

San Jose Federated City Employees' Retirement System

February 20, 2024

Capital Markets Expectations

FCERS 3.21.24

Executive Summary

- 2023 was a volatile year for most investors, but ultimately most asset classes experienced positive returns, including double-digit gains for many risky assets.
- With the notable exception of China's markets, global bond and equity markets rallied at the end of the year, posting strong gains as inflation pressures eased and central banks appeared to be turning away from tightening policies.
 - Despite short-term interest rates climbing, the yield on most Treasury bonds finished the year near where they started it.
 - Credit spreads tightened, especially for lower quality credit such as high yield. The result is lower expected returns for many credit-oriented assets.
 - Most equity markets rallied in 2023, generally at a much faster pace than the gain in earnings. Hence many equity markets were trading at higher valuations at year-end, thus reducing their forward-looking returns.
- Our 10-year CMEs continue to be lower than our 20-year CMEs for the vast majority of asset classes, partly due to a higher assumed "risk-free" rate in the future.
- The net result is a meaningful decrease in return assumptions for most assets over the 10-year horizon, with much more mixed and modest changes at the 20-year horizon.

Setting Capital Market Expectations

- Capital markets expectations (CMEs) are the inputs needed to determine the long-term risk and returns expectations for a portfolio.
 - They serve as the starting point for determining asset allocation.
- Consultants (including Meketa) generally set them once a year.
 - Our results are published in January and based on data as of December 31 for public markets and September 30 for private markets.
 - Changes are driven by many factors, including interest rates, credit spreads, cap rates, and equity prices.
- Setting CMEs involves crafting long-term forecasts for:
 - Returns
 - Standard Deviation
 - Correlations (i.e., covariance)
- Our process relies on both quantitative and qualitative methodologies.

Building 10-year Forecasts

→ Our first step is to develop 10-year forecasts based on fundamental models.

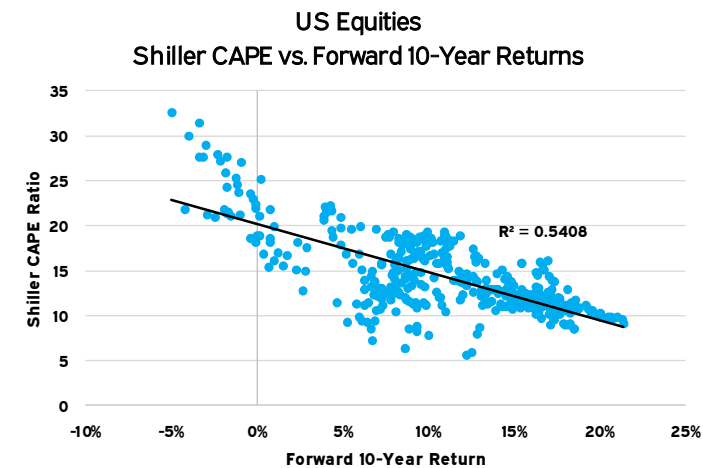
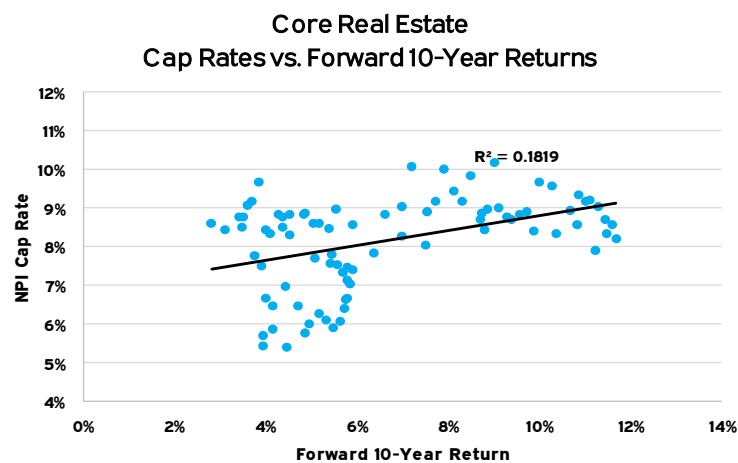
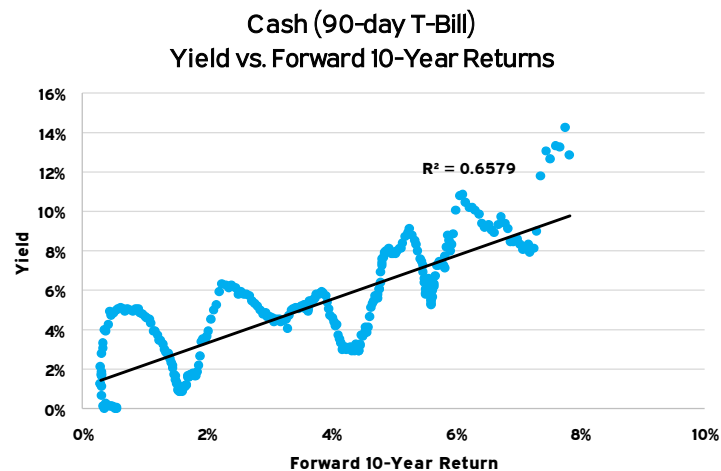
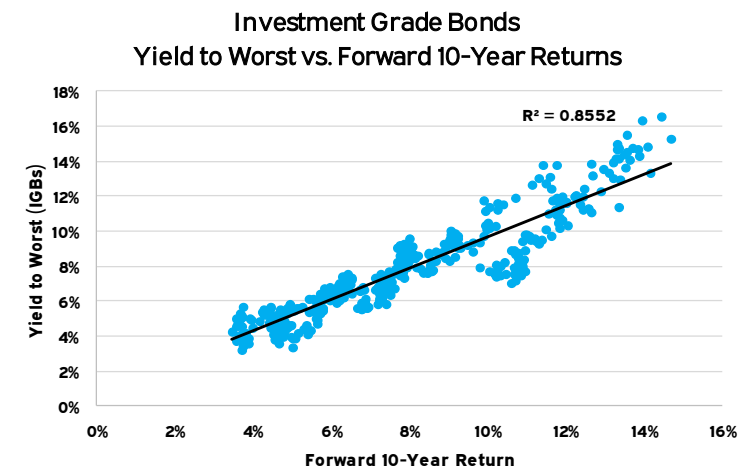
- Each model is based on the most important factors that drive returns for that asset class:

| Asset Class Category | Major Factors |
|-----------------------|---|
| Equities | Dividend Yield, GDP Growth, Valuation |
| Bonds | Yield to Worst, Default Rate, Recovery Rate |
| Commodities | Collateral Yield, Roll Yield, Inflation |
| Infrastructure | Public IS Valuation, Income, Growth, Leverage |
| Natural Resources | Price per Acre, Income, Public Market Valuation |
| Real Estate | Cap Rate, Yield, Growth, Leverage |
| Private Equity | EBITDA Multiple, Leverage, Public VC Valuation |
| Hedge Funds and Other | Leverage, Alternative Betas |

→ The common components are income, growth, and valuation.

- Leverage and currency impact are also key factors for many strategies.

Some factors are naturally more predictive than others



Sources: Bloomberg, FRED, NCREIF, S&P, Robert Shiller (Yale University), and Meketa Investment Group. As of December 31, 2019.

10-year Model Example: Bonds

→ The short version for investment grade bond models is:

$$E(R) = \text{Current YTW (yield to worst)}$$

→ Our models assume that there is a reversion to the mean for spreads (though not yields).

→ For TIPS, we add the real yield of the TIPS index to the breakeven inflation rate.

→ As with equities, we make currency adjustments when necessary for foreign bonds.

→ For bonds with credit risk, Meketa Investment Group estimates default rates and loss rates in order to project an expected return:

$$E(R) = \text{YTW} - (\text{Annual Default Rate} \times \text{Loss Rate})$$

10-year Model Example: Equities

→ We use a fundamental model for equities that combines income and capital appreciation.

$$E(R) = \text{Dividend Yield} + \text{Expected Earnings Growth} + \text{Multiple Effect} + \text{Currency Effect}$$

→ Meketa evaluates historical data to develop expectations for dividend yield, earnings growth, the multiple effect, and currency effect.

- Earnings growth is a function of real GDP growth, inflation, and exposure to foreign revenue sources.
- We assume that long-term earnings growth is linked to economic growth.
- However, many factors can cause differences between economic growth and EPS growth.

→ Our models assume that there is a reversion toward mean pricing over this time frame.

Moving from 10-Year to 20-Year Forecasts

- Our next step is to combine our 10-year forecasts with projections for years 11-20 for each asset class.
- We use a risk premia approach to forecast 10-year returns in ten years (i.e., years 11-20).
 - We start with an assumption (market informed, such as the 10-year forward rate) for what the risk-free rate will be in ten years.
 - We then add a risk premia for each asset class.
 - We use historical risk premia as a guide, but many asset classes will differ from this, especially if they have a shorter history.
 - We seek consistency with finance theory (i.e., riskier assets will have a higher risk premia assumption).
- Essentially, we assume mean-reversion over the first ten years (where appropriate), and consistency with CAPM thereafter.
- The final step is to make any qualitative adjustments.
 - The Investment Policy Committee reviews the output and may make adjustments.

The Other Inputs: Standard Deviation and Correlation

→ Standard deviation:

- We review the trailing twenty-year standard deviation, as well as skewness.
- Historical standard deviation serves as the base for our assumptions.
- If there is a negative skew, we increased the volatility assumption based on the size of the historical skewness.

| Asset Class | Historical Standard Deviation (%) | Skewness | Assumption ¹ (%) |
|-----------------|-----------------------------------|----------|-----------------------------|
| Bank Loans | 6.5 | -2.9 | 10.0 |
| FI / L-S Credit | 5.8 | -2.7 | 9.0 |

- We also adjust for private market asset classes with “smoothed” return streams.

→ Correlation:

- We use trailing twenty-year correlations as our guide.
- Again, we make adjustments for “smoothed” return streams.

→ Most of our adjustments are conservative in nature (i.e., they increase the standard deviation and correlation).

¹ Note that we round our standard deviation assumptions to whole numbers.

What is driving the changes from last year?

- Credit spreads tightened, leading to lower yields, thus decreasing expected returns for fixed income assets.
- Most equity markets rallied, pushing them to higher valuations, thus reducing their forward-looking returns.
- Lower anticipated borrowing costs had a positive impact on assets that use leverage.
- Lower anticipated cash yields hurt expected returns for hedge funds and related asset classes.
- The long downward trend in cap rates for real estate reversed, pushing up their expected returns.
- Higher anticipated long-term interest rates also provide a tailwind in our 20-year projections, as the bridge from 10 to 20 years is made via a risk premium being added to a (higher) future risk-free rate.
 - The risk-free rate jumped from 4.17% to 4.64%.
- The changes we made to several models also had an impact:
 - We reweighted our private market composites to reflect a blend of the market opportunity and a typical client portfolio.
 - We reduced the cap for the magnitude of currency impact from +/- 100 bp to +/- 50 bp per annum.
 - We increased the % of GDP growth that translates to EPS growth for the US, while decreasing it for most other equity markets.
 - We extended our look-back period from 15 years to 20 years for historical volatility (and correlations).

Similar or Lower Yields

- Short-term interest rates are higher than one year ago, while the 10-year Treasury yield ended the year where it started it.
- Similar levels of interest rates combined with tighter credit spreads to result in slightly lower yields for most sectors of the global bond market.

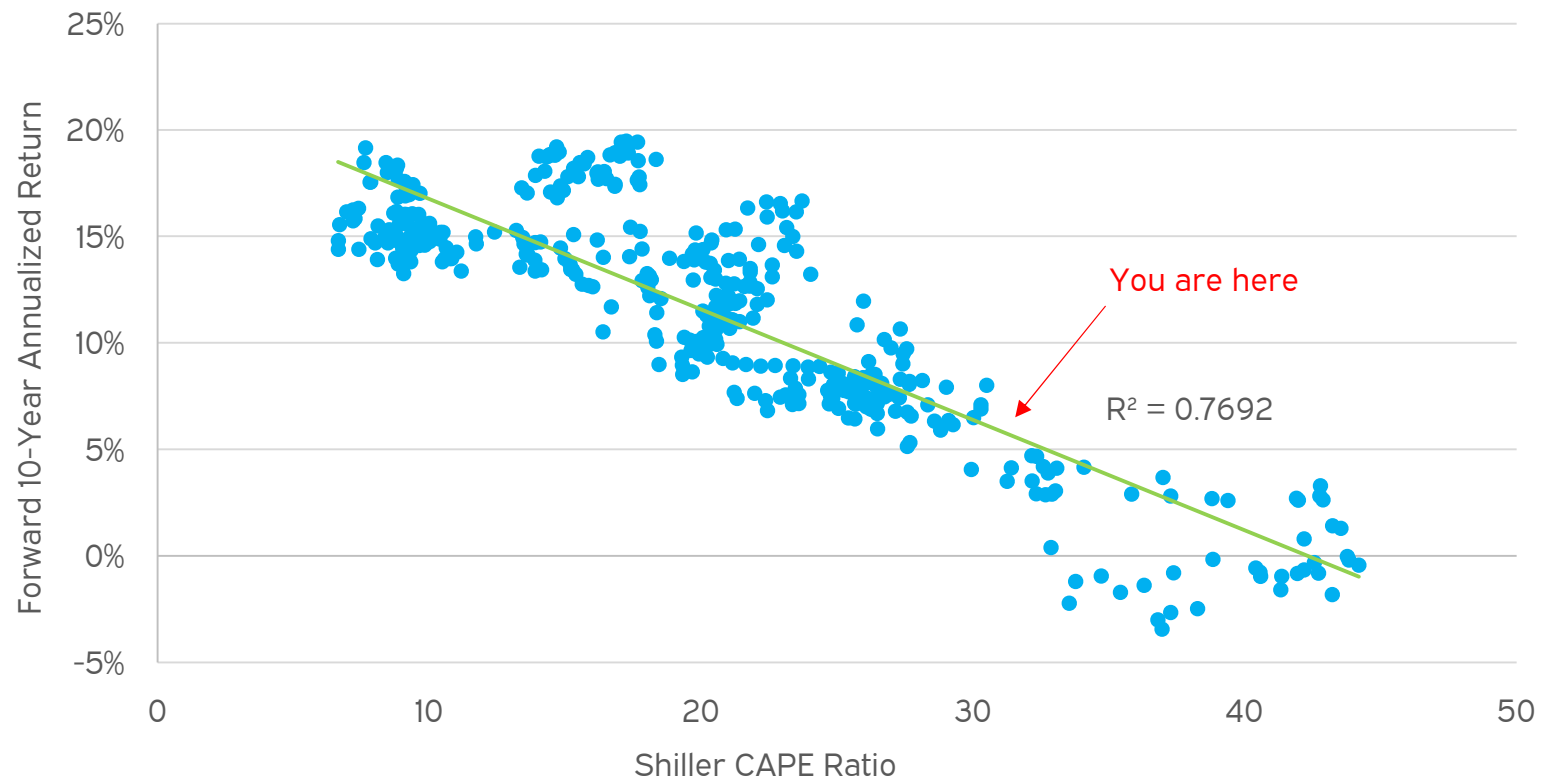
| Index | Yield to Worst 12/31/23 (%) | Yield to Worst 12/31/22 (%) |
|--|-----------------------------------|-----------------------------------|
| Fed Funds Rate | 5.25-5.50 | 4.25-4.50 |
| 10-year Treasury | 3.88 | 3.88 |
| Bloomberg Aggregate | 4.53 | 4.68 |
| Bloomberg Corporate | 5.06 | 5.42 |
| Bloomberg Securitized | 4.72 | 4.75 |
| Bloomberg Global Aggregate | 3.51 | 3.73 |
| Bloomberg EM Local Currency Government | 4.08 | 4.42 |
| Bloomberg EM Hard Currency Aggregate | 6.77 | 7.26 |
| Bloomberg US Corporate High Yield | 7.59 | 8.96 |

Source: Bloomberg. Data is as of December 31, 2023 and December 31, 2022.

Impact of Equity Prices on Returns

- Relative prices have been indicative of future equity returns.
- Higher prices have led to lower future returns, and vice versa.

US Equities: Shiller CAPE vs. Forward 10-Year Returns



Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is based on monthly returns and Cyclically Adjusted P/E ratio on S&P 500 Index for the period from January 1980 through December 2023.

20-year Geometric Expected Returns Rate Sensitive

| | 2024 E(R) (%) | 2023 E(R) (%) | Δ From 2023 (%) | Notes |
|-----------------------------------|------------------|------------------|--------------------|---|
| Cash Equivalents | 2.5 | 2.9 | -0.4 | Lower projected short-term rates |
| Short-term Investment Grade Bonds | 3.7 | 3.5 | 0.2 | |
| Investment Grade (Core) Bonds | 4.8 | 4.7 | 0.1 | |
| Intermediate Government Bonds | 4.1 | 3.7 | 0.4 | Slightly higher yields |
| Long-term Government Bonds | 5.0 | 5.0 | 0.0 | |
| Mortgage Backed Securities | 4.9 | 4.6 | 0.3 | |
| Investment Grade Corporate Bonds | 5.4 | 5.4 | 0.0 | |
| Long-term Corporate Bonds | 6.0 | 5.7 | 0.3 | |
| Short-term TIPS | 3.7 | 3.6 | 0.1 | |
| TIPS | 4.7 | 4.5 | 0.2 | |
| Long-term TIPS | 5.2 | 5.2 | 0.0 | |
| Global ILBs | 4.7 | 4.7 | 0.0 | |
| Foreign Bonds | 3.9 | 4.0 | -0.1 | Slightly lower yields |
| <i>US Inflation</i> | <i>2.8</i> | <i>2.6</i> | <i>0.2</i> | Higher long-term inflation expectations |

20-year Geometric Expected Returns Credit

| | 2024 E(R) (%) | 2023 E(R) (%) | Δ From 2023 (%) | Notes |
|--|------------------|------------------|--------------------|---------------------------------|
| High Yield Bonds | 6.8 | 7.3 | -0.5 | Tighter spreads |
| Higher Quality High Yield | 6.4 | 6.7 | -0.3 | Tighter spreads |
| Bank Loans | 6.6 | 7.0 | -0.4 | Tighter spreads |
| Collateralized Loan Obligations (CLOs) | 7.2 | 7.2 | 0.0 | |
| Convertible Bonds | 6.2 | 6.4 | -0.2 | Tighter spreads |
| Emerging Market Bonds (major) | 6.8 | 6.4 | 0.4 | Higher yields |
| Emerging Market Bonds (local) | 6.2 | 6.0 | 0.2 | |
| Private Debt | 9.2 | 9.0 | 0.2 | |
| Direct Lending | 8.4 | 8.3 | 0.1 | Lower assumed leverage |
| Asset Based Lending | 9.4 | 9.0 | 0.4 | Lower average fees |
| Special Situations Lending | 9.9 | 10.2 | -0.3 | Less extreme distressed pricing |

20-year Geometric Expected Returns Equities

| | 2024 E(R) (%) | 2023 E(R) (%) | Δ From 2023 (%) | Notes |
|--------------------------------|------------------|------------------|--------------------|---|
| US Equity | 8.5 | 8.7 | -0.2 | Higher valuations |
| US Small Cap | 9.4 | 9.3 | 0.1 | |
| Developed Non-US (EAFE) Equity | 8.9 | 9.8 | -0.9 | Higher valuations, lower projected earnings growth |
| Dev. Non-US Small Cap | 9.5 | 10.1 | -0.6 | Higher valuations |
| Emerging Market Equity | 8.9 | 10.0 | -1.1 | Higher valuations, lower projected earnings growth |
| Emerging Market Small Cap | 8.9 | 10.0 | -1.1 | Higher valuations, lower dividend yields |
| Emerging Market ex-China | 9.0 | 10.3 | -1.3 | Higher valuations, lower projected earnings growth |
| China Equity | 8.6 | 9.3 | -0.7 | Lower projected earnings growth |
| Frontier Market Equity | 10.0 | 10.7 | -0.7 | Higher valuations, lower projected growth & dividends |
| Global Equity | 8.7 | 9.2 | -0.5 | Higher valuations |
| Low Volatility Equity | 7.8 | 8.3 | -0.5 | Higher valuations |
| Private Equity | 11.2 | 11.0 | 0.2 | Mixed valuations and slightly lower borrowing costs |
| Buyouts | 10.8 | 10.7 | 0.1 | Mixed valuations and slightly lower borrowing costs |
| Growth Equity | 11.5 | 11.2 | 0.3 | Mixed valuations and slightly lower borrowing costs |
| Venture Capital | 12.0 | 11.6 | 0.4 | Lower valuations |

20-year Geometric Expected Returns Real Estate & Infrastructure

| | 2024 E(R) (%) | 2023 E(R) (%) | Δ From 2023 (%) | Notes |
|-----------------------------------|------------------|------------------|--------------------|--------------------------------------|
| Real Estate | 8.0 | 7.8 | 0.2 | Higher cap rates |
| US REITs | 7.8 | 8.0 | -0.2 | Lower yields |
| Core Private Real Estate | 6.9 | 6.5 | 0.4 | Higher cap rates |
| Value-Added Real Estate | 9.0 | 8.3 | 0.7 | Higher cap rates |
| Opportunistic Real Estate | 10.3 | 9.6 | 0.7 | Higher cap rates |
| Infrastructure | 9.0 | 8.3 | 0.7 | Lower borrowing costs, model changes |
| Infrastructure (Public) | 9.1 | 8.8 | 0.3 | |
| Infrastructure (Core Private) | 8.0 | 7.8 | 0.2 | |
| Infrastructure (Non-Core Private) | 10.0 | 9.5 | 0.5 | Lower borrowing costs |

20-year Geometric Expected Returns Natural Resources & Commodities

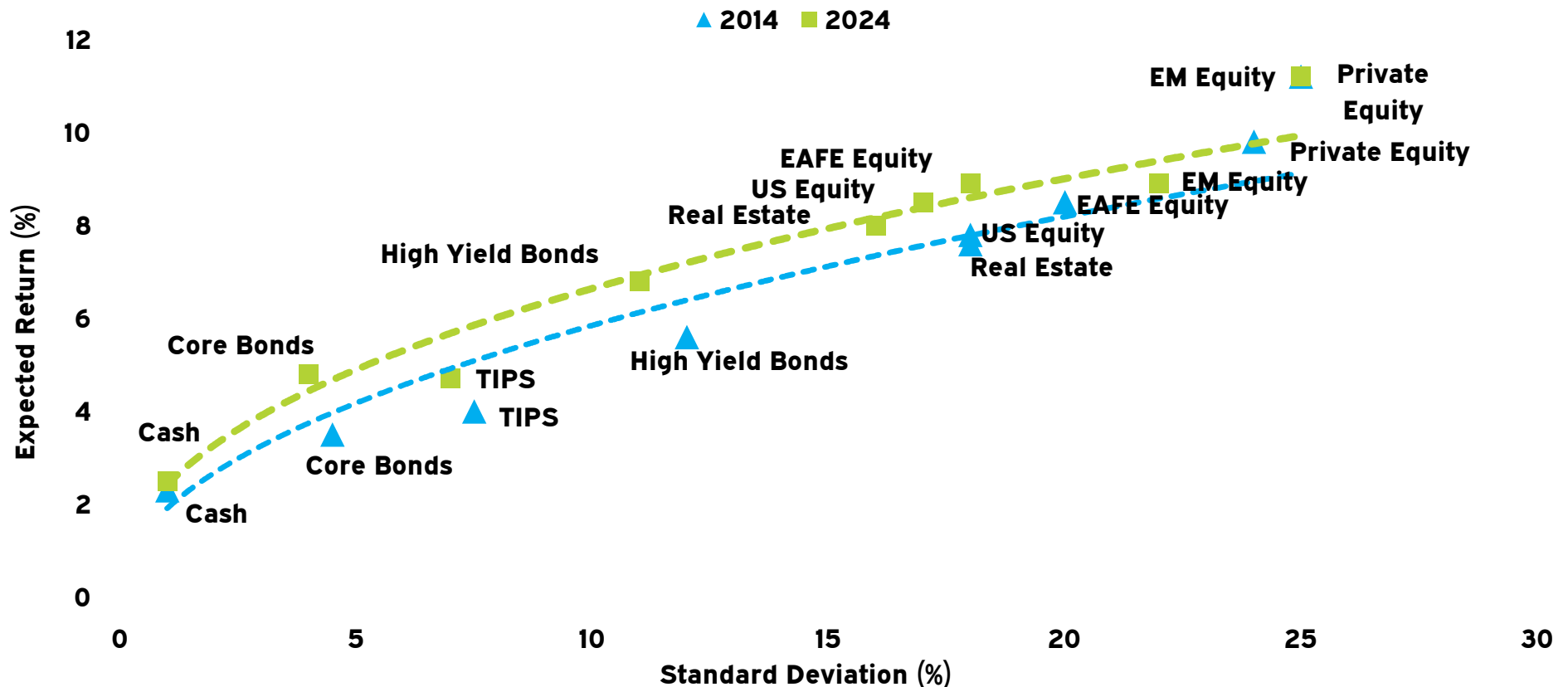
| | 2024 E(R) (%) | 2023 E(R) (%) | Δ From 2023 (%) | Notes |
|-----------------------------|------------------|------------------|--------------------|--|
| Natural Resources | 9.3 | NA | | 90% private, 10% public |
| Natural Resources (Public) | 9.2 | 8.7 | 0.5 | Improved relative valuations |
| Natural Resources (Private) | 9.3 | 9.8 | -0.5 | Higher valuations |
| Energy | 10.4 | 10.4 | 0.0 | |
| Mining | 9.9 | 10.2 | -0.3 | Higher valuations |
| Timberland | 7.3 | 7.4 | -0.1 | |
| Farmland | 7.0 | 6.5 | 0.5 | Improved valuations, higher income expectations |
| Sustainability | 10.0 | 10.3 | -0.3 | Higher valuations |
| MLPs | 8.4 | 7.4 | 1.0 | Improved relative valuations |
| Gold Mining | 9.5 | 9.7 | -0.2 | Higher valuations |
| Gold (Metal) | 3.5 | 3.3 | 0.2 | Slightly higher long-term inflation expectations |
| Commodities | 5.3 | 5.7 | -0.4 | Lower cash yield |

20-year Geometric Expected Returns Alternative Strategies (Other)

| | 2024 E(R) (%) | 2023 E(R) (%) | Δ From 2023 (%) | Notes |
|-----------------------------|------------------|------------------|--------------------|--|
| Hedge Funds | 5.8 | 6.1 | -0.3 | Lower cash/credit yield, higher equity valuations |
| Long-Short | 5.3 | 5.6 | -0.3 | Higher valuations, lower projected cash yield |
| Event Driven | 7.6 | 7.7 | -0.1 | Higher valuations, lower projected cash yield |
| Global Macro | 5.4 | 5.7 | -0.3 | Higher valuations, lower cash yield, tighter spreads |
| CTA – Trend Following | 4.7 | 4.8 | -0.1 | |
| Fixed Income/L-S Credit | 6.1 | 6.5 | -0.4 | Tighter spreads |
| Relative Value/Arbitrage | 6.5 | 6.7 | -0.2 | Lower projected cash yield |
| Long Vol | 1.2 | 1.1 | 0.1 | |
| Insurance Linked Strategies | 6.2 | 6.2 | 0.0 | |
| Alternative Risk Premia | 5.2 | 5.6 | -0.4 | Lower projected cash yield |
| Risk Parity (10% vol) | 7.2 | 7.7 | -0.5 | Higher equity valuations, tighter credit spreads |
| TAA | 6.1 | 5.7 | 0.4 | Model changes |
| Digital Currencies | 3.5 | 3.3 | 0.2 | |

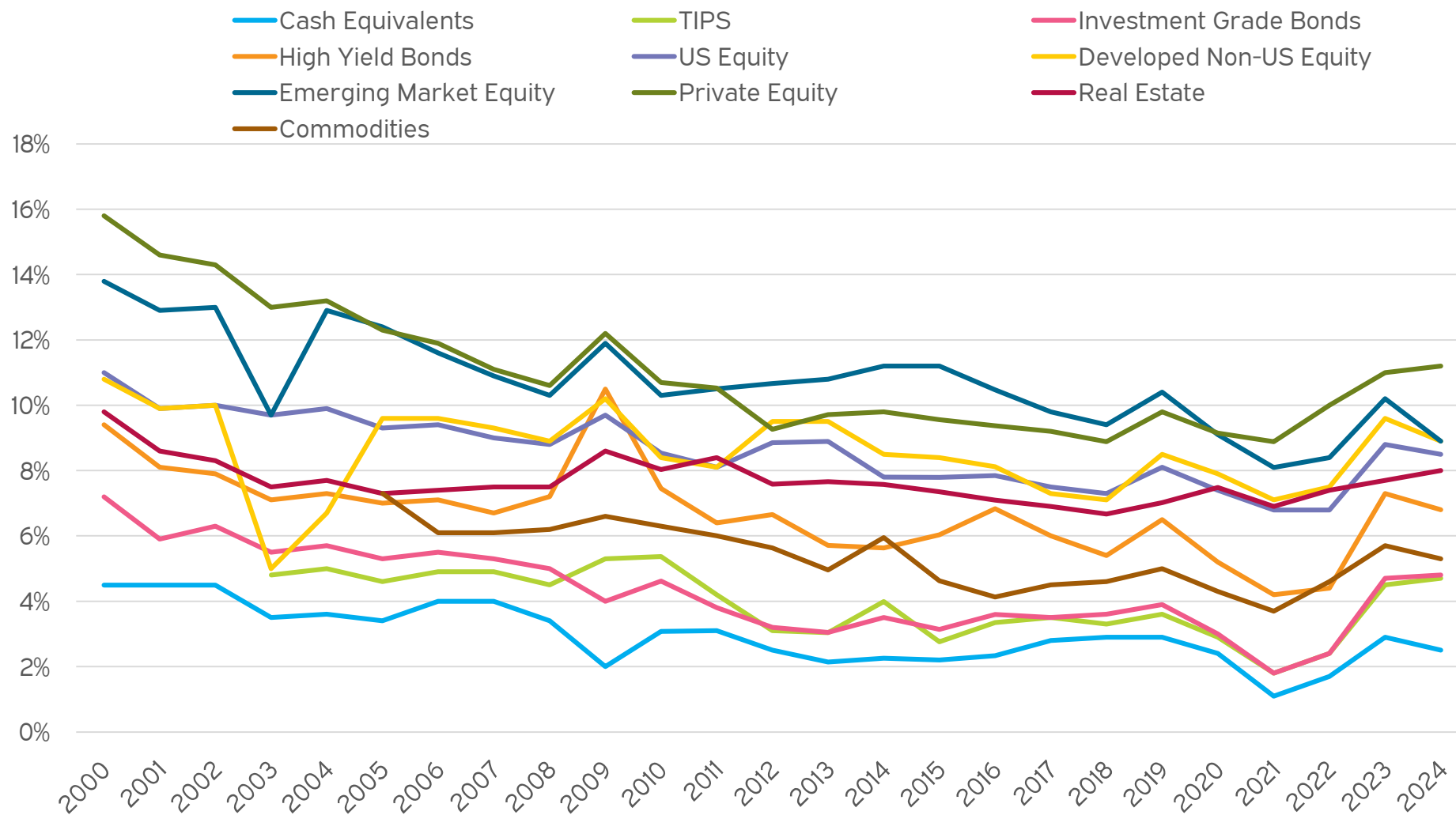
The Big Picture: Higher Return for Similar Risk¹

- The relationship between long-term return expectations and the level of risk accepted is not static.
- The higher interest rates of the last two years mean that many investors should be able to take on less risk than they have over the past decade if they want to achieve their target returns.



¹ Expected return and standard deviation are based upon Meketa Investment Group's 2014 and 2024 20-year capital market expectations.

Our 20-year CMEs since 2000



Return and Risk Data

| Asset Class | 10-year Expected Return (%) | 20-year Expected Return (%) | Standard Deviation (%) | 11-20 year Risk Premia ¹ (%) |
|------------------------------|--------------------------------------|--------------------------------------|------------------------------|---|
| Cash Equivalents | 2.4 | 2.5 | 1.0 | -2.0 |
| Investment Grade Bonds | 4.6 | 4.8 | 4.0 | 0.4 |
| Long-term Government Bonds | 4.3 | 5.0 | 12.0 | 1.0 |
| TIPS | 4.3 | 4.7 | 7.0 | 0.4 |
| High Yield Bonds | 6.5 | 6.8 | 11.0 | 2.5 |
| Bank Loans | 6.5 | 6.6 | 10.0 | 2.0 |
| Emerging Market Debt (local) | 6.3 | 6.2 | 12.0 | 1.5 |
| Private Debt | 9.2 | 9.2 | 15.0 | 4.6 |
| US Equity | 6.9 | 8.5 | 17.0 | 5.5 |
| Developed Non-US Equity | 7.7 | 8.9 | 18.0 | 5.4 |
| Emerging Non-US Equity | 7.6 | 8.9 | 22.0 | 5.5 |
| Global Equity | 7.2 | 8.7 | 17.0 | 5.5 |
| Private Equity | 9.9 | 11.2 | 25.0 | 7.8 |
| Real Estate | 6.3 | 8.0 | 16.0 | 5.3 |
| Infrastructure | 7.4 | 9.0 | 18.0 | 6.1 |
| Commodities | 4.9 | 5.3 | 17.0 | 1.0 |
| Hedge Funds | 4.5 | 5.8 | 7.0 | 2.5 |
| Inflation | 2.4 | 2.8 | | -1.5 |

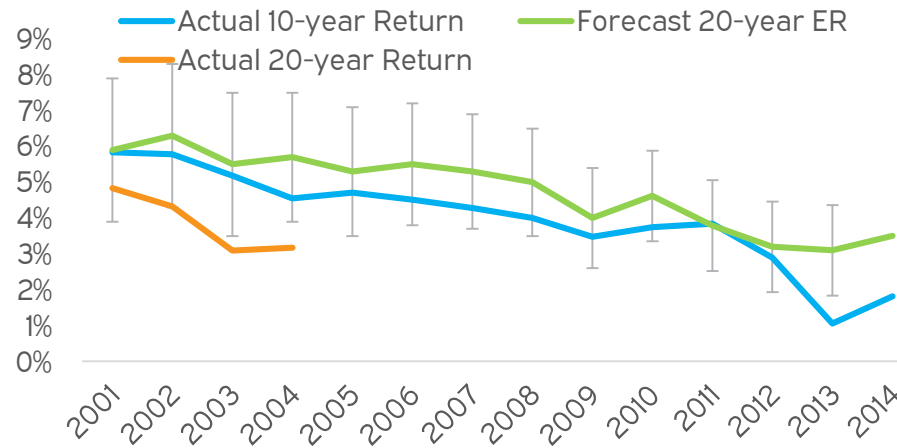
¹ Risk Premia are calculated relative to the market's projection for the yield on the 10-year Treasury in ten years..

Correlation Data

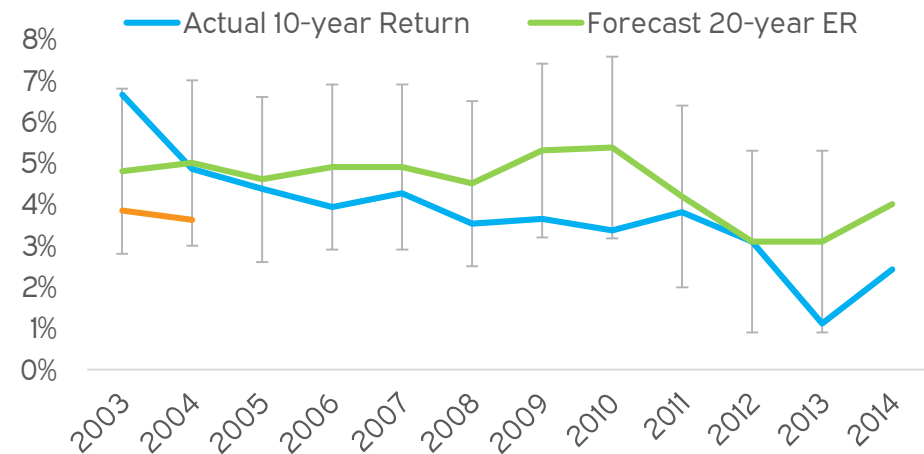
| | Inv. Grade Bonds | Long- term Gov't Bonds | TIPS | High Yield Bonds | US Equity | Dev. Non-US Equity | Em. Market Equity | Private Equity | Real Estate | Commod. | Infra. | Hedge Funds |
|----------------------------|------------------------|---------------------------------|------|------------------------|--------------|--------------------------|-------------------------|-------------------|----------------|---------|--------|----------------|
| Investment Grade Bonds | 1.00 | | | | | | | | | | | |
| Long-term Government Bonds | 0.86 | 1.00 | | | | | | | | | | |
| TIPS | 0.77 | 0.61 | 1.00 | | | | | | | | | |
| High Yield Bonds | 0.35 | -0.04 | 0.46 | 1.00 | | | | | | | | |
| US Equity | 0.22 | -0.10 | 0.30 | 0.76 | 1.00 | | | | | | | |
| Developed Non-US Equity | 0.26 | -0.09 | 0.33 | 0.76 | 0.88 | 1.00 | | | | | | |
| Emerging Market Equity | 0.27 | -0.05 | 0.36 | 0.72 | 0.74 | 0.86 | 1.00 | | | | | |
| Private Equity | 0.00 | -0.10 | 0.03 | 0.66 | 0.90 | 0.83 | 0.79 | 1.00 | | | | |
| Real Estate | 0.26 | 0.06 | 0.17 | 0.56 | 0.53 | 0.49 | 0.43 | 0.49 | 1.00 | | | |
| Commodities | 0.00 | -0.23 | 0.28 | 0.47 | 0.46 | 0.55 | 0.58 | 0.23 | 0.15 | 1.00 | | |
| Infrastructure | 0.31 | 0.14 | 0.32 | 0.65 | 0.64 | 0.68 | 0.60 | 0.51 | 0.61 | 0.41 | 1.00 | |
| Hedge Funds | 0.12 | -0.20 | 0.30 | 0.78 | 0.80 | 0.83 | 0.81 | 0.53 | 0.47 | 0.64 | 0.61 | 1.00 |

Our Track Record

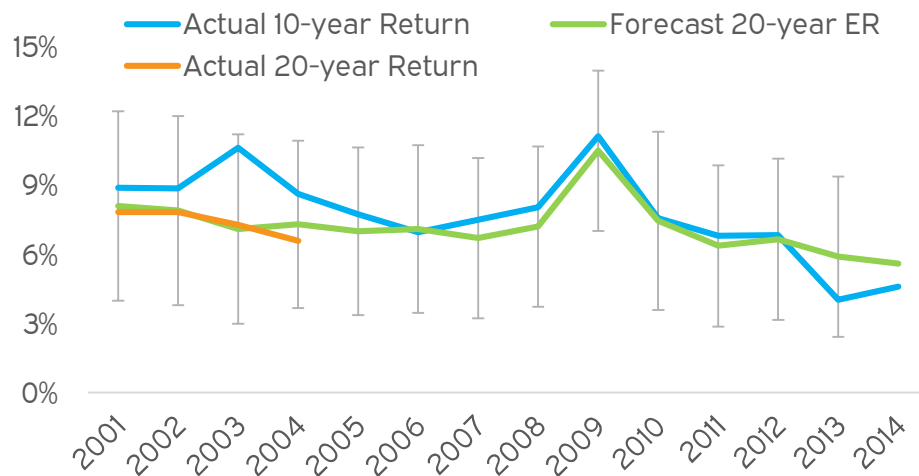
Investment Grade Bonds



TIPS



High Yield Bonds

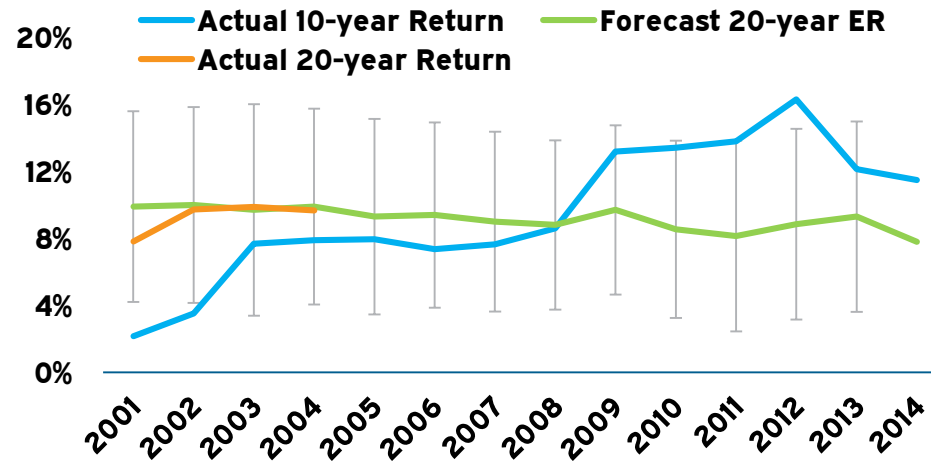


Core Real Estate

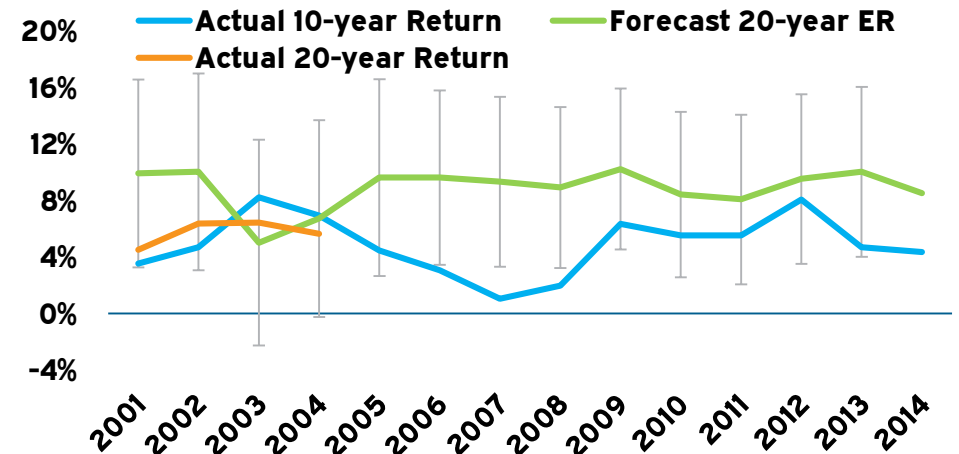


Our Track Record (continued)

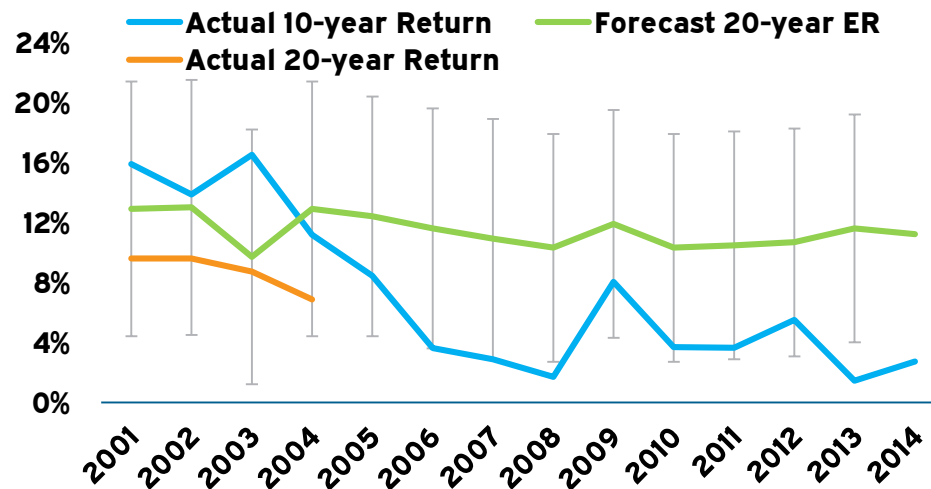
US Equity



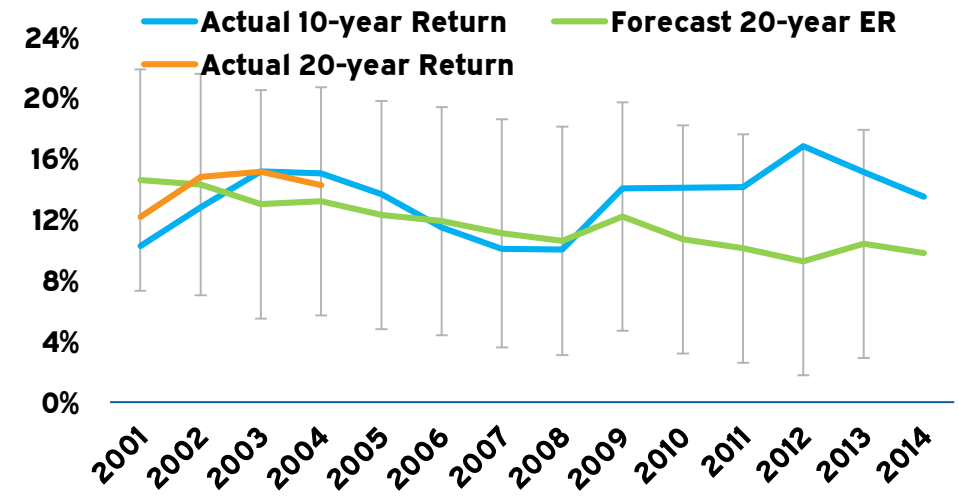
EAFE Equity



Emerging Markets Equity



Private Equity



2023 Peer Survey

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.¹
- The Horizon survey is a useful tool to determine whether a consultant's expectations for returns (and risk) are reasonable.

| Asset Class | Horizon 10-Year Average (%) | Meketa 10-Year (%) | Horizon 20-Year Average (%) | Meketa 20-Year (%) |
|-------------------------|-----------------------------------|-----------------------|-----------------------------------|-----------------------|
| Cash Equivalents | 3.4 | 3.1 | 3.2 | 2.9 |
| TIPS | 4.1 | 4.3 | 4.1 | 4.5 |
| US Core Bonds | 4.7 | 4.8 | 4.8 | 4.7 |
| US High Yield Bonds | 6.4 | 8.0 | 6.5 | 7.3 |
| Emerging Market Debt | 6.3 | 6.5 | 6.4 | 6.2 |
| Private Debt | 8.2 | 9.4 | 8.2 | 9.0 |
| US Equity (large cap) | 6.9 | 7.8 | 7.4 | 8.7 |
| Developed Non-US Equity | 7.5 | 10.1 | 7.8 | 9.8 |
| Emerging Non-US Equity | 8.2 | 10.3 | 8.6 | 10.0 |
| Private Equity | 9.5 | 9.7 | 10.1 | 11.0 |
| Real Estate | 6.0 | 5.9 | 6.3 | 7.8 |
| Infrastructure | 7.0 | 6.9 | 7.1 | 8.3 |
| Commodities | 5.0 | 6.3 | 4.9 | 5.7 |
| Hedge Funds | 6.0 | 5.4 | 6.2 | 6.1 |
| Inflation | 2.6 | 2.5 | 2.5 | 2.6 |

¹ The 10-year horizon included all 42 respondents to the survey, and the 20-year horizon included 27 respondents. Figures are based on Meketa's 2023 CMEs.

San Jose Federated City Employees' Retirement System Strategic Asset Allocation

→ Policy Targets represent approved asset allocation from March of 2021.

| Asset Allocation | Policy (%) | 2024 Expected Return (%) | 2023 Expected Return (%) | Change |
|----------------------------|-------------|--------------------------|--------------------------|-------------|
| Growth | 75.0 | 9.0 | 9.4 | -0.4 |
| Public Equity | 49.0 | 8.7 | 9.3 | -0.6 |
| Private Markets | 21.0 | 10.3 | 10.1 | 0.2 |
| Emerging Markets Debt | 3.0 | 6.5 | 6.2 | 0.3 |
| High Yield Bonds | 2.0 | 7 | 7.3 | -0.5 |
| Low Beta | 8.0 | 3.7 | 4.1 | -0.4 |
| Cash Equivalents | 5.0 | 2.5 | 2.9 | -0.4 |
| Hedge Funds | 3.0 | 5.8 | 6.1 | -0.3 |
| Other | 17.0 | 5.4 | 5.2 | 0.2 |
| Core Private Real Estate | 5.0 | 6.9 | 6.5 | 0.4 |
| TIPS | 2.0 | 4.7 | 4.5 | 0.2 |
| Investment Grade Bonds | 8.0 | 4.8 | 4.7 | 0.1 |
| Long-term Government Bonds | 2.0 | 5.0 | 5.0 | 0.0 |

Year-over-Year Comparison

| Asset Allocation | 2024 Expectations (%) | 2023 Expectations (%) | Change |
|---------------------------|-----------------------------|-----------------------------|--------|
| Expected Return | 8.5 | 8.8 | -0.3 |
| Meketa Standard Deviation | 13.4 | 14.0 | -0.6 |
| Sharpe Ratio | 0.45 | 0.42 | +0.3 |
| Verus Standard Deviation | 11.8 | 12.1 | |

- Meketa Investment Group's long-term (20-year) annualized expected return for the San Jose Federated City Employees' Retirement System portfolio has decreased from 8.8% using our 2023 assumptions to 8.5% using our 2024 assumptions.
- The portfolio's expected standard deviation has also decreased from 14.0% to 13.4%.
- The standard deviation decreasing by more than the expected return has led to a greater amount of expected return per amount of expected risk.

Year-over-Year Comparison (continued)

| Asset Allocation | Policy (%) | 2024 Expected Return (%) | 2023 Expected Return (%) | Change |
|------------------|------------|--------------------------|--------------------------|--------|
| Growth | 75.0 | 9.0 | 9.4 | -0.4 |
| Low Beta | 8.0 | 3.7 | 4.1 | -0.4 |
| Other | 17.0 | 5.4 | 5.2 | +0.2 |

→ The table above lists the 20-year return expectations for each Federated asset class.

| Asset Allocation | Policy (%) | 2023 Standard Deviation (%) | 2022 Standard Deviation (%) | Change |
|------------------|------------|-----------------------------|-----------------------------|--------|
| Growth | 75.0 | 12.8 | 13.5 | -0.6 |
| Low Beta | 8.0 | 0.2 | 0.2 | +0.0 |
| Other | 17.0 | 0.4 | 0.4 | +0.1 |

→ The table above lists the 20-year standard deviation expectations for each Federated asset class.

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