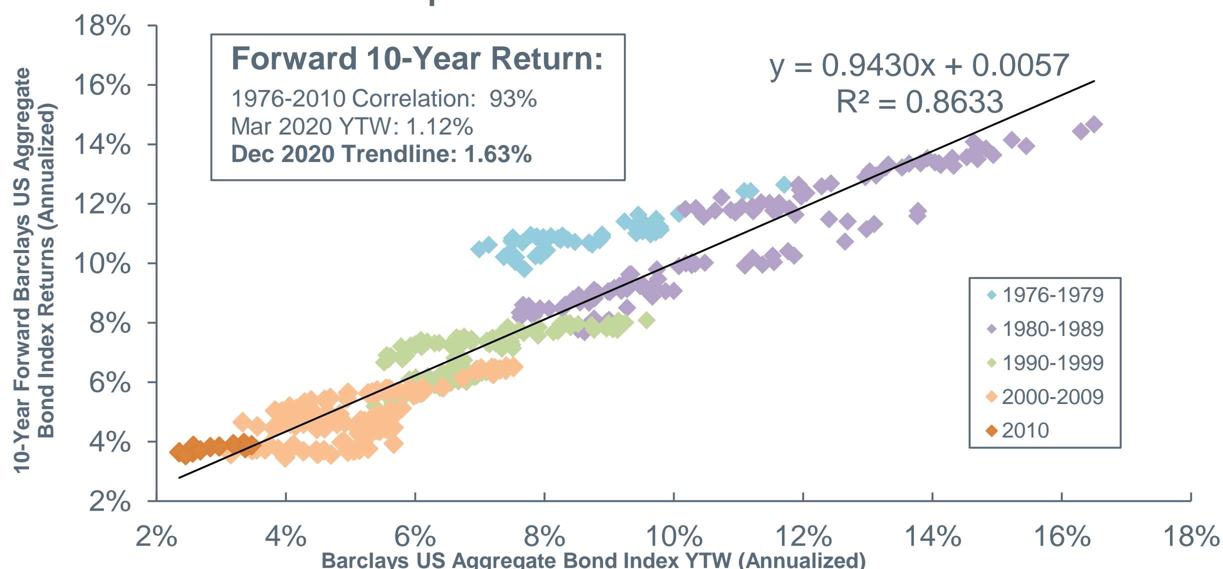
S&P 500 CAPE Ratio vs. 10-Year Forward S&P 500 Return



December 2020 CAPE ratio uses the S&P 500 earnings estimate for the fourth quarter of 2020.
Source: RVK, based on data from the Robert Shiller Database. (2021)

- The Yield to Worst (YTW) of a fixed income security is the anticipated return to an investor based on interest payments and other factors including call options.
- Therefore, initial period yields have historically been a reasonable starting point when forecasting future fixed income returns.
- Current low bond yields indicate low bond returns going forward.

Relationship between YTW and Forward 10 Year Returns



Source: FactSet. (2021)

[1] The Shiller CAPE ratio is negatively correlated with long-term equity returns. Yale professor Robert Shiller argued that one-year earnings are highly volatile, affected by short-run considerations, and likely mean-reverting over longer periods. Campbell, John Y., and Robert Shiller, 1998. *Valuation Ratios and the Long-Run Stock Market Outlook*. The Journal of Portfolio Management 24(2).

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What Should the Committees Keep in Mind Regarding Setting the ARoR?

Five Considerations

1. **The primary purpose of the ARoR is to set an appropriate and prudent level of future contributions.** This is as much a fiduciary decision as any specific investment decision you make.

2. **The ARoR must bear a rational connection, but not necessarily a precise arithmetic connection in any given year, to the current expected return of your asset allocation.** This is because the need to ensure a prudent level of future contributions is the primary objective, not the year to year matching of an ever shifting asset allocation and expected return. The expected return from your total fund and its asset allocation may vary substantially over the next ten years as conditions change in the capital markets. However, contributions that are not prudently set and executed today, but in retrospect were needed, will then need to be made in future years at a higher, compounded level.

3. **ARoRs are falling steadily across the entire public fund universe, however, we (RVK) do not recommend you do the same simply because others are doing so.** Keep in mind that this trend is the result of many Boards with many actuarial advisors confronting the same need to ensure a prudent level of contributions while facing the same general direction of market assumptions and expected returns.

4. **No one can precisely define for you what constitutes a prudent level of future contributions**, but we would counsel that what is prudent for a plan serving a public entity with a rapidly growing tax base, a demographically healthy plan population, and a very strong funding ratio may not be the same as for a plan where the state's/city's economy is stressed, the plan is unusually mature, the funding ratio is quite low and a large UAL is present.

5. **Re-read number 1!**

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Is the Gap Between the ARoR and Expected Long-Term Return Worrisome?

Our Response:

- Moderately so for a short period of time. Moderately, because expected rates of return can change quickly if conditions in the investment markets do.

- Increasingly so if it persists and the expected return forecasts begin to be realized. Increasingly so, because when actual returns fall short of the ARoR persistently, the contributions levels determined by the actuary are likely falling short of those needed to improve the funding ratio, suppress the growth of any unfunded actuarial liability and achieve intergeneration equity in the payment for services provided by public plan participants.

We do not envy the actuary's task of having to recommend a prudent level of contributions while considering changing longevity, changes in inflation (and often the COLA liabilities they drive), the pursuit of intergenerational equity, and, of course, constantly fluctuating actual and expected investment returns.

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Is Smoothing the Answer?

In a word, no!

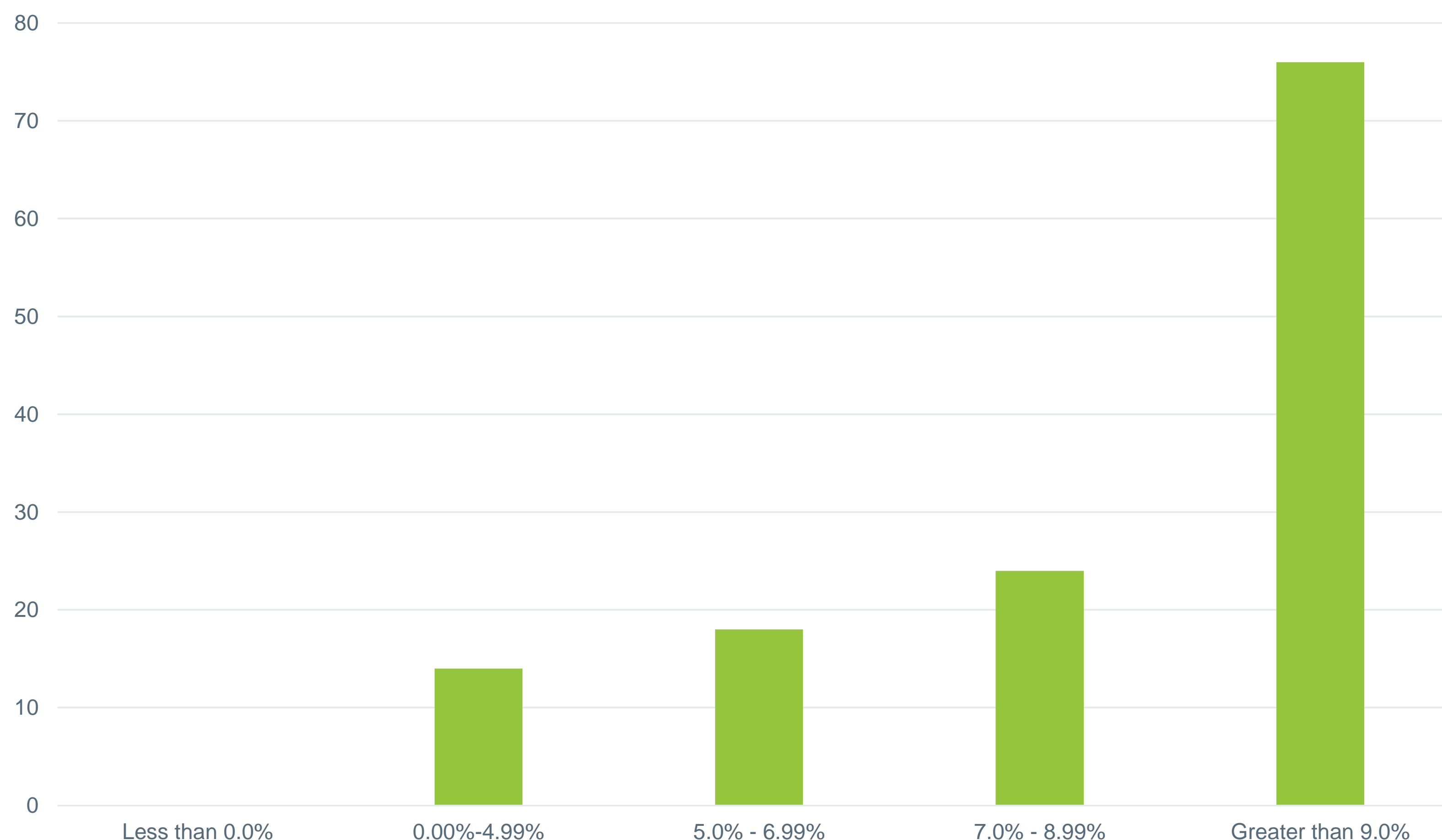
- Investment consultants – many of whom find their professional roots in the capital markets – tend to dismiss smoothing as an irrelevant aspect of long-term defined benefit plan financial outcomes. As a group, we tend to worship at the altar of "always mark to market".

- But we do recognize that in the real world, those entities – largely public employers and behind them taxpayers – benefit from contribution changes that are more gradual, allowing them time to adjust.

- But in our view, fiduciaries should **never** confuse smoothing of contribution changes with investment decision-making or long-term projections of the plan's financial health. Smoothing has one purpose only, and that is to make contributions changes take place more gradually.

Does the Big Picture Offer Some Optimism?

- While past results are not indicative of future performance, markets have over recent decades posted superior returns relative to current expected returns and to a lesser degree current ARoR's.



Source: eVestment. US Equity represented by the Russell 3000 Index; US Fixed Income represented by the Bloomberg US Aggregate Index.

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What Can Public Funds Do if the Projections, and the Gap Between Them, Turn Out to be Accurate?

There are no easy ways to address the gap, but there are steps that are prudent.

- Address the ARoR frequently with your actuary and, as appropriate, take incremental steps to close the gap. Incremental, because, as noted, expected returns can change quickly and substantially with changes in the capital markets.

- Conduct Asset/Liability studies more often than in eras where the ARoR and expected returns are closely aligned. This is a self serving recommendation from an investment consultant that does these studies, but we maintain that they are the Gold Standard for assessing the current and likely future health of the defined benefit plan.

- Be extremely wary of proposals to simply add ever more risk to the asset allocation so as to project higher expected returns in the face of falling CMA's. Market history is replete with examples where this has turned out badly.

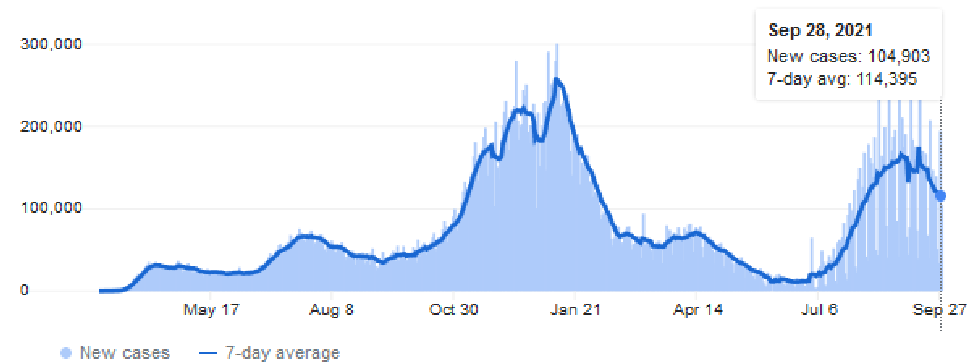
- Spend time and attention on understanding expected downside risk in your asset allocation. If a lower return future lies ahead over the next ten years, we will all need patience and mitigating downside risk may prove to be a return enhancing step.

Economic Overview

Economic Overview

- In general, markets continue to be dominated by updates surrounding the global public health crisis and subsequent economic recovery.
- US equity markets reached all-time highs in August, with all major US and international indices posting low to mid-digit returns.
- Although continued inflation concerns and the spread of the coronavirus Delta variant weighed on investor confidence, strong corporate earnings as well as improvements in labor conditions contributed to the positive results in equity markets during August.
  - As of August 27th, the blended earnings growth rate for the S&P 500 in the Q2 2021 was 95.9% (with 98% of companies having reported actual earnings). While the large increase is partially due to comparisons to the lows of last year, this is a better than expected result, which is a positive sign for businesses and markets.

United States Coronavirus Cases (All Time)



Source: The New York Times

Initial Jobless Claims (August 2020 – Present)

Source: U.S. Employment and Training Administration

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Economic Overview

- In contrast, September saw volatility due to concerns regarding disagreements between lawmakers over government funding and rising the debt ceiling, as well as lingering concerns over:
  - The Outlook for Inflation
  - Supply Chain Constraints
    - Shutdowns in Asia triggered shipping and production delays.
    - Created shortage in shipping containers.
    - Problem compounded by limited warehouse space, trucking issues, and labor shortages.
  - Trajectory of Coronavirus Infections

- With much uncertainty, history suggests that investors who exercise patience and fortitude will likely be rewarded in the long term.

- As always, we encourage investors to remain committed to their strategic asset allocation and continue to rebalance and refine as conditions and policies allow.

"It is imperative that Congress swiftly addresses the debt limit. If it does not, America would default for the first time in history. The full faith and credit of the United States would be impaired, and our country would likely face a financial crisis and economic recession."

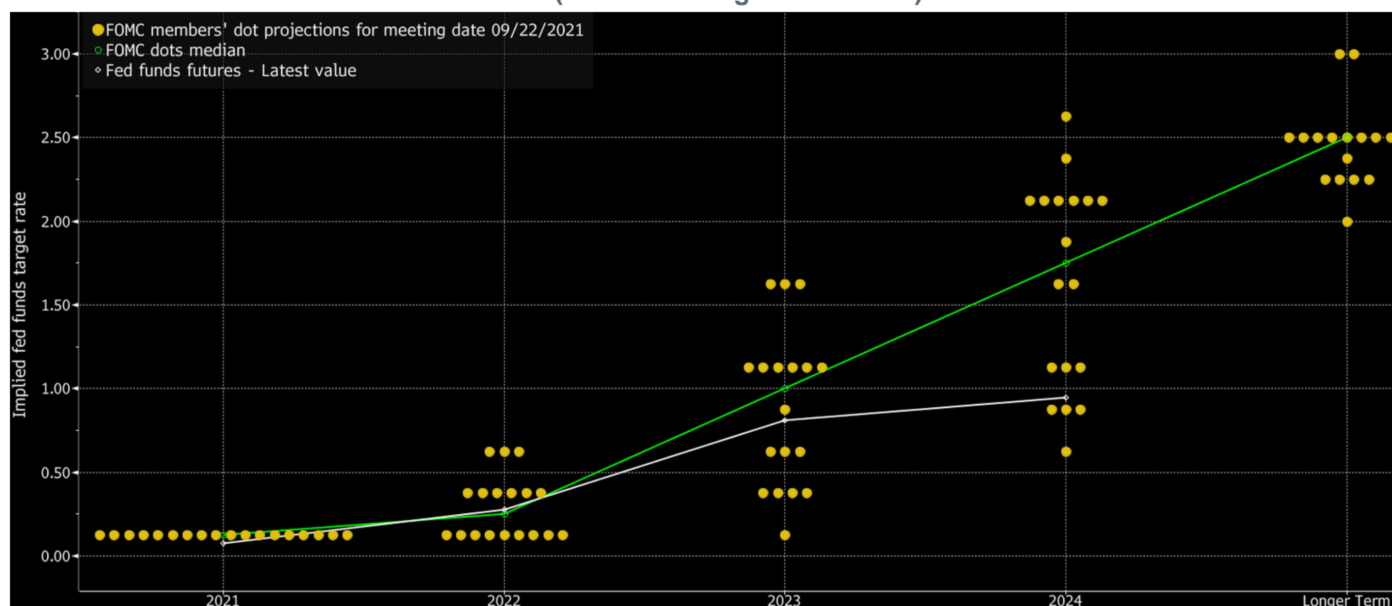
-Janet Yellen, Treasury Secretary and former Chair of the Federal Reserve (2014-2018) to the Senate Banking Committee on September 28, 2021

Source: CNBC

Outlook for Inflation

- Year-over-year inflation increased 5.3% in June 2021, the highest increase since 2008.
- In a meeting with the Senate Banking, Housing, and Urban Affairs Committee on September 28, 2021, Jerome Powell noted that arresting the spread of the Covid delta variant “remains the most important economic policy that we have.”
- Mr. Powell also stressed how the current inflation spike is “really a consequence of supply constraints meeting very strong demand, and that is all associated with the reopening of the economy, which is a process that will have a beginning, a middle, and an end.”
- Experts believe that data suggests that the elevated inflation is transitory and largely a result of post-pandemic business activity.
  - Should this not be the case, Mr. Powell said that the Fed is prepared to act.
    - The Fed may begin tapering monthly asset purchases by the end of the year.
    - Interest rate increases may begin as early as 2022, as suggested by the dot plot below.

Fed Dot Plot
(FOMC Meeting on 9/22/2021)



Source: Bloomberg

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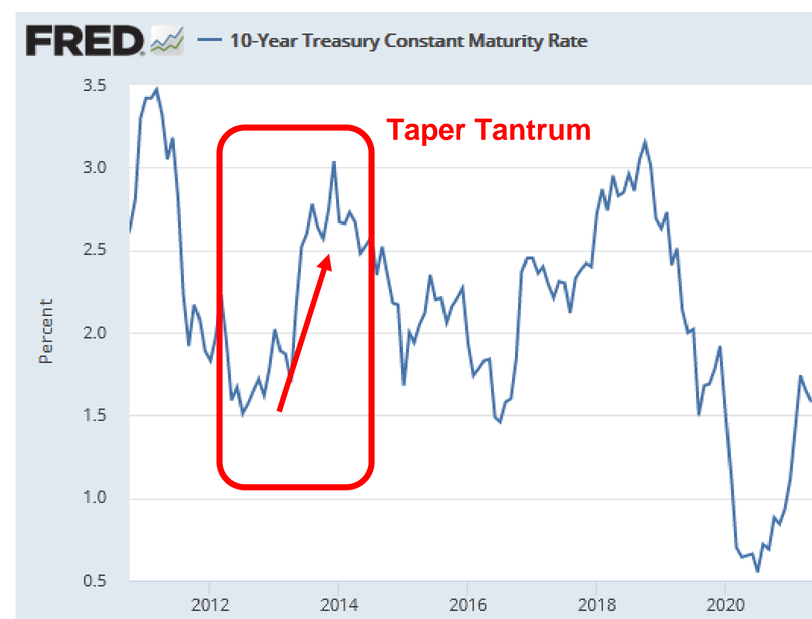
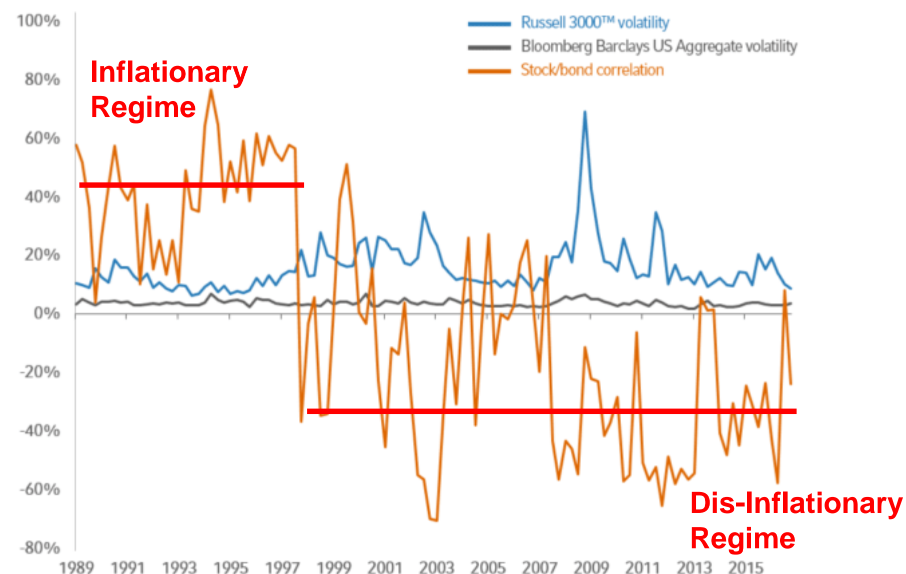
Inflation and Fixed Income

- ***As inflation expectations increase, interest rates typically increase***, offsetting decreases in bond coupon purchasing power.
- If inflation expectations become elevated, the Federal Reserve is expected to taper (reduce) its purchases of government bonds, and eventually increase short term interest rates which could lead to a ***"taper tantrum"*** market reaction.
- Bonds have been negatively correlated to equities for the past 30 years, but ***in an inflationary regime, bonds could be a less effective equity risk diversifier.***
- With rates near historical lows, there is also ***less yield for bonds to protect against macroeconomic shocks.***

	Tech Bubble & 9/11	GFC	COVID-19
YTM of Bbrg Agg at Peak	7.3%	5.7%	2.1%
60/40 Portfolio Total Return	-23.3%	-33.5%	-21.6%
60/40 Portfolio Downside Capture	49.6%	60.9%	63.5%



Equity/Bond Correlation



Source: Russell Investments

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