IN PERSON & VIRTUAL BOARD MEETING

SEPTEMBER 12, 2023 AT 8:30 AM

BOARD OF INVESTMENTS OFFSITE MEETING

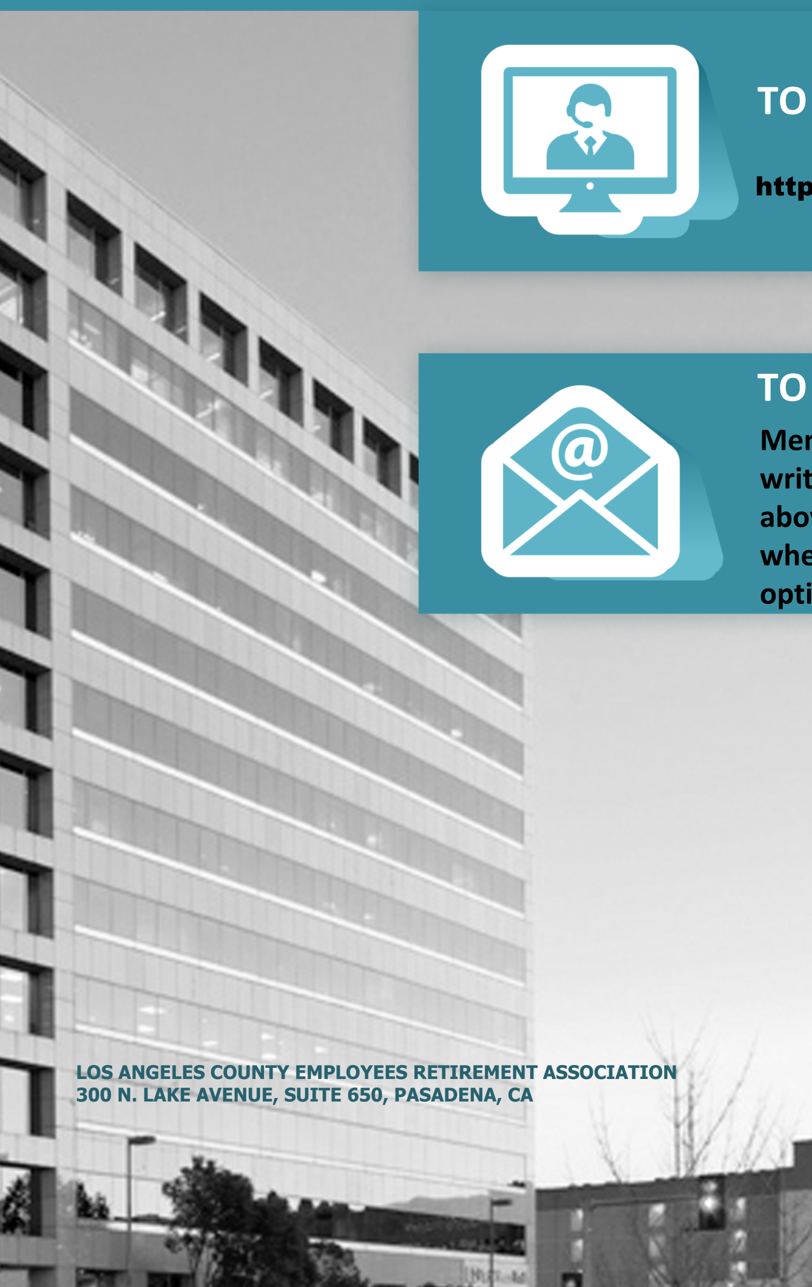
TO VIEW VIA WEB

https://lacera.com/leadership/board-meetings

TO PROVIDE PUBLIC COMMENT

Members of the public may address the Board orally and in writing. To provide Public Comment, you should visit the above link and complete the request form by selecting whether you will provide oral or written comment from the options located under Options next to the Board meeting.

Attention: If you have any questions, you may email PublicComment@lacera.com. If you would like to make a public comment during the board meeting, review the Public Comment instructions.



LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION
300 N. LAKE AVENUE, SUITE 650, PASADENA, CA

NOTICE OF A SPECIAL MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CA 91101

8:30 A.M., TUESDAY, SEPTEMBER 12, 2023

This meeting will be conducted by the Board of Investments both in person and by teleconference under California Government Code Section 54953(f).

Any person may view the meeting in person at LACERA's offices or online at https://LACERA.com/leadership/board-meetings

The Board may take action on any item on the agenda, and agenda items may be taken out of order.

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. PROCEDURE FOR TELECONFERENCE MEETING ATTENDANCE UNDER AB 2449, California Government Code Section 54953(f)

A. Just Cause
B. Action on Emergency Circumstance Requests
C. Statement of Persons Present at AB 2449 Teleconference Locations

IV. WELCOME AND OPENING REMARKS

V. PUBLIC COMMENT

(Members of the public may address the Board orally and in writing. To provide Public Comment, you should visit https://LACERA.com/leadership/board-meetings and complete the request form by selecting whether you will provide oral or written comment from the options located under Options next to the Board meeting.

If you select oral comment, we will contact you via email with information and instructions as to how to access the meeting as a speaker. You will have up to 3 minutes to address the Board. Oral comment request will be accepted up to the close of the Public Comment item on the agenda.

V. PUBLIC COMMENT (Continued)

If you select written comment, please input your written public comment or documentation on the above link as soon as possible and up to the close of the meeting. Written comment will be made part of the official record of the meeting. If you would like to remain anonymous at the meeting without stating your name, please leave the name field blank in the request form. If you have any questions, you may email PublicComment@lacera.com.)

VI. THE MACRO ENVIRONMENT

This session is focused on broad themes and geopolitical challenges in today's macro environment, a discussion on new opportunities that have emerged as the environment shifts and the implications for investors.

Magdalia Armstrong, LACERA
Jean Boivin, Blackrock

VII. BOARD AND COMMITTEE EVALUATION

An evaluation of LACERA's Board and Committee governance items, roles and responsibilities including a dialogue, facilitated by Meketa, reviewing responses from the Trustee Assessment Survey. A discussion on the current framework and assessing areas of strengths and opportunity.

David Simpson, LACERA
Tim Filla, Meketa
Aysun, Kilic, Meketa
Imran Zahid, Meketa

VIII. CAPITAL MARKETS EXPECTATIONS (CMEs)

A review of Meketa's 2023 Capital Markets Expectations, highlighting meaningful changes from the 2021 Strategic Asset Allocation (SAA) review with a focus on broad economic indicators and the potential impact to LACERA's 2024 SAA.

Krista Powell, LACERA
Tim Filla, Meketa
Aysun Kilic, Meketa
Leandro Festino, Meketa

IX. ACTUARIAL FUNDING POLICY REVIEW

A panel discussion on LACERA's Actuarial Funding Policy, the purpose and key elements of a funding policy, a review of the background and terms of the current policy, key principles and other areas for consideration when updating the policy, and a roadmap for next steps.

Vache Mahseredjian, LACERA
Daniel Joye, LACERA
Cindy Rivera, LACERA
Calvin Chang, LACERA
Luis Lugo, LACERA
Ted Granger, LACERA
Steven P. Rice, LACERA
Nick Collier, Milliman
Ashley K. Dunning, Nossaman, LLP

X. CLOSING REMARKS

XII. ADJOURNMENT

Documents subject to public disclosure that relate to an agenda item for an open session of the Board of Investments that are distributed to members of the Board of Investments less than 72 hours prior to the meeting will be available for public inspection at the time they are distributed to a majority of the Board of Investments Members at LACERA's offices at 300 N. Lake Avenue, Suite 820, Pasadena, CA 91101, during normal business hours of 9:00 a.m. to 5:00 p.m. Monday through Friday.

Persons requiring an alternative format of this agenda pursuant to Section 202 of the Americans with Disabilities Act of 1990 may request one by calling Cynthia Guider at (626) 564-6000, from 8:30 a.m. to 5:00 p.m. Monday through Friday, but no later than 48 hours prior to the time the meeting is to commence. Assistive Listening Devices are available upon request. American Sign Language (ASL) Interpreters are available with at least three (3) business days' notice before the meeting date.

Requests for reasonable modification or accommodation of the telephone public access and procedures stated in this agenda from individuals with disabilities, consistent with the Americans with Disabilities Act of 1990, may call the Board Offices at (626) 564-6000, Ext. 4401/4402 from 8:30 a.m. to 5:00 p.m. Monday through Friday or email PublicComment@lacera.com, but no later than 48 hours prior to the time the meeting is to commence.

Macro Environment

2023 Board of Investments Offsite
September 12, 2023

Macro Environment

Tuesday, September 12th – 8:45am – 10:00am*

Today's Discussion

Session Outline

1. Introduction: *Magdalia Armstrong, LACERA*
2. Presentation: *Jean Boivin, Blackrock*
    - New Investment Regime
    - Pivot to New Opportunities
    - Implications for Investors

Objectives

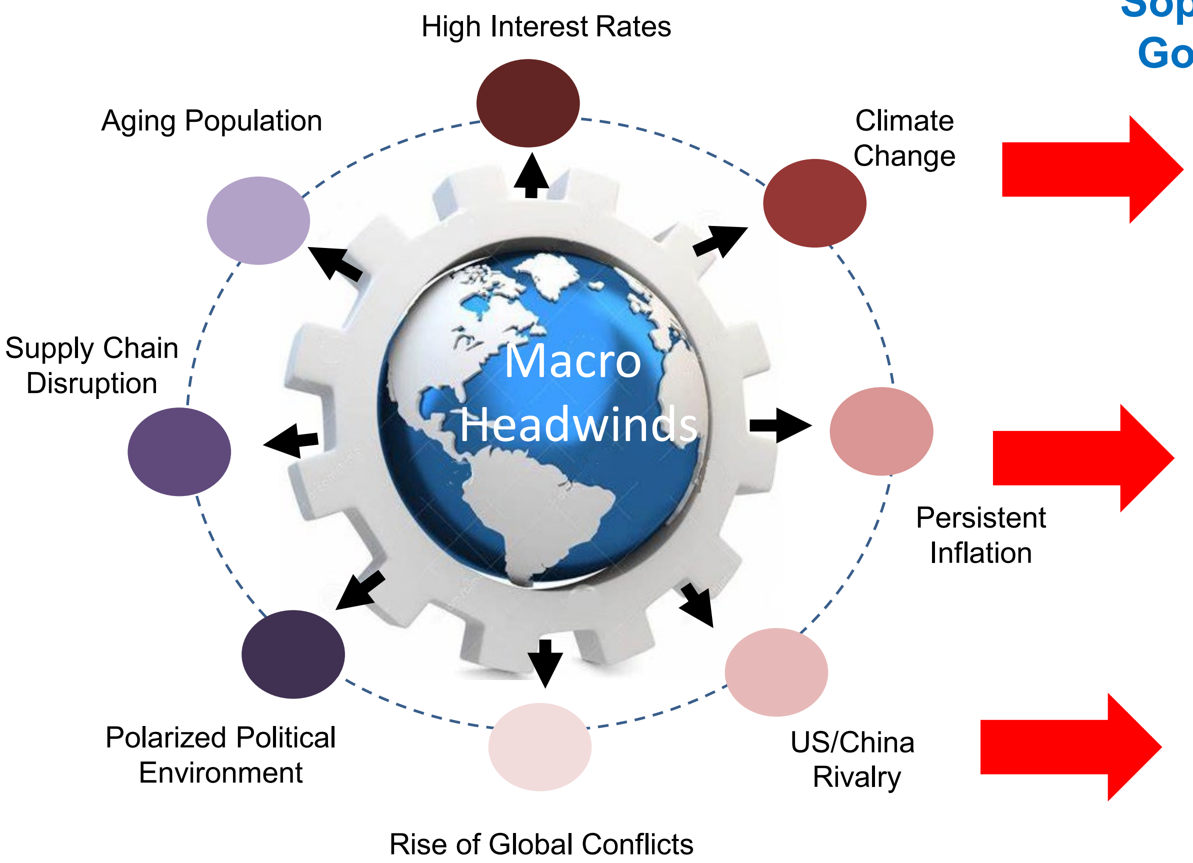
- Review global geopolitical challenges
- Enumerate key macroeconomic themes
- Present new opportunities that have emerged
- Discuss ways investors can adapt to generate returns in macro environment

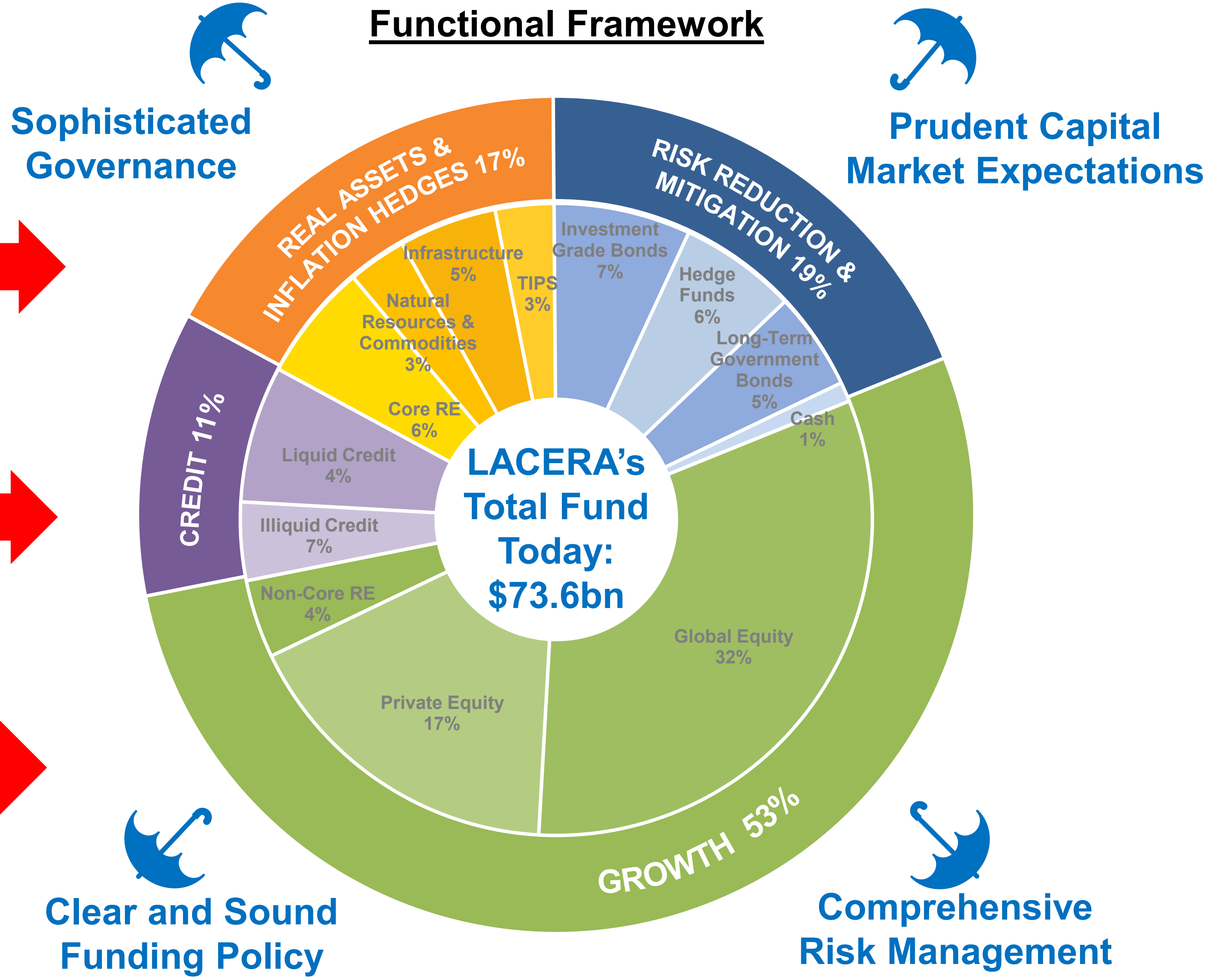
*Subject to change

Speaker Biographies

- **BLACKROCK**
  - *Jean Boivin, PhD – Managing Director, Head of BlackRock Investment Institute (BII)*
    - Dr. Boivin is responsible for harnessing BlackRock’s investment expertise and generating proprietary research to help portfolio managers and clients navigate financial markets. Dr. Boivin drives BII’s research on macroeconomics, sustainability, geopolitics and portfolio construction. BII’s strategist network and publications team bring these insights to clients and the media globally
    - Dr. Boivin is a member of BlackRock's Global Operating Committee and the Global Executive Investment Subcommittee
    - Prior to joining BlackRock in 2014, Dr. Boivin served as Deputy Governor of the Bank of Canada and Associate Deputy Finance Minister, serving as Canada's representative at the G7, G20 and Financial Stability Board. Dr. Boivin has also taught at Columbia Business School and HEC Montréal, and has published widely on macroeconomics, monetary policy and finance. Dr. Boivin earned a B.Sc. degree from the Université de Montréal, and a PhD from Princeton University in economics

LACERA Adapting to Tackle Macroeconomic Challenges





BlackRock

New regime, New opportunities

BlackRock **Investment** Institute

Outline

September 12th, 2023

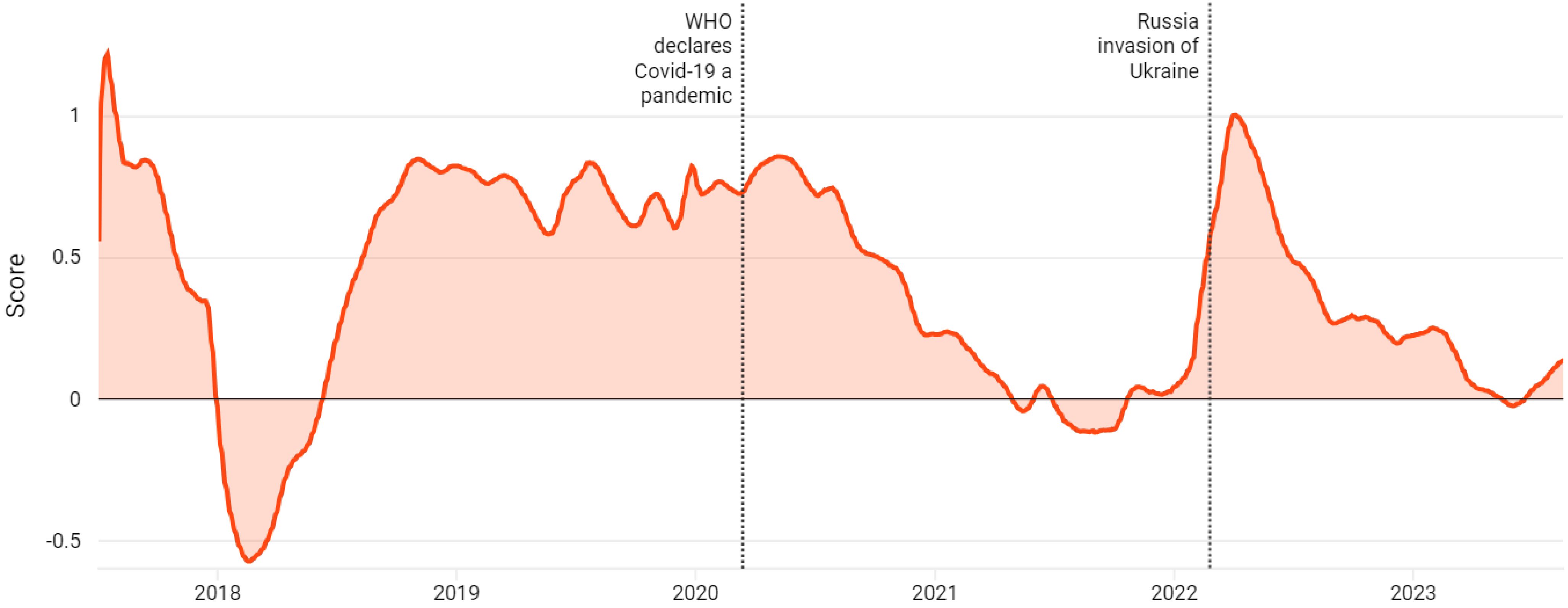
- **New Investment Regime**
  - Geopolitical environment
  - Macroeconomic themes
- **Pivot to New Opportunities**
  - Income, Emerging Markets, Japan, and Real Estate
- **Implications for Investors**
  - New approach: flexible, nimble, beyond asset classes

New Investment Regime

BlackRock Geopolitical Risk Indicator

The global BlackRock Geopolitical Risk Indicator (BGRI) aims to capture overall market attention to geopolitical risks. The indicator is a simple average of our top 10 individual risks.

Global Indicator

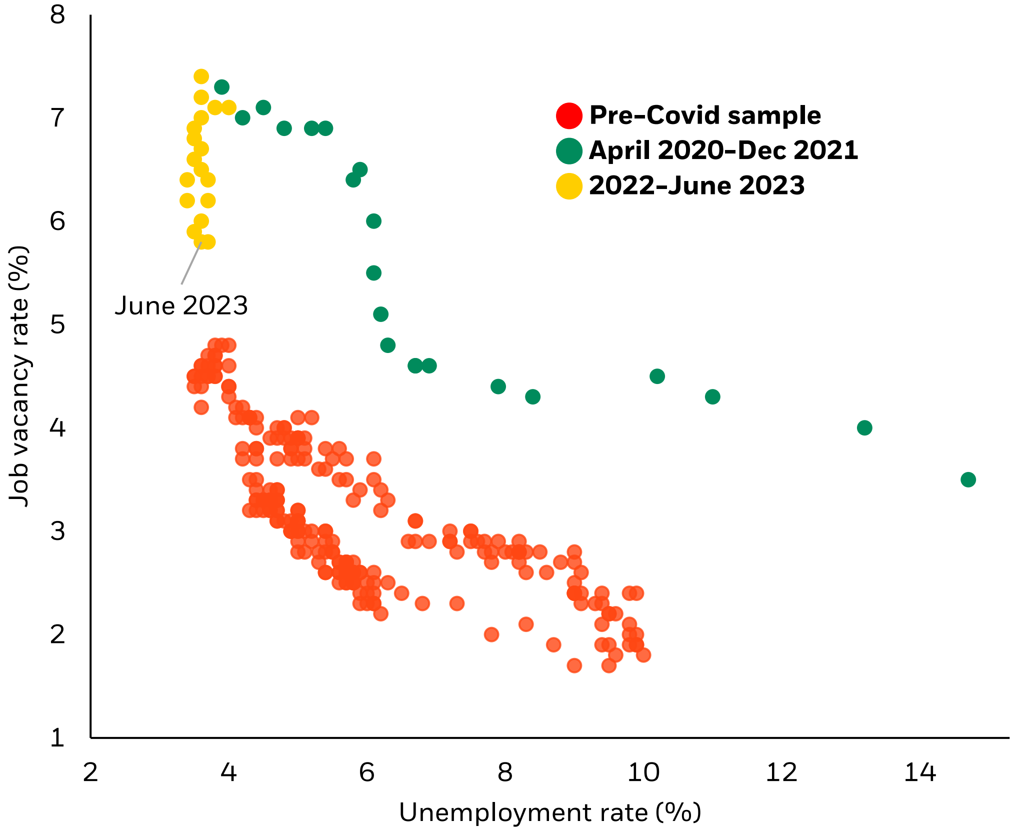


Forward looking estimates may not come to pass. Source: BlackRock Investment Institute. August 2023. The BlackRock Geopolitical Risk Indicator (BGRI) tracks the relative frequency of brokerage reports (via Refinitiv) and financial news stories (Dow Jones News) associated with specific geopolitical risks. We adjust for whether the sentiment in the text of articles is positive or negative, and then assign a score. This score reflects the level of market attention to each risk versus a 5-year history. We use a shorter historical window for our COVID risk due to its limited age. We assign a heavier weight to brokerage reports than other media sources since we want to measure the market's attention to any particular risk, not the public's.

Demographic trends could drive a big structural adjustment

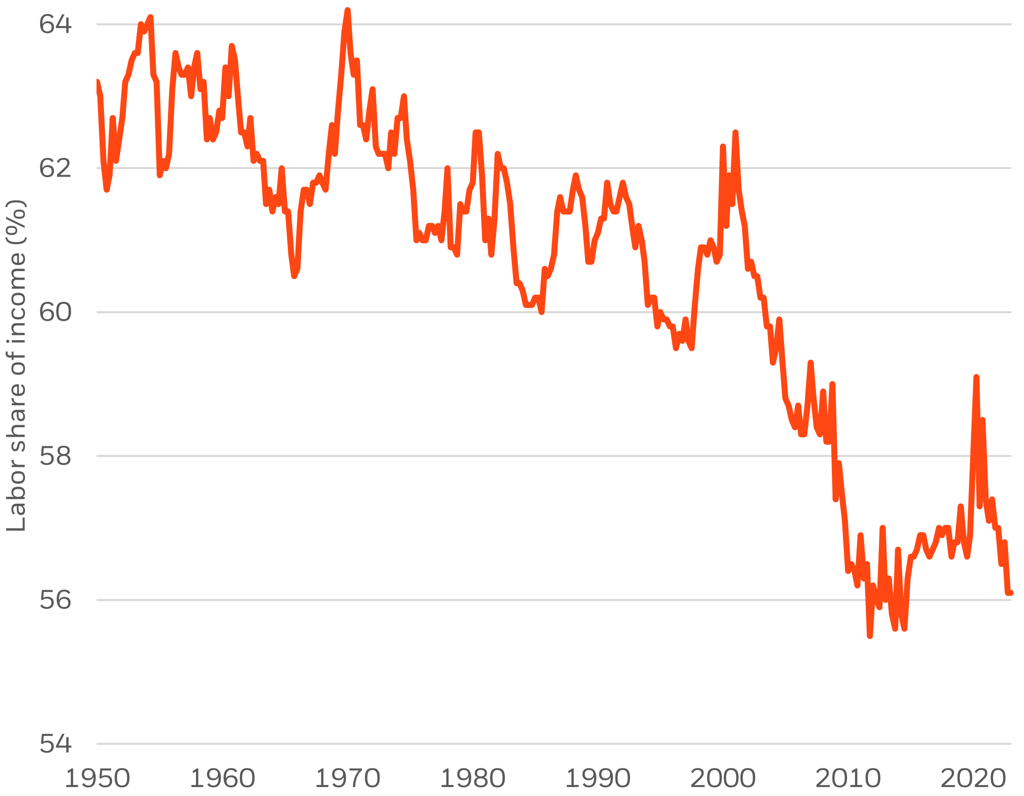
The labor market is starting to normalize, but an aging population is set to constrain the size of the workforce from here, we think. More scarce labor could increase workers' bargaining power, meaning more pay and less profit.

U.S. job vacancy and unemployment rate, 2001–2023



Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, August 2023. Notes: The chart shows the U.S. job vacancy rate vs the unemployment rate in the same month.

U.S. labor share of income, 1950–2023

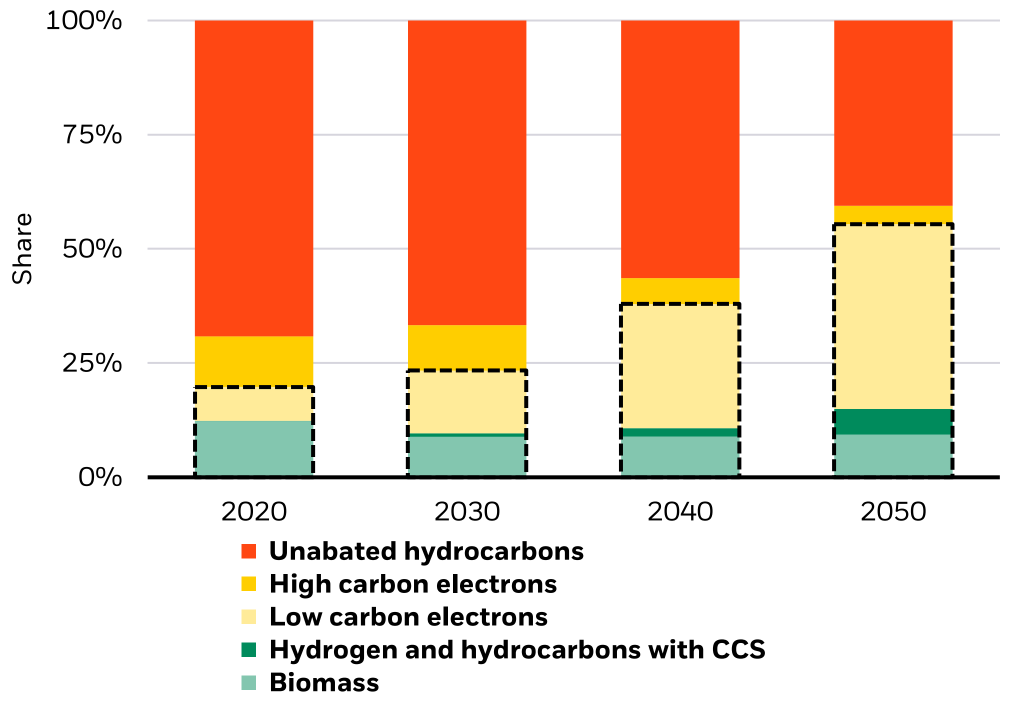


Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, August 2023. Notes: The chart shows the share of U.S. national income allocated to labor compensation.

We see the low-carbon transition stoking higher inflation

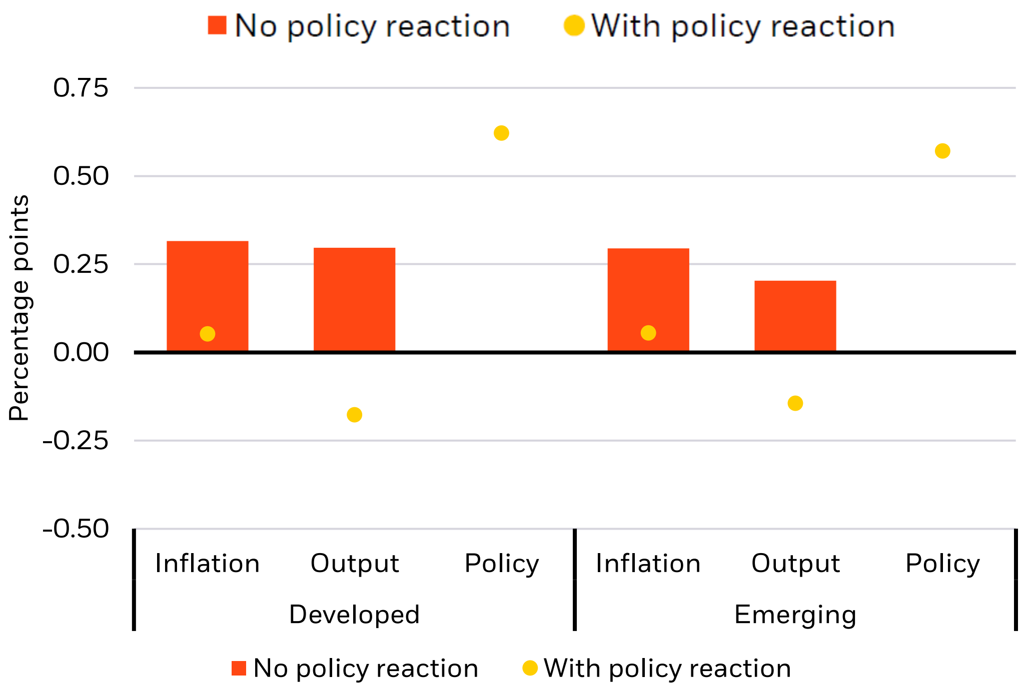
The BlackRock Investment Institute Transition Scenario (BIITS) expects the transition to contribute to higher energy costs and inflation over the next decade as the global energy mix shifts to lower-carbon sources.

BIITS estimate of final energy demand, 2020-2050



Forward-looking estimates may not come to pass. Sources: BlackRock Investment Institute and Aladdin Sustainability Analytics, August 2023. The BIITS estimate is based on the model outputs and sources listed in the appendix. Notes: The chart shows estimates of the sources of global energy demand between 2020-2050. For instance, it expects electricity generated from low-carbon sources (light yellow) to become the dominant energy source by 2050, replacing unabated hydrocarbons () –or hydrocarbon use with no provision for carbon capture or storage (CCS). Biomass is organic material from plants and animals.

Estimated impact on macro, 2020-2030

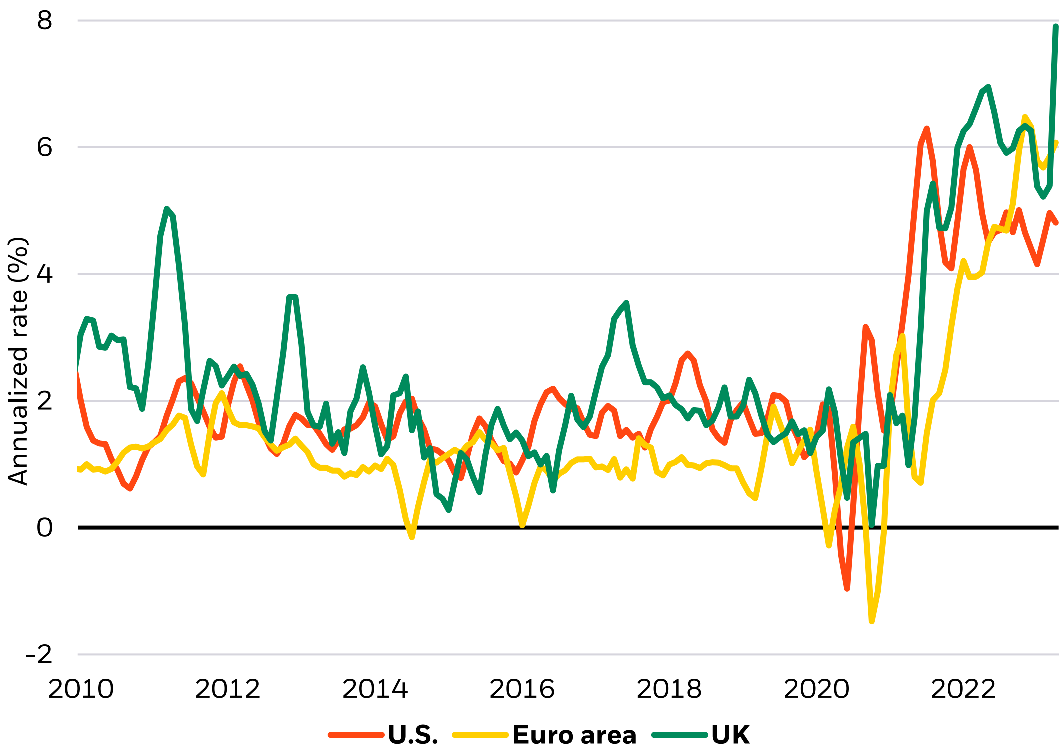


Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute (BII), with data from Haver Analytics, July 2023. Notes: The chart shows BII's estimates of the impact of the low-carbon transition on inflation and output in DM and EM between 2020-2030 under two illustrative BII scenarios: with and without a monetary policy response (rising interest rates) to higher inflation.

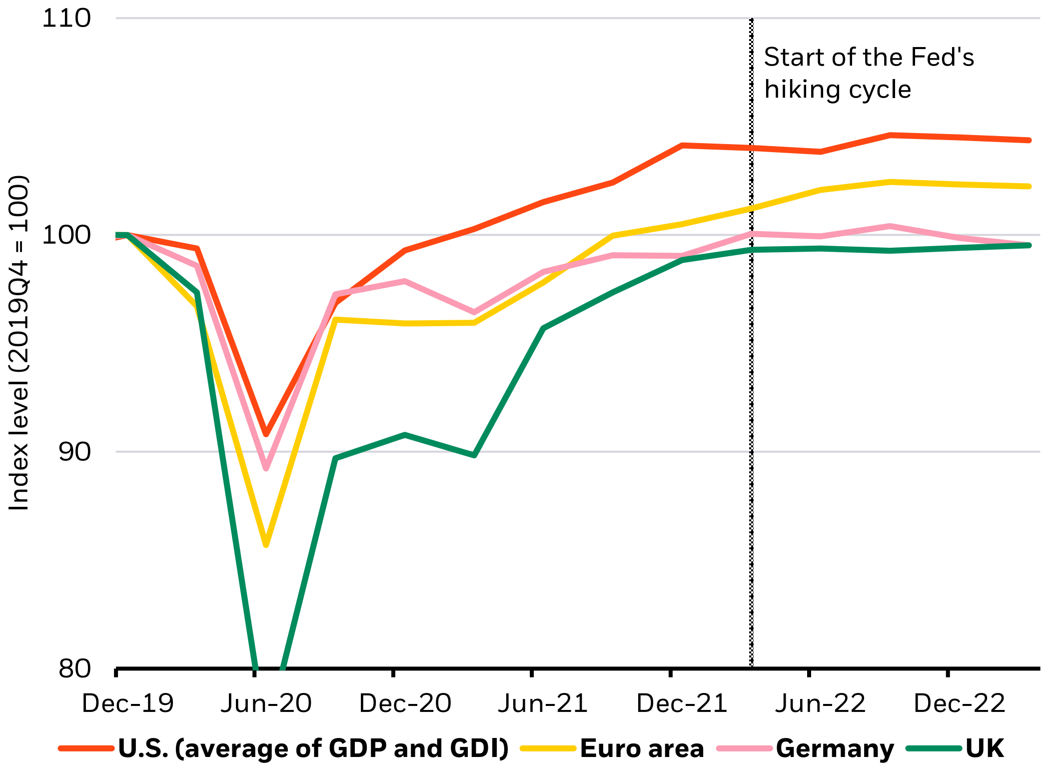
Stubborn inflation persists even as growth falters

There's been little progress on inflation so far this year. The fastest central bank hiking cycle since the 1980s has done little to control inflation but activity has stagnated. It highlights the sharp trade-off facing central banks today.

Core inflation, 2010 –2022



Economic output, 2019–2023

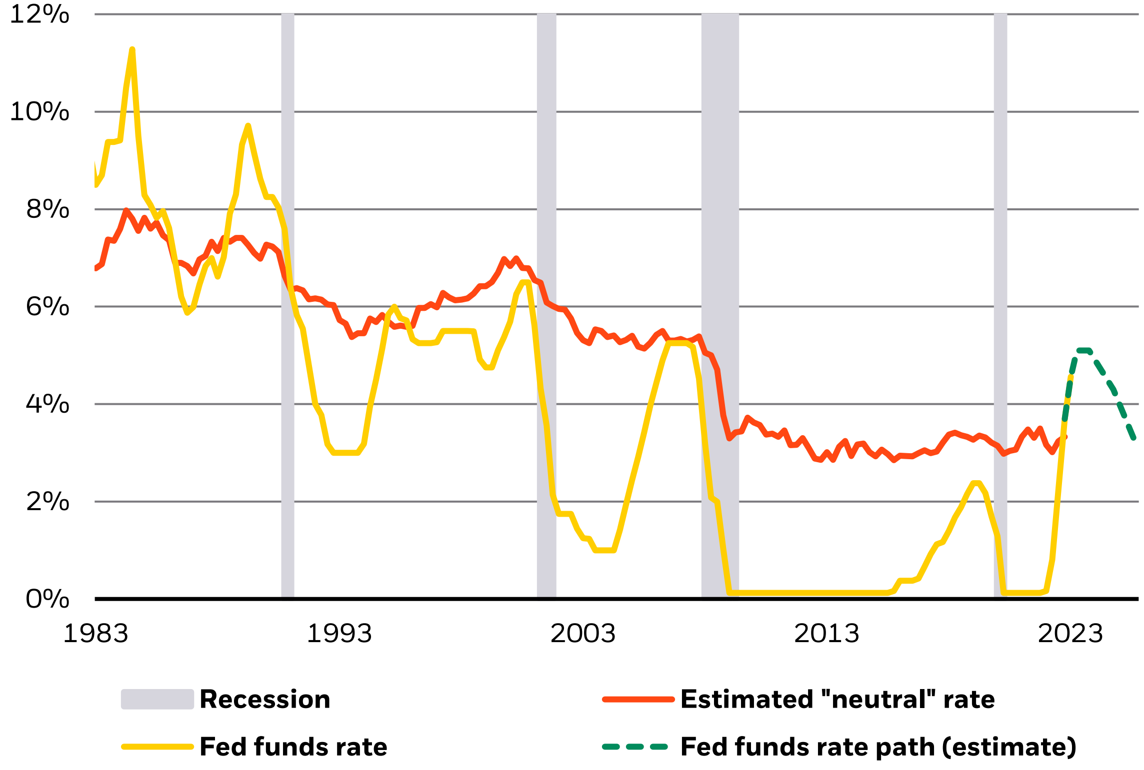


Source: BlackRock Investment Institute, Eurostat with data from Haver Analytics, May 2023. Notes: The chart on the left shows inflation for prices excluding food and energy, or core inflation, for the Euro area, the UK and the U.S. The measure for inflation used takes the three-month average of inflation and compares it to the previous three-month period. The chart on the right shows various measures of economic output for the Euro area, Germany, the UK and the U.S. The measure for the U.S. takes the average of the Gross Domestic Product (GDP) and Gross Domestic Income (GDI). The measure used for the other countries is GDP.

Central banks forced into an era of tight policy

Persistent supply constraints stoking inflationary pressures are compelling major central banks to hold policy tight, creating greater macro and market volatility. That backdrop offers investment opportunities different from the past.

U.S. Fed policy rate and projections vs. neutral rate estimate, 1983–2025

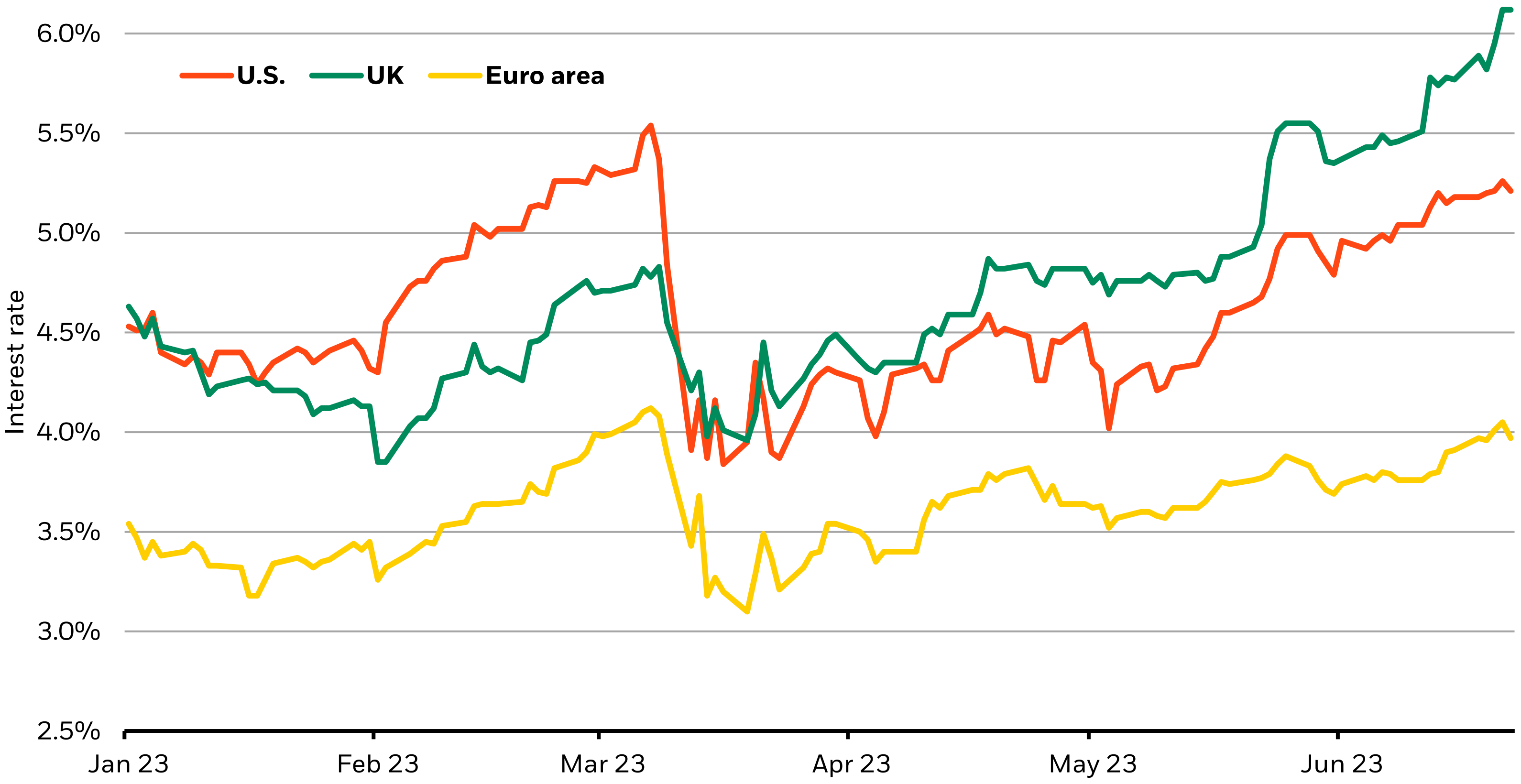


Forward looking estimates may not come to pass. Source: BlackRock Investment Institute, New York Fed, U.S. Bureau of Labor Statistics, with data from Haver Analytics, May 2023. Notes: The chart shows the fed funds rate, an estimate of the fed funds rate path and an estimate of the nominal “neutral” rate. The nominal neutral rate is a hypothetical estimate of the central bank interest rate that will neither stimulate or depress economic growth. The neutral rate estimate is from the Holston Laubach Williams (2017) estimate of (real) neutral rate plus an estimate of expected inflation from the model by D’Amico, Kim and Wei (2018).

Central banks not coming to the rescue

Bond markets were quick to price in rate cuts in 2023 following the banking sector crisis in March. Yet persistent inflation left central banks little room to ease as they would've in the past during times of financial stress.

Market pricing of end-of-2023 policy interest rates, 2023



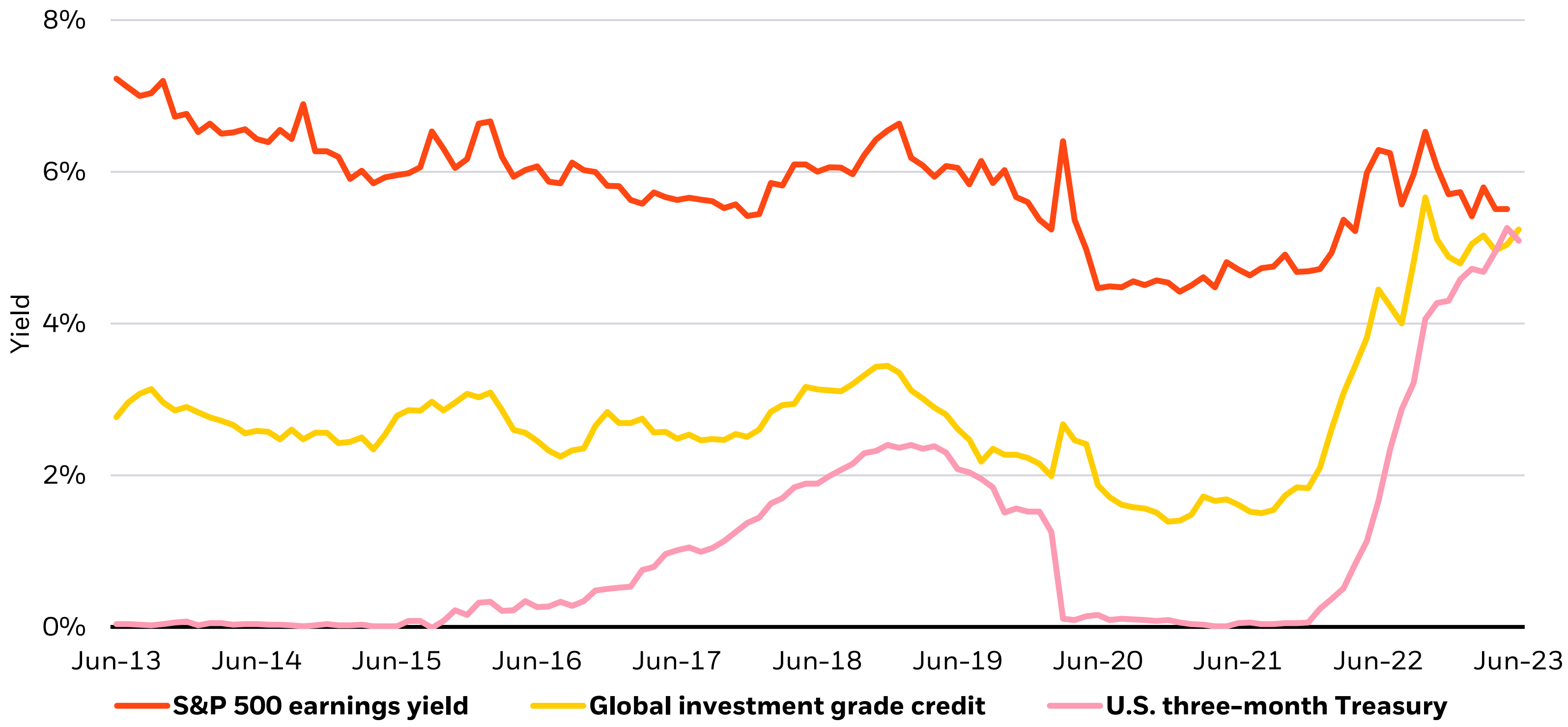
Source: BlackRock Investment Institute, with data from Refinitiv Datastream, June 2023. Notes: The chart shows the market pricing of where central bank policy interest rates will be at the end of 2023, using Euribor futures for the euro area, SONIA futures for the UK and SOFR futures for the U.S.

Pivot to New Opportunities

Income is back thanks to higher short-term bond yields

The gap between equity and bond yields has compressed over the last year. With short-term bond yields surging as central banks look to keep rates higher for longer, investors may find value outside of U.S. equities.

S&P 500 earnings, investment grade (IG) credit and U.S. three-month Treasury yields, 2013-2023

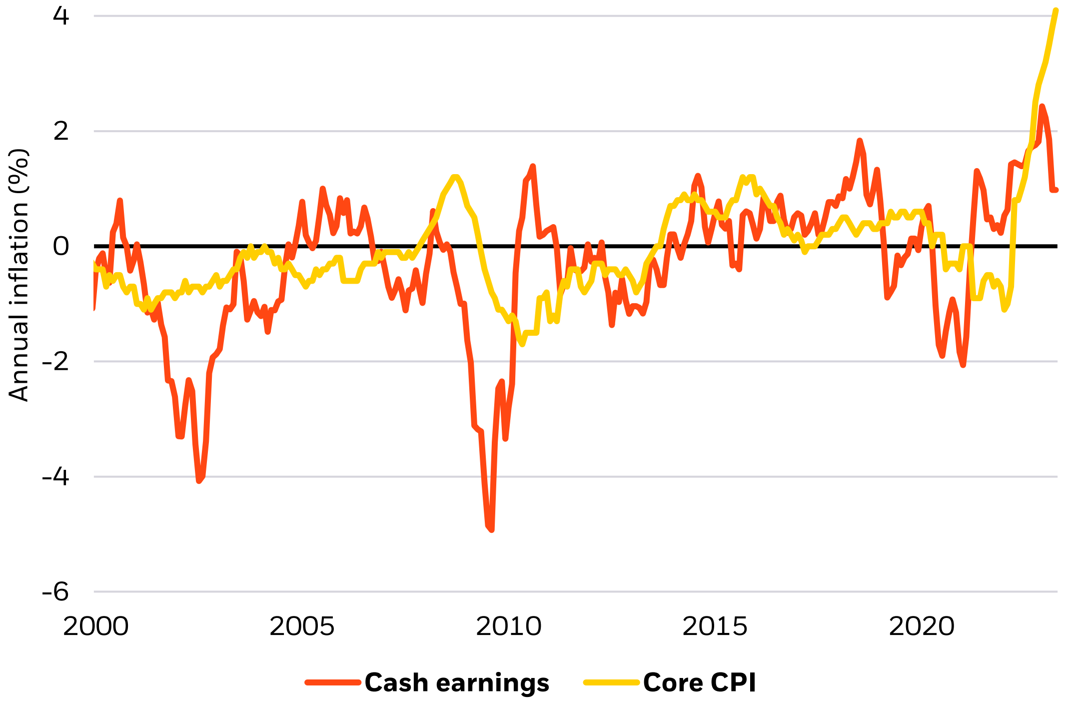


Past performance is not a reliable indicator of current or future results, and index returns do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute, with data from Refinitiv Datastream, June 2023. Notes: The chart shows the earnings yield for the S&P 500 index, and the yields for global investment grade credit and the U.S. three-month Treasury bill. The indexes used are the S&P 500 composite index and the Bloomberg Global Aggregate – Corporate USD index.

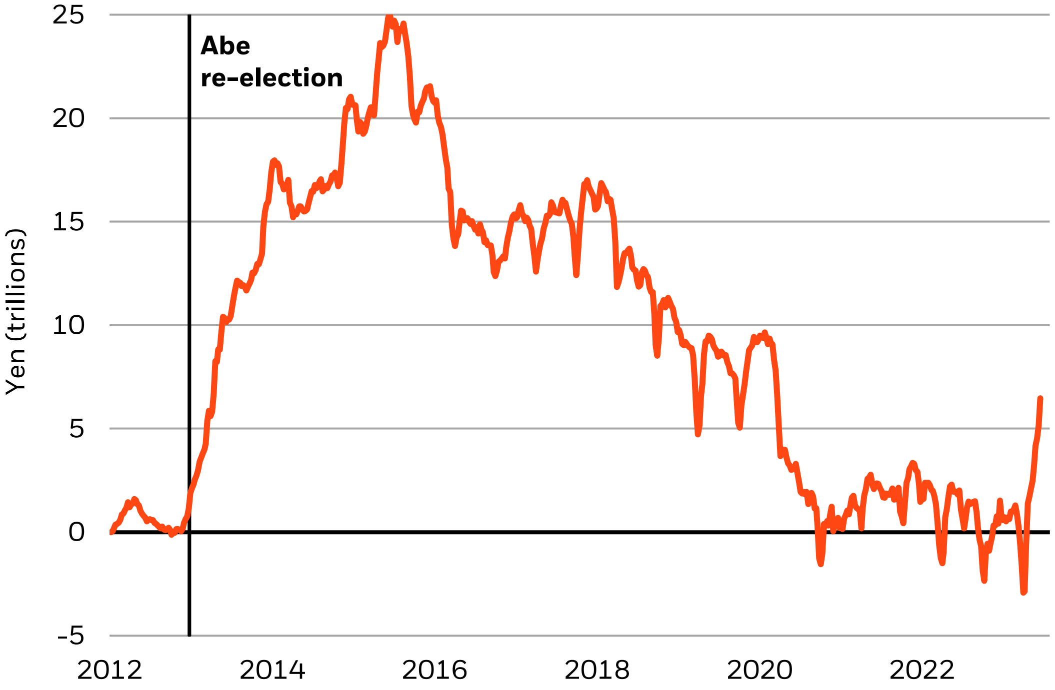
Warming to Japanese equities as outlook brightens

The combination of a return of inflation after decades, shareholder-friendly reforms and ultra-loose policy have seen foreign investors flock to the market. We move to a neutral position in Japanese equities.

Japan wage growth and core inflation, 2000-2023



Net inflows to Japan equities, 2012-2023

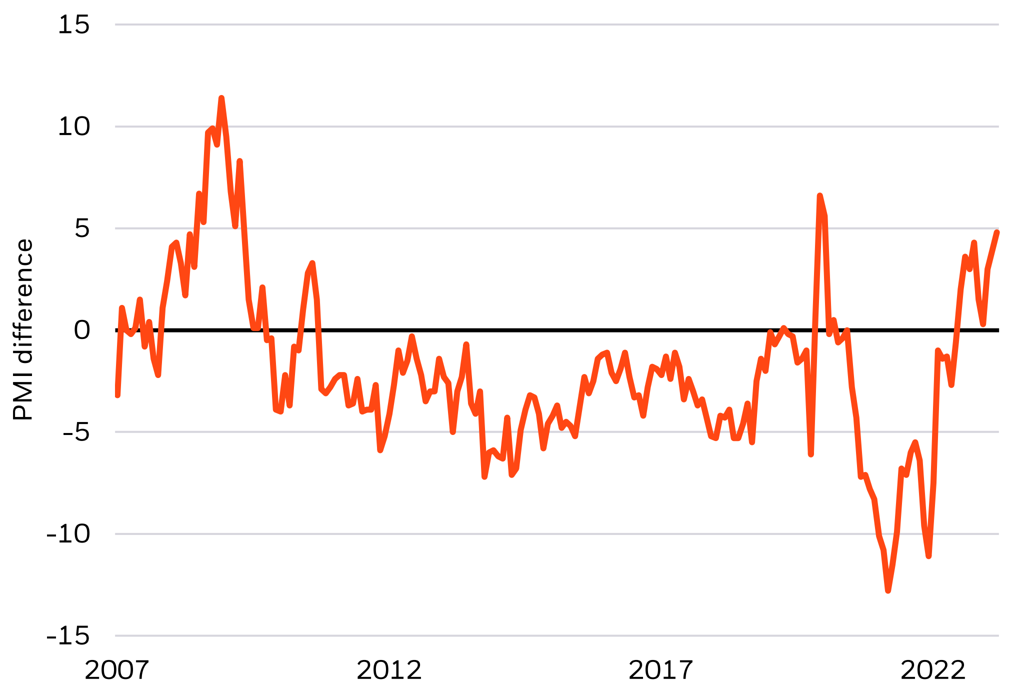


Source: BlackRock Investment Institute, with data from Haver Analytics, Refinitiv Datastream and Japan Ministry of Internal Affairs and Communications and Japan Ministry of Health, Labor and Welfare, June 2023. Notes: The left-hand chart shows Japan nominal cash earnings growth (for firms with five or more employees) and Consumer Price Index (CPI) excluding fresh food and energy prices, both expressed as percent change on a year earlier. The right-hand chart shows cumulative net weekly flows into Japanese equities since the start of 2012.

We go overweight hard currency EM debt

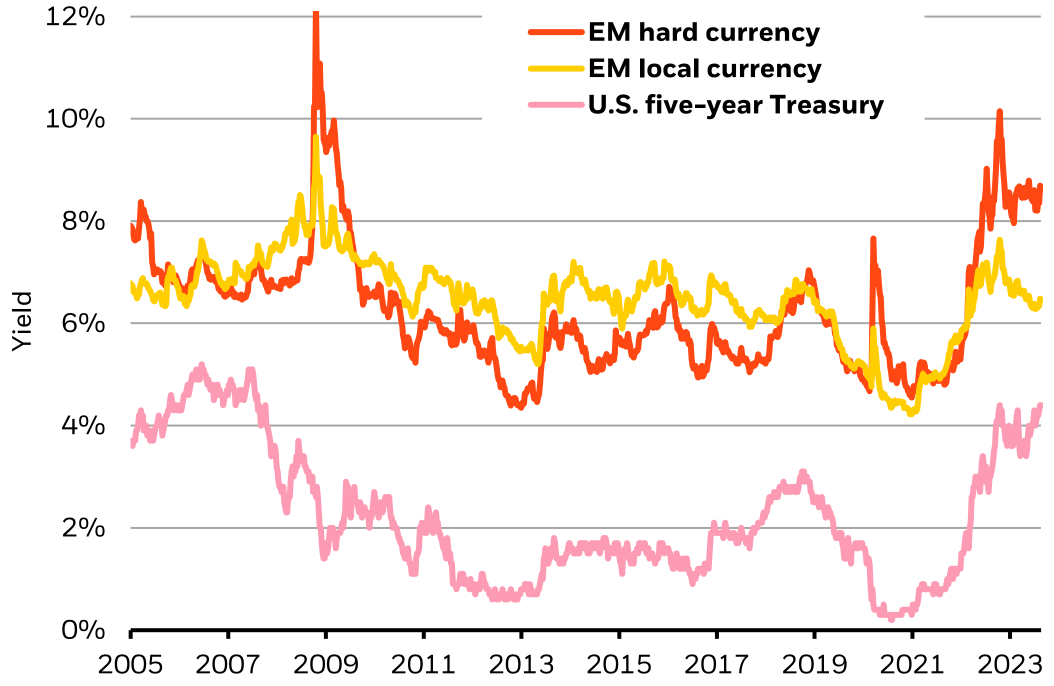
We prefer emerging hard currency debt due to higher yields. It is also cushioned from weakening local currencies as EM central banks start to cut policy rates.

EM PMI vs. DM, 2006-2023



Past performance is not a reliable indicator of current or future results, and index returns do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute, Bank of International Settlements (BIS), Bloomberg, S&P, JPMorgan with data from Refinitiv Datastream, August 2023. Notes: The chart shows the difference between the S&P emerging market manufacturing PMI and U.S. PMI.

EM bonds vs. U.S. Treasury yields, 2005-2023

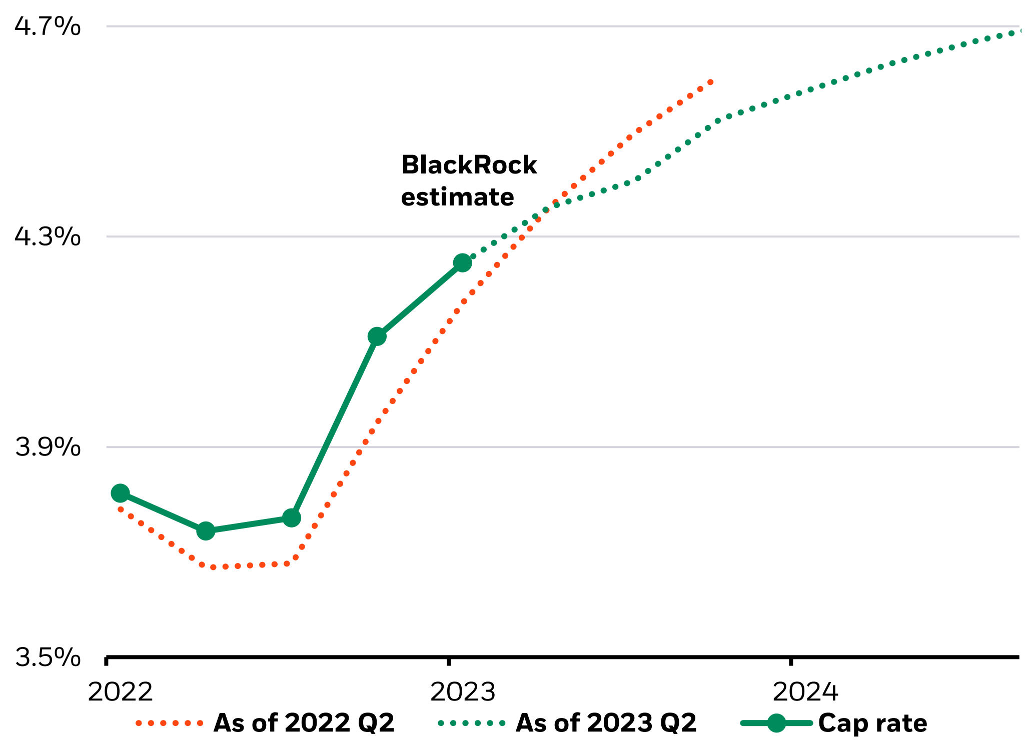


Source: BlackRock Investment Institute, with data from Refinitiv Datastream, August 2023. Notes: The chart shows yield levels for the JP Morgan Emerging Market Bond Index Global Diversified (EM hard currency), JP Morgan GBI-Emerging Market Bond Index Global Diversified and the benchmark U.S. five-year Treasury.

We see further repricing in real estate amid higher dispersion

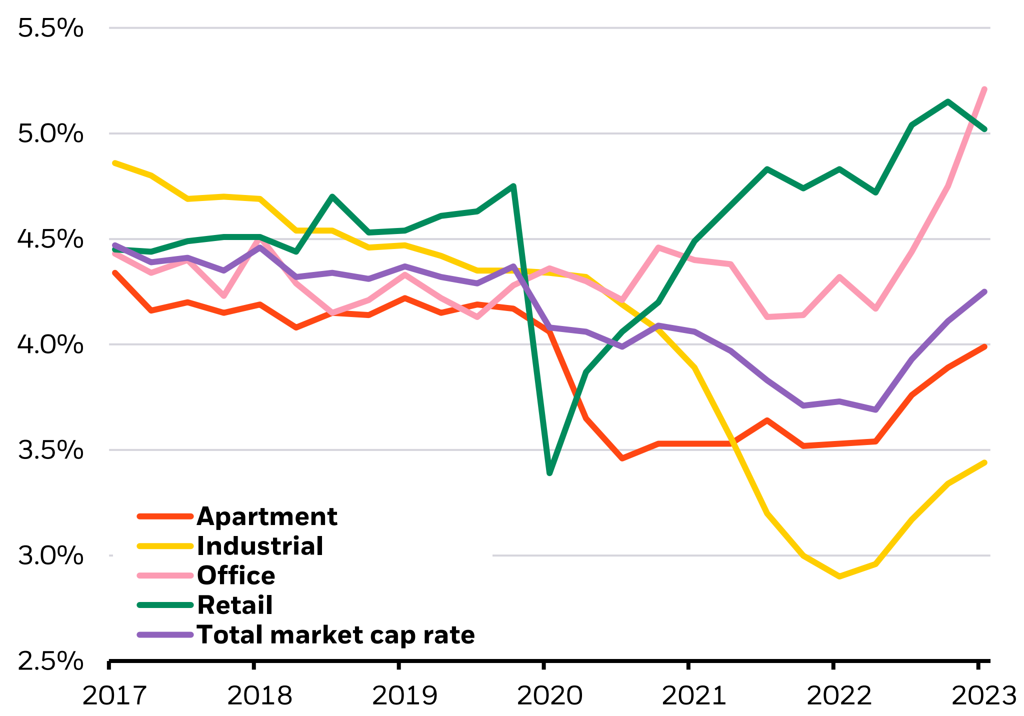
Higher rates have pressured real estate valuations, capitalization (cap) rates, and we see further cheapening ahead. Yet we expect greater dispersion within real estate that warrants taking more granular views to grasp opportunities.

Real estate cap rates, actual vs. estimates



Forward looking estimates may not come to pass. Source: BlackRock Investment Institute with data from NCREIF, August 2023. Notes: The chart shows historical capitalization rates (solid green line) against BII's estimates from 2022 Q2 (dotted orange line) and the latest estimate from the 2023 Q2 CMAs. (dotted green line). Our cap rate estimates are based on our analysis of the historical relationship between 10-year real Treasury bond yields, investment grade credit spreads and a real estate premium (the additional compensation investors require for investing in real estate). This analysis is only an estimate of the relationship and may not fully reflect the true relationship between these factors.

Capitalization rates across sectors, 2017–2023

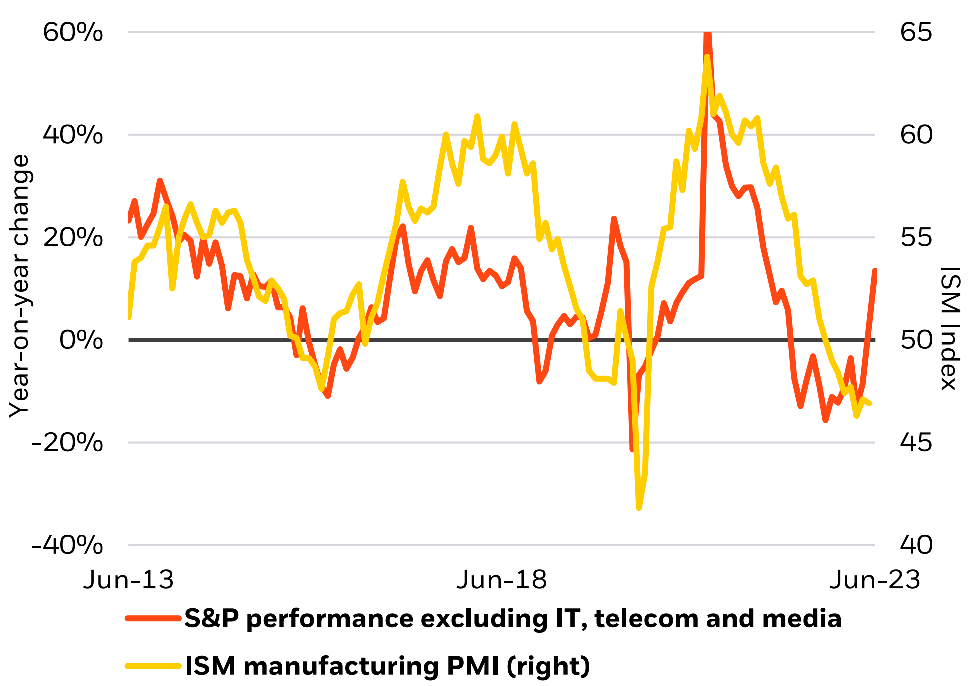


Source: BlackRock Investment Institute, August 2023, with data from NCREIF. Notes: The chart shows capitalization rates for all properties and individual core sectors: apartment, industrial, office, and retail. .

Pivoting from macro to new opportunities

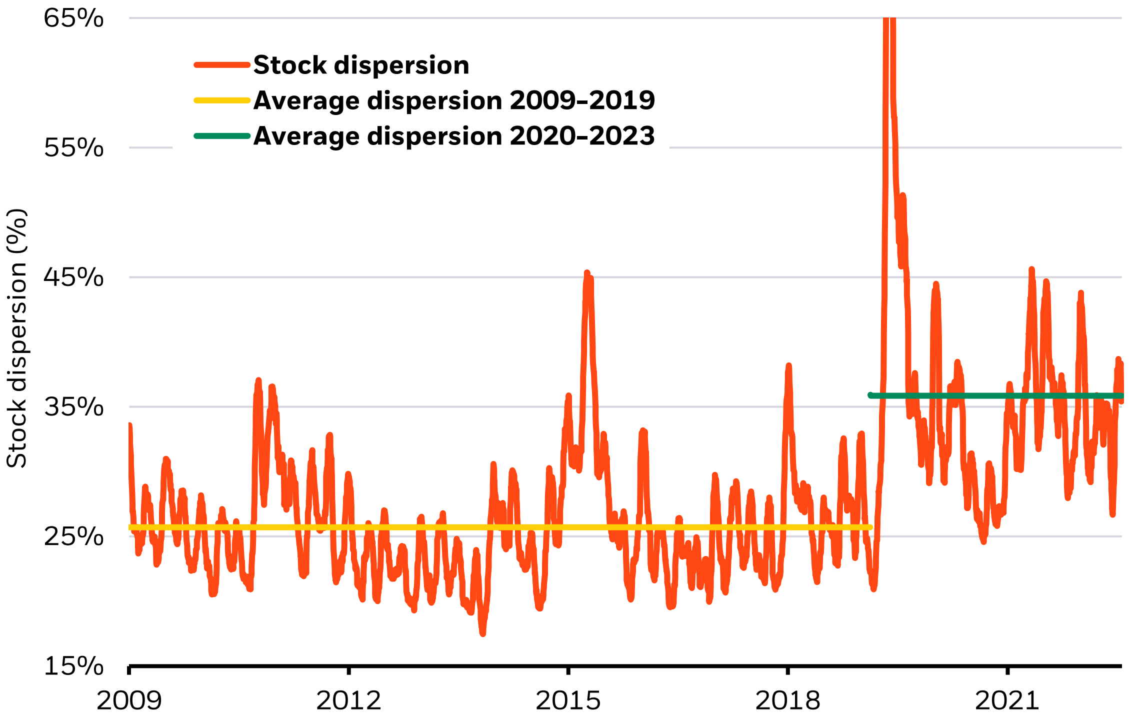
The jump in U.S. equity markets this year, even excluding sectors most directly impacted by the AI buzz, does not reflect our outlook of weaker growth and earnings. We see more granular opportunities amid greater dispersion.

S&P 500 performance vs. U.S. PMI, 2013-2023



Past performance is not a reliable indicator of current or future results, and index returns do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute and S&P Global, with data from Refinitiv Datastream, June 2023. Notes: The chart shows the year-on-year change of the S&P 500 excluding IT, Telecommunication and Media index in percentage terms and the ISM Manufacturing Purchasing Managers' Index (PMI). For the PMI, a rise above 50 represents activity expanding. A fall towards 50 and below represents activity contracting.

Range of individual stock returns vs. Russell 1000



Past performance is not a reliable indicator of current or future results, and index returns do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute, with data from Refinitiv, June 2023. Notes: The chart shows the dispersion in Russell 1000 stock returns based on a 21-day moving average (dark orange line), average dispersion from July 2009 after the global financial crisis through 2019 (yellow line), and average dispersion from 2020 through June 8, 2023 (green line).

Implications for Investors

Evolving our playbook

Broad and static investment solutions won't take you as far in this new regime as in the past, in our view. We think it calls for granularity and nimbleness instead – and we're extending our investment playbook accordingly.

Broad asset allocation

We start by determining asset allocations based on our assessment of the macro outlook on a tactical horizon of six to 12 months – and what's in the price. We then implement our portfolio views across broad exposures to asset classes.

Implementation

- We like income in DM short-term government bonds.
- We upgrade euro area and UK long-term government bonds after the rise in yields.

Getting granular

We then take a granular approach based on how much of our expected macro outlook is being priced in. This helps us narrow down regional, sectoral and industry preferences and opportunities, with the aim of producing above-benchmark returns.

Implementation

- We stay overweight U.S. inflation-linked bonds and downgrade the euro area.
- We like quality in both equities and fixed income.
- We get granular within EM local-currency debt, preferring Brazil and Mexico.
- We like short-term DM credit in an overall neutral stance on investment grade.

Harnessing mega forces

We factor in the effects of mega forces – powerful, structural forces that transcend the macro backdrop. These are not far into future: Many are already starting to drive returns and corporate profits – and go beyond asset classes.

Implementation

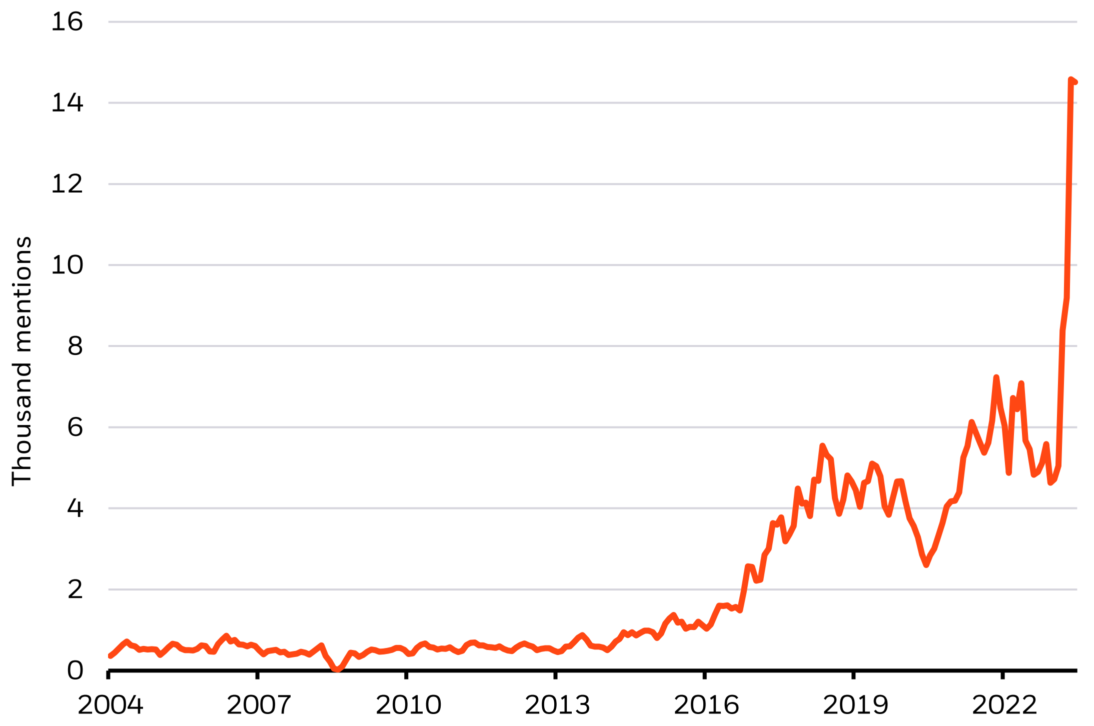
- We balance our macro underweight to U.S. equities with an overweight to AI-related equities

 Source: BlackRock Investment Institute, June 2023.

We already see the initial effects of AI being priced in

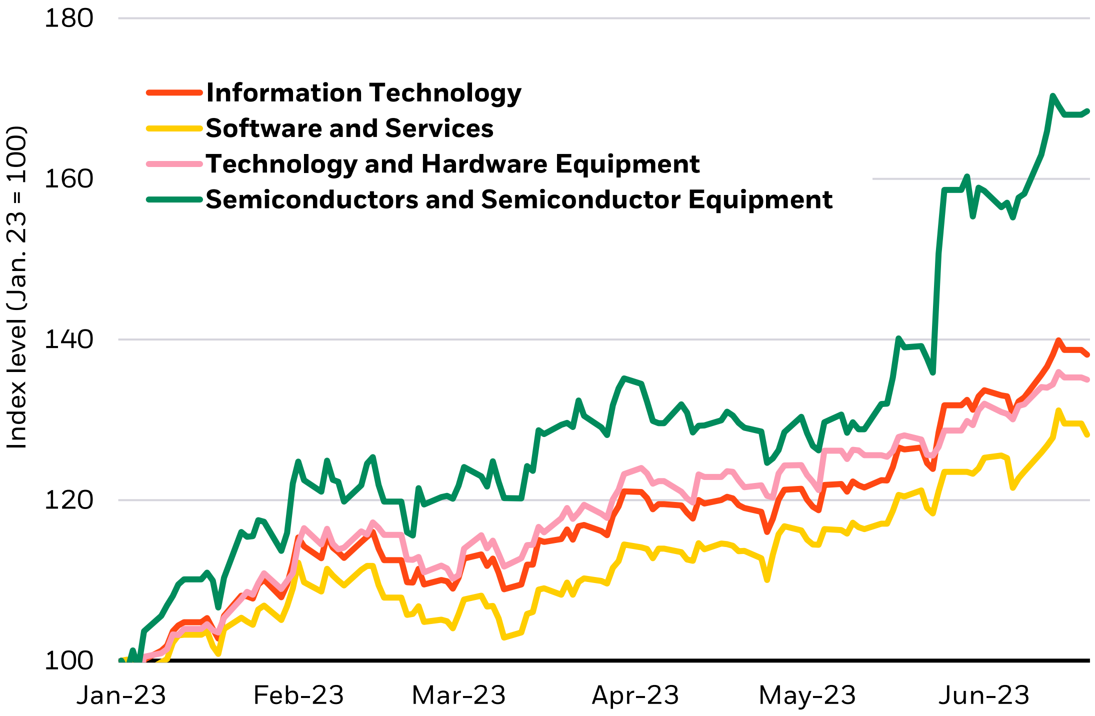
AI has become all the buzz. The mention of AI on company calls has skyrocketed in 2023. Markets have quickly priced the positive impact of AI in IT, but the benefits of AI could extend to other sectors too.

AI mentions on earnings releases and calls, 2004–23



Sources: BlackRock Investment Institute, with data from Bloomberg, June 2023 Notes: The chart shows the three-month rolling sum of mentions of the phrase 'artificial intelligence' in publicly listed company earnings releases or earnings calls with analysts.

U.S. equity industry performance, 2023

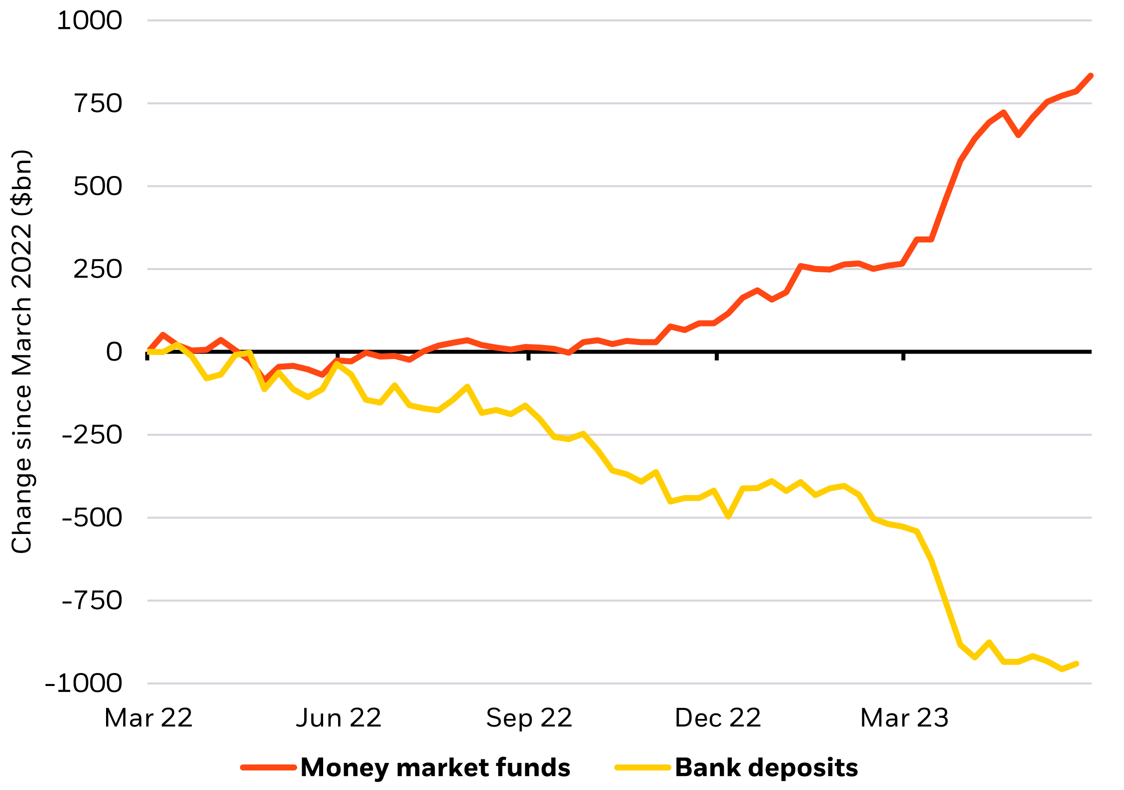


Past performance is not a reliable indicator of current or future returns. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance. Source: BlackRock Investment Institute with data from Refinitiv Datastream, June 2023.. Notes: The chart shows how equity sectors as defined by MSCI have performed since January 2023. The index proxies used are MSCI USA IT, MSCI USA Software and Services, MSCI USA Technology and Hardware Equipment, and MSCI USA Semiconductors and Semiconductor Equipment.

We favor private credit as the future of finance evolves

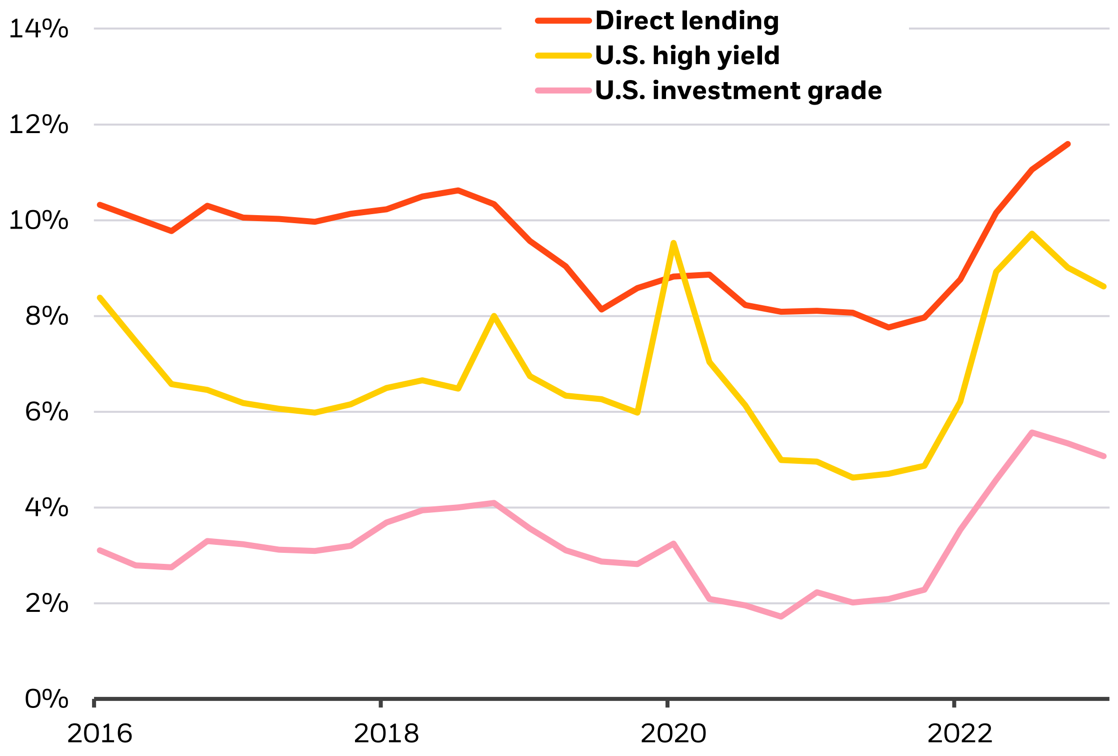
Investors rattled by the banking tumult earlier this year pulled billions of dollars from bank deposits. We prefer private credit – particularly direct lending – over public credit if investors start to grow wary of public credit risk.

U.S. money market & bank deposit flows, 2022–2023



Sources: BlackRock Investment Institute, ICI and U.S. Federal Reserve, with data from Refinitiv Datastream, June 2023. Notes: Orange line shows total U.S. money market funds. The yellow line shows domestic commercial bank deposits.

Private and public credit yields, 2016–2023

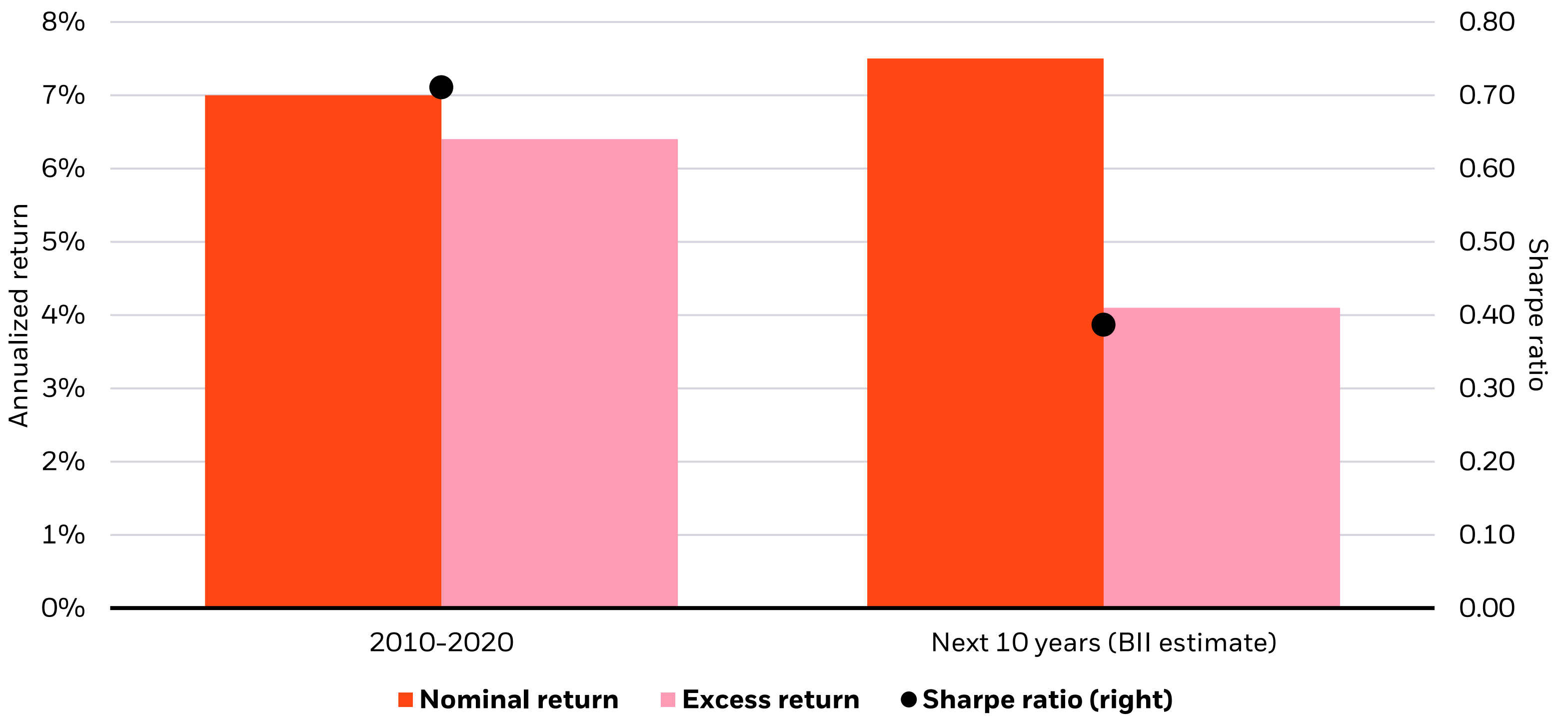


Source: BlackRock Investment Institute, June 2023 with data from Lincoln International and Barclays Live. The chart shows the yields across direct lending, U.S. high yield debt,. U.S. investment grade credit over time. The indexes used are: Lincoln Senior Debt; based on Valuation Data from 2017 – 2022), Bloomberg U.S. Corporate High Yield 2% Issuer Capped Index, and Bloomberg U.S. Credit Index. **Past performance is not a reliable indicator of current or future results. Indexes are unmanaged and do not account for fees. It is not possible to invest directly in an index.**

“Set-and-forget” portfolio not suited for more volatile world

A 60/40 portfolio was an easy, low-risk solution in an era of stable inflation and economic growth as both stocks and bonds rallied over time. The new regime calls for a more nimble approach to strategic allocations, we think.

Hypothetical annualized returns and Sharpe ratio for a hypothetical 60/40 portfolio, actual and estimate

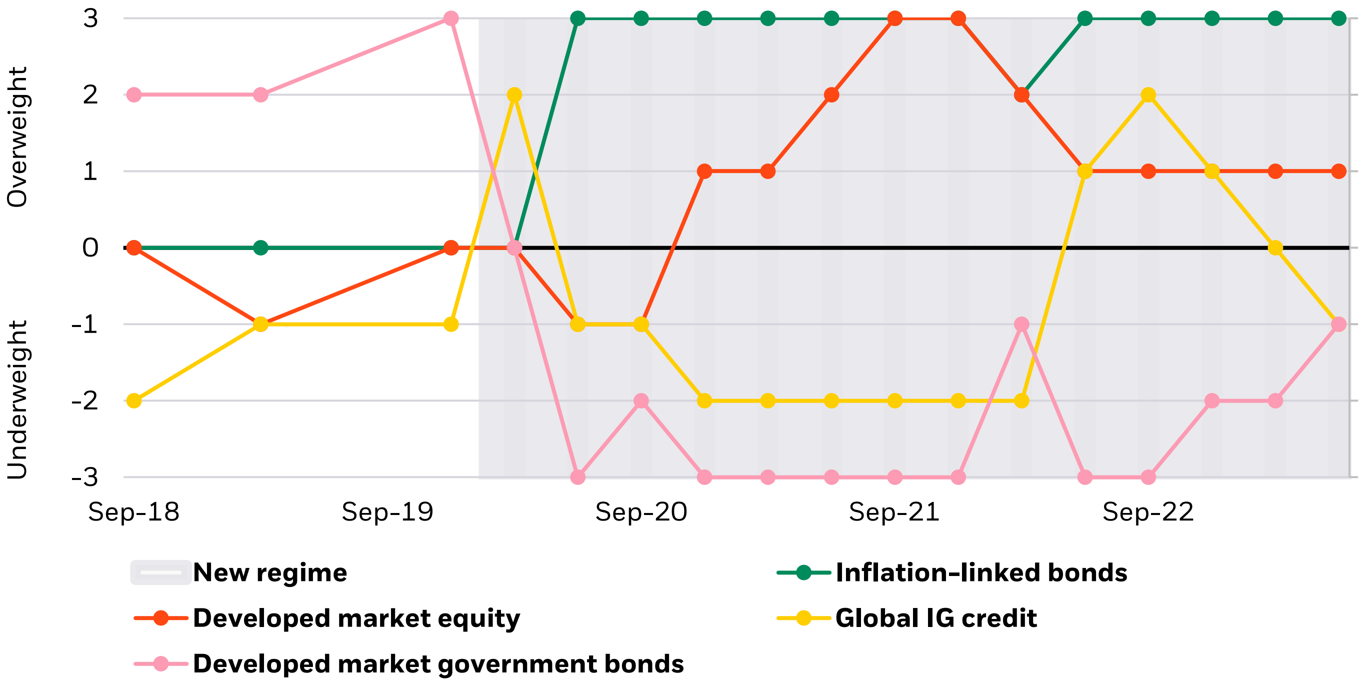


Forward looking estimates may not come to pass. This illustration does not represent an actual portfolio and does not constitute investment advice. The allocation shown above does not represent any existing portfolio, and as such, is not an investible product. The construction of the hypothetical asset allocation is based on criteria applied with the benefit of hindsight and knowledge of factors that may have positively affected it's performance, and cannot account for risk factors that may affect the actual portfolio's performance. Allocation decisions were not made under actual market conditions.. Source: BlackRock Investment Institute with data from Refinitiv Datastream and Morningstar, May 2023. Notes: The chart shows the annualized return and Sharpe ratio (a risk-adjusted measure of return that divides excess return over cash by risk) for a hypothetical 60/40 portfolio, where 60% of the portfolio is invested in public equities and 40% of the portfolio is invested in public fixed income assets like bonds. We use our Capital Market Assumptions to estimate future risk and return for the 60/40 portfolio. The indices used for the traditional 60/40 portfolio are MSCI ACWI and Bloomberg Barclays Global Aggregate. Indexes are unmanaged and do not account for fees. It is not possible to invest directly in an index. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance.

New regime warrants more nimble strategic asset allocation

Structurally higher macro volatility means a worsening risk-return trade-off. But being more dynamic in choosing the portfolio's asset mix offers a better chance to grasp opportunities in the new regime.

Our strategic tilts to select asset classes, 2018–2023



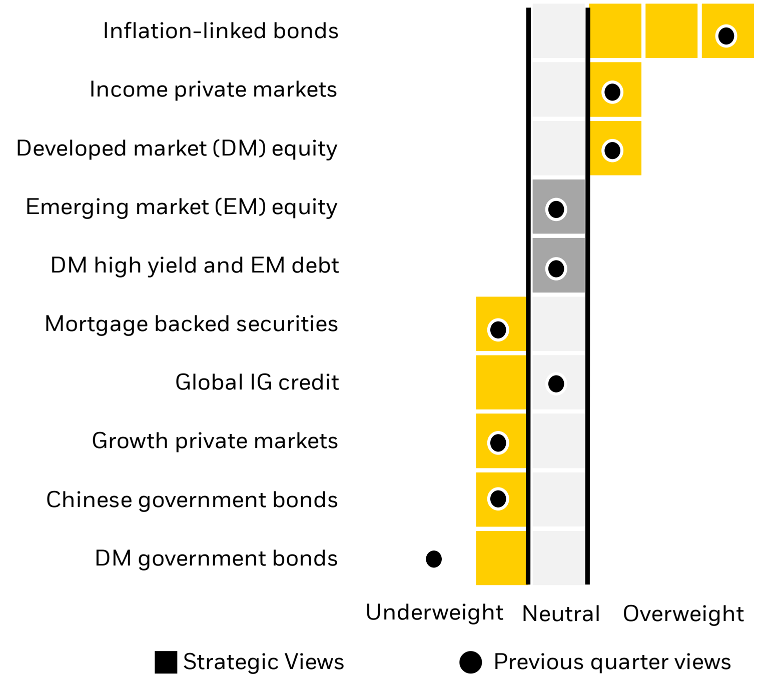
For illustrative purposes only. These do not represent actual portfolios and do not constitute investment advice This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance . Source: BlackRock Investment Institute, August 2023. Notes:.. The chart shows our strategic views for selected asset classes have changed through time, as of 30 June 2023. Global government bonds and EM equity allocations comprise respective China assets. The allocation shown is hypothetical and does not represent a real portfolio. It is intended for information purposes only and does not constitute investment advice. Index proxies for public securities: Bloomberg US Government Inflation-Linked Bond Index, MSCI World US$, Bloomberg US MBS Index, a combination of Bloomberg US Credit, Bloomberg Euro Corporate Credit, Bloomberg UK Corporate Credit indexes for Global IG credit, Bloomberg China Treasury + Policy Bank Total Return Index, and a combination of Bloomberg Treasury 1-10 Yr Index, Bloomberg US Long Treasury Index, Bloomberg Euro Treasury 1-15 Year index, Bloomberg Euro Aggregate Treasury 15 Year+ Index, Bloomberg Sterling Aggregate: Gilts 1-10 Year Index, Bloomberg Sterling Aggregate: Gilts 10+ Year Index and Bloomberg Asia Pacific Japan Treasury Index for DM government bonds. The hypothetical portfolio may differ from those in other jurisdictions, is intended for information purposes only and does not constitute investment advice.

Appendix

Our latest strategic views

We keep our strong overweight to inflation-linked bonds and maintain a modest overweight to developed market (DM) equities. We turn underweight IG credit and see better opportunities for income in short-term government bonds.

Hypothetical U.S. dollar 10-year strategic views vs equilibrium, August 2023



This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance. Source: BlackRock Investment Institute. Data as of 30 June 2023. Notes: The chart shows our asset views on a 10-year view from an unconstrained U.S. dollar perspective against a long-term equilibrium allocation. Global government bonds and EM equity allocations comprise respective China assets. Income private markets comprise infrastructure debt, direct lending, real estate mezzanine debt and U.S. core real estate. Growth private markets comprise global private equity buyouts and infrastructure equity. The allocation shown is hypothetical and does not represent a real portfolio. It is intended for information purposes only and does not constitute investment advice. Index proxies for public securities: Bloomberg US Government Inflation-Linked Bond Index, MSCI World US$, MSCI EM. a combination of the Bloomberg US High Yield, Bloomberg Euro High Yield and JP Morgan EMBI Global Diversified indexes for DM high yield and EM debt. Bloomberg US MBS Index, a combination of Bloomberg US Credit, Bloomberg Euro Corporate Credit, Bloomberg UK Corporate Credit indexes for Global IG credit, Bloomberg China Treasury + Policy Bank Total Return Index, and a combination of Bloomberg Treasury 1-10 Yr Index, Bloomberg US Long Treasury Index, Bloomberg Euro Treasury 1-15 Year index, Bloomberg Euro Aggregate Treasury 15 Year+ Index, Bloomberg Sterling Aggregate: Gilts 1-10 Year Index, Bloomberg Sterling Aggregate: Gilts 10+ Year Index and Bloomberg Asia Pacific Japan Treasury Index for DM government bonds. We use BlackRock proxies for private market assets. The hypothetical portfolio may differ from those in other jurisdictions, is intended for information purposes only and does not constitute investment advice.

Tactical granular views: equities

Six to 12-month tactical views on selected assets vs. broad global asset classes by level of conviction

Equities	View	Commentary
Developed markets		
U.S.	-1	We are underweight the broad market – still our largest portfolio allocation. We don't think earnings expectations reflect the macro damage we expect. We recognize momentum is strong near-term.
Europe	-1	We are underweight. The ECB keeps tightening in a slowdown and the support to growth from lower energy prices is fading.
UK	Neutral	We are neutral. We find that attractive valuations better reflect the weak growth outlook and the Bank of England's sharp rate hikes to deal with sticky inflation.
Japan	Neutral	We are neutral. Bank of Japan policy is still easy, shareholder-friendly reforms are taking root and negative real rates support equities.
Pacific ex-Japan	Neutral	We are neutral. China's restart is losing steam and we don't see valuations compelling enough to turn overweight.
DM AI mega force	+1	We are overweight. We see a multi-country and multi-sector AI-centered investment cycle unfolding set to support revenues and margins.
Emerging markets	+1	We are overweight. We see brighter relative growth trends in EM over DM, valuations remain appealing and EM rates cycles are nearing peaks.
China	+1	China's economic restart is fading, yet low inflation creates space for more policy easing. The bar for upside surprises is low given current valuations. Structural challenges like geopolitical risks persist.

Underweight **Neutral** **Overweight** ● Previous view

Past performance is not a reliable indicator of current or future results. It is not possible to invest directly in an index. Note: Views are from a U.S. dollar perspective. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast or guarantee of future results. This information should not be relied upon as investment advice regarding any particular fund, strategy or security.

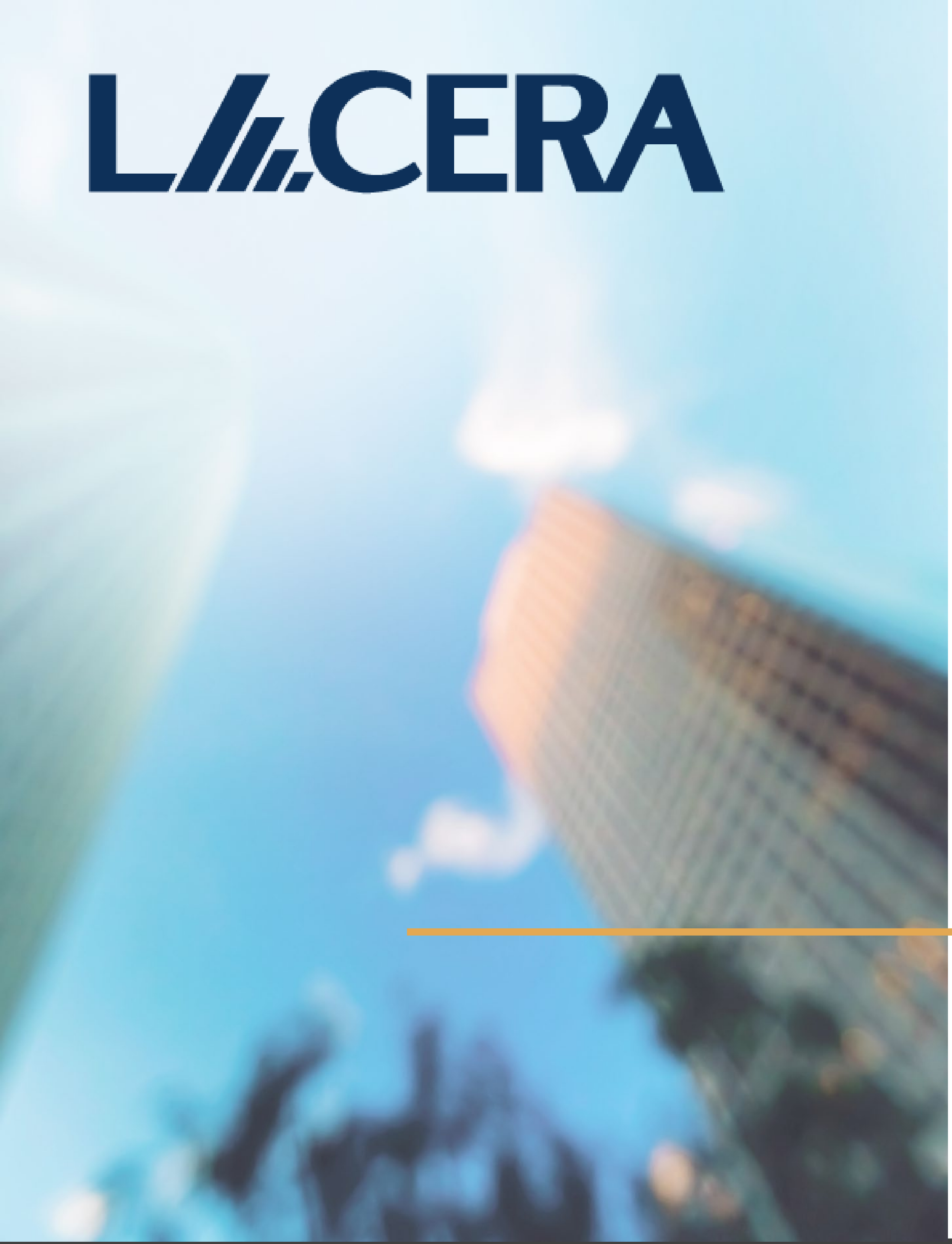
Tactical granular views: fixed income

Six to 12-month tactical views on selected assets vs. broad global asset classes by level of conviction

Fixed income	View	Commentary
Short U.S. Treasuries	+1	We are overweight. We prefer short-term government bonds for income as interest rates stay higher for longer.
Long U.S. Treasuries	-1	We are underweight. We see long-term yields moving up further as investors demand greater term premium.
U.S. inflation-linked bonds	+1	We are overweight and prefer the U.S. over the euro area. We see market pricing underestimating sticky inflation.
Euro area inflation-linked bonds	-1	We prefer the U.S. over the euro area. Markets are pricing higher inflation than in the U.S., even as the European Central Bank has signaled more interest rate hikes ahead.
Euro area govt bonds	Neutral	We are neutral. Market pricing better reflects policy rates staying higher for longer. We see a risk of wider peripheral bond spreads due to tighter financial conditions.
UK gilts	Neutral	We are neutral. We find gilt yields better reflect our expectations for the macro outlook and Bank of England policy.
Japanese govt bonds	-1	We are underweight. We see upside risks to yields from the Bank of Japan winding down its ultra-loose policy.
China govt bonds	Neutral	We are neutral. Bonds are supported by looser policy. Yet we find yields more attractive in short-term DM paper.
Global IG credit	Neutral	We are neutral on tighter credit and financial conditions. We prefer Europe's more attractive valuations over the U.S.
U.S. agency MBS	+1	We're overweight. We see agency MBS as a high-quality exposure within diversified bond allocations.
Global high yield	-1	We are underweight. Spreads do not fully compensate for slower growth and tighter credit conditions we anticipate.
Asia credit	Neutral	We are neutral. We don't find valuations compelling enough to turn more positive.
EM hard currency	+1	We are overweight. We prefer emerging hard currency debt due to higher yields. It is also cushioned from weakening local currencies as EM central banks start to cut policy rates.
EM local currency	Neutral	We are neutral. Yields have fallen closer to U.S. Treasury yields. Plus, central bank rate cuts could put downward pressure on EM currencies, dragging on potential returns.

Underweight **Neutral** **Overweight** ● Previous view

Past performance is not a reliable indicator of current or future results. It is not possible to invest directly in an index. Note: Views are from a U.S. dollar perspective. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast or guarantee of future results. This information should not be relied upon as investment advice regarding any particular fund, strategy or security.



Board and Committee Evaluation

2023 Board of Investments Offsite
September 12, 2023

Board and Committee Evaluation

Tuesday, September 13th – 10:30am – 12:00pm*

Today's Discussion

Session Outline

1. Panel Discussion: *Tim Filla, Aysun Kilic, Imran Zahid – Meketa Investment Group*
    - Governance Items
    - Roles and Responsibilities
    - Areas of Strength
    - Areas of Opportunity

Objectives

- Review Trustee Survey responses
- Facilitate dialogue regarding LACERA governance
- Collect feedback to further Governance Review sessions

*Subject to change

Speaker Biographies

- **MEKETA INVESTMENT GROUP**
  - *Tim Filla, CAIA, CSRIC – Managing Principal, Consultant*
    - Over 20 years of investment management industry experience
    - Serves as a consultant on various defined benefit and health & welfare funds, public funds and non-profits
    - Member of Meketa’s Global Macroeconomic Investment Committee
  - *Aysun Kilic – Managing Principal, Consultant*
    - Has been in the financial services industry since 2003
    - Serves as a consultant to both non-discretionary and OCIO/discretionary clients
  - *Imran Zahid – Vice President, Senior Investment Analyst*
    - Over 19 years of experience in the investment consulting industry
    - Serves as a senior investment analyst on various defined benefit and health & welfare funds, with Taft Hartley, non-profit, and public plan sponsors

MEKETA
CELEBRATING A MILESTONE | 45 YEARS

Los Angeles County Employees Retirement Association

September 2023

Board and Committee Evaluation

Background

→ LACERA's Board of Investments requested that Meketa conduct a Governance Review.

→ In July, Meketa provided a Governance Review Introduction to highlight:

- The importance of governance for a pension fund's investments
- Key characteristics of a strong governance program
- The evolution of LACERA as an investment organization with a focus on LACERA's strategic plan of "Towards Best-In-Class Investor"

→ Meketa provided the following workplan for the Governance Review:

- ~~July: Governance Review Introduction, Trustee Assessment Survey~~
- ~~August: Overview of Pension Governance Models~~
- September Board Offsite: Board and Committee Evaluation
- October: Peer Group Plan Review
- November: Discussion of findings and potential governance enhancements

Introduction

→ The goal of this presentation is to facilitate dialogue about LACERA governance by reviewing the responses from the Trustee Assessment Survey.

→ The presentation is structured to align with the survey:

- Governance Items – Current Effectiveness and Relative Importance
- Roles and Responsibilities – Current Effectiveness, Relative Importance and Time Allocation

→ The remainder of the presentation is organized into the following sections:

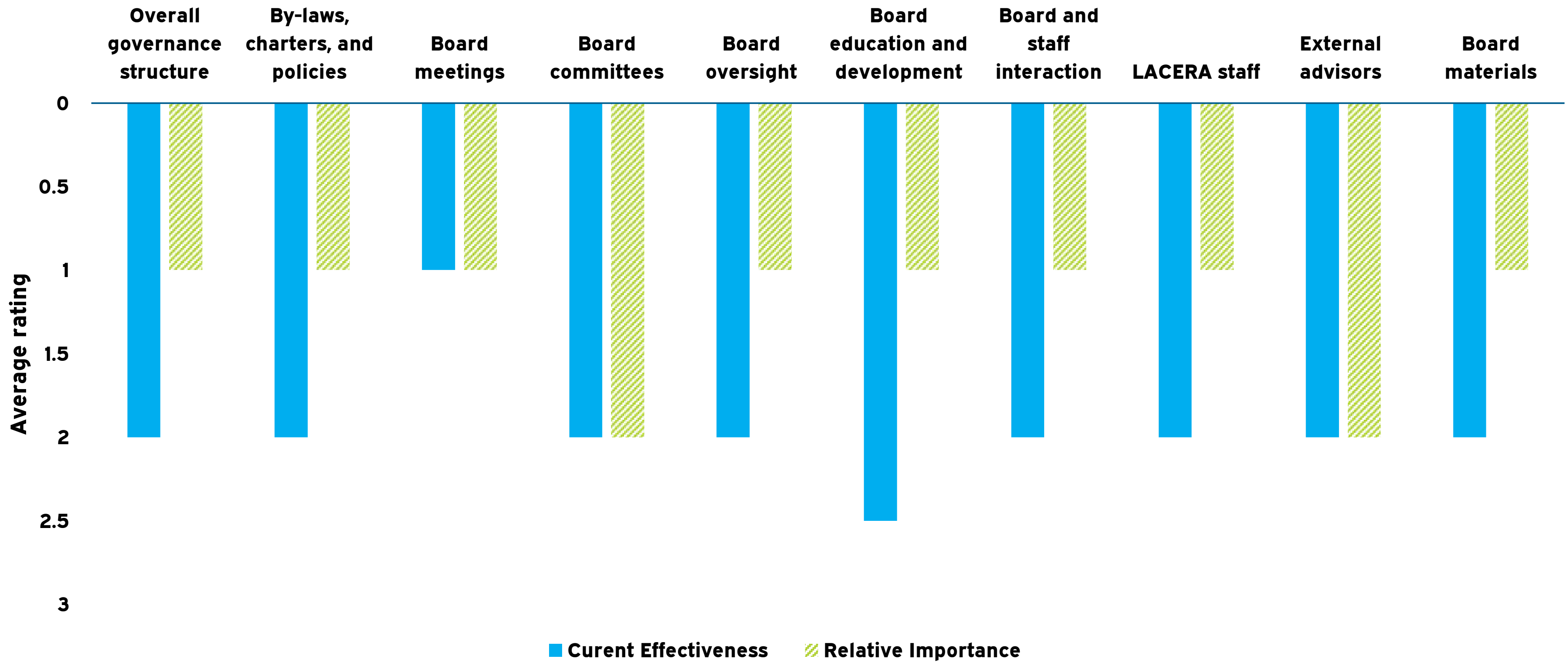
- High level overview of the results
- Review of each question and the responses
- Discussion of written responses
- Summary

→ Governance is not an area where a one-size-fits-all approach works and Trustees will have some areas of strong agreement, but also some differing perspectives.

→ The overall discussion is intended to assist the Board of Investments in assessing and adopting a governance framework that best fits LACERA.

BOI Governance

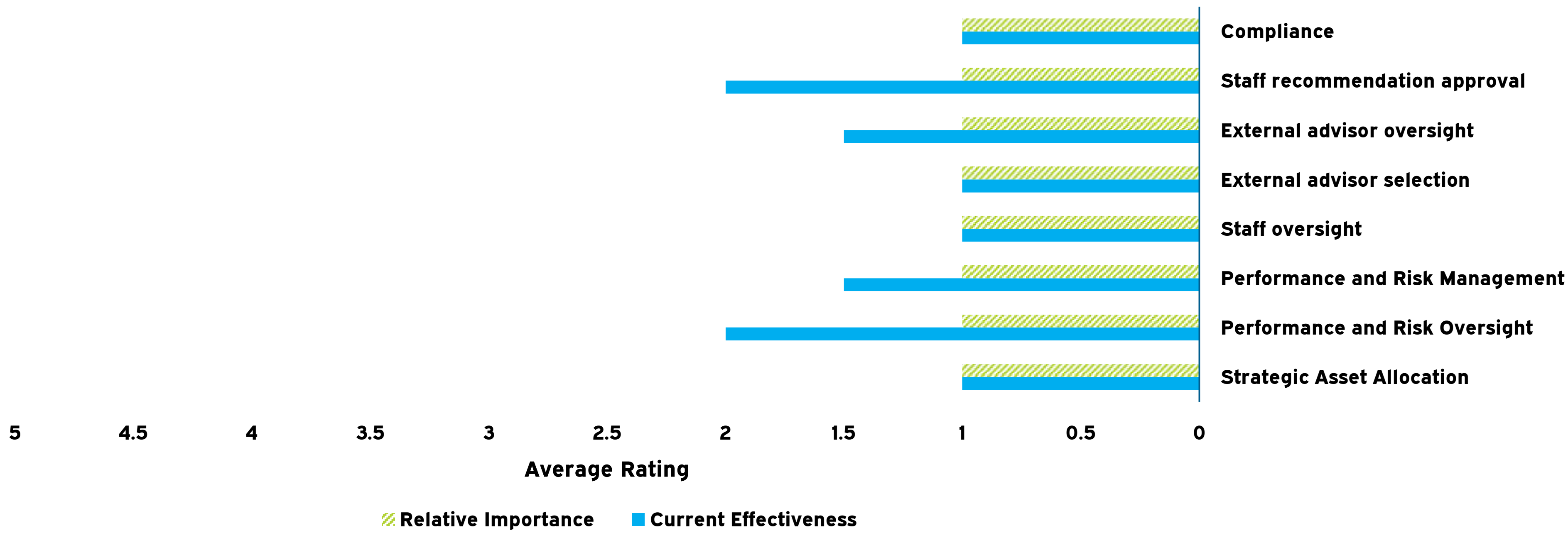
Trustees were asked to rate the current effectiveness (1 being most effective, 5 being least) and relative importance (1 being most and 3 being least) of the following categories.



→ Based on the self-assessment results, the current effectiveness of the Board education and development was ranked as the main area where there is room for improvement.

Roles and Responsibilities

Trustees were asked to rate the following roles and responsibilities, and their current effectiveness (1 being most effective and 5 being least) and relative importance (1 being most important, 3 being least).

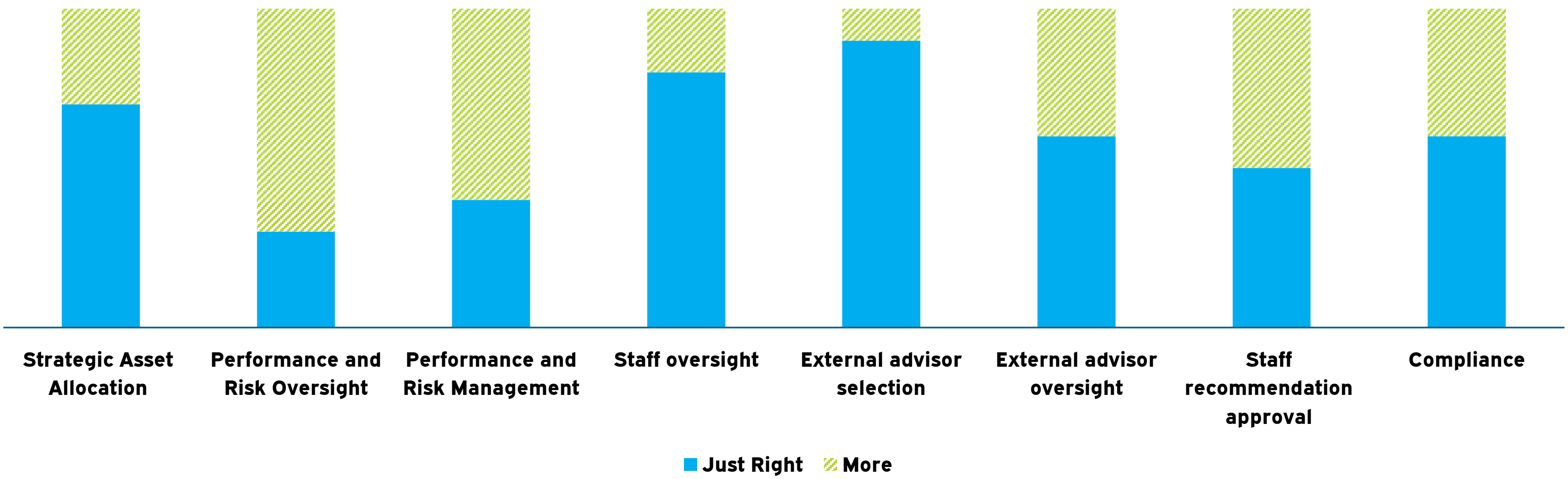


→ Current effectiveness was ranked high for most categories with staff recommendation approval and performance and risk oversight receiving slightly lower but still very good overall scores.

→ Relative importance was ranked the same for all of the categories.

Time Allocation

Trustees were asked if they would like less time, more time or the same amount of time (just right) spent on the following areas.

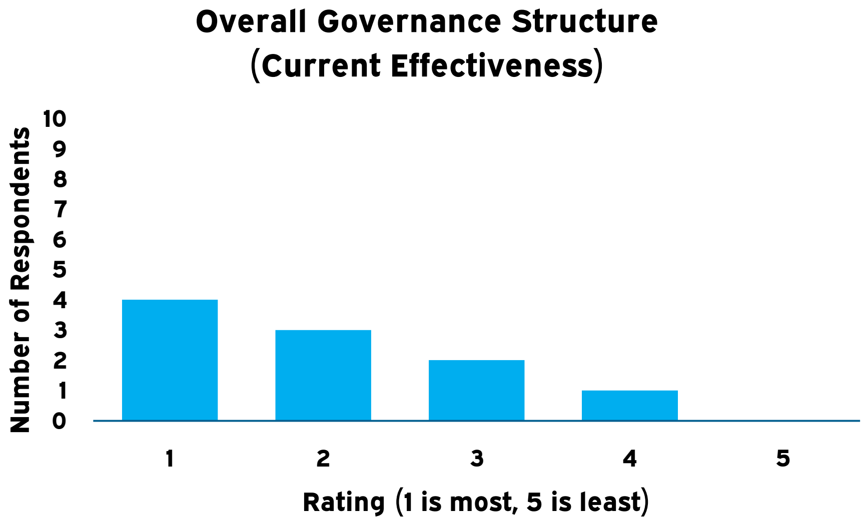


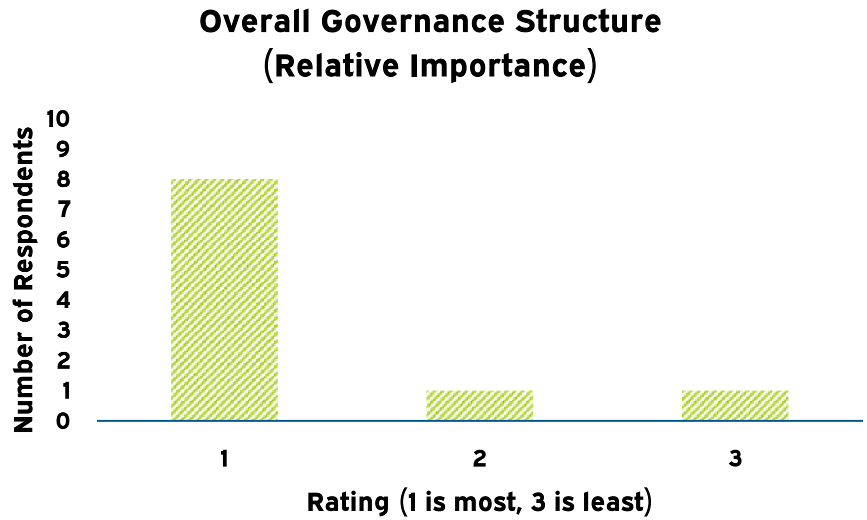
→ Trustees indicated that more time should be spent on performance and risk oversight, performance and risk management, and to a lesser extent staff recommendation approval.

→ Trustees generally expressed that the right amount of time is being spent on staff oversight, external advisor oversight and strategic asset allocation.

Overall Governance Structure

For the following pages, Trustees were asked to rate the current effectiveness (1 being most effective and 5 being least) and relative importance (1 being most important and 3 being least) of the category listed.

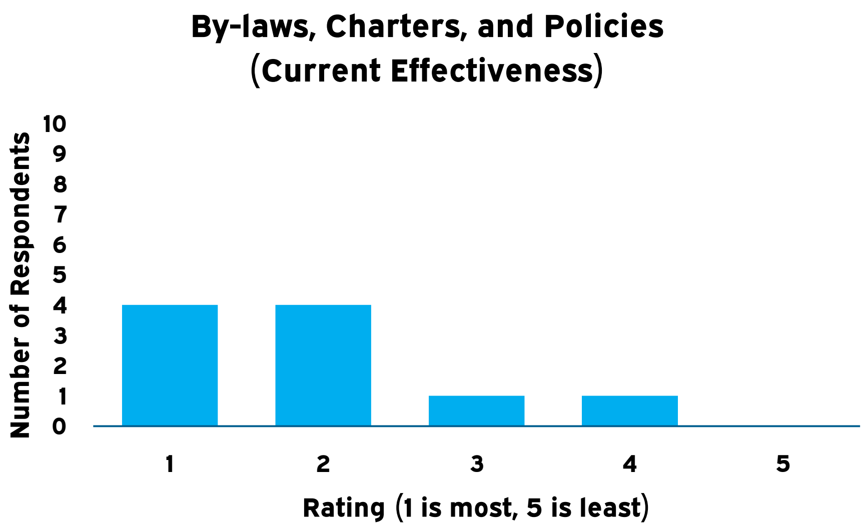


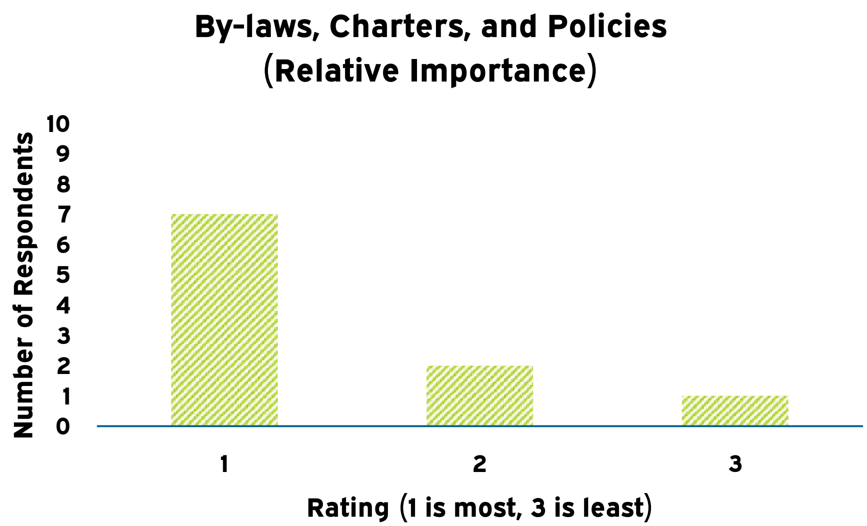


→ Most Trustees believe LACERA's governance structure is effective, while two respondents voted it was average quality, and one ranked it towards the bottom half of the survey.

→ Trustees rated the relative importance of governance at the highest level.

By-Laws, Charters and Policies

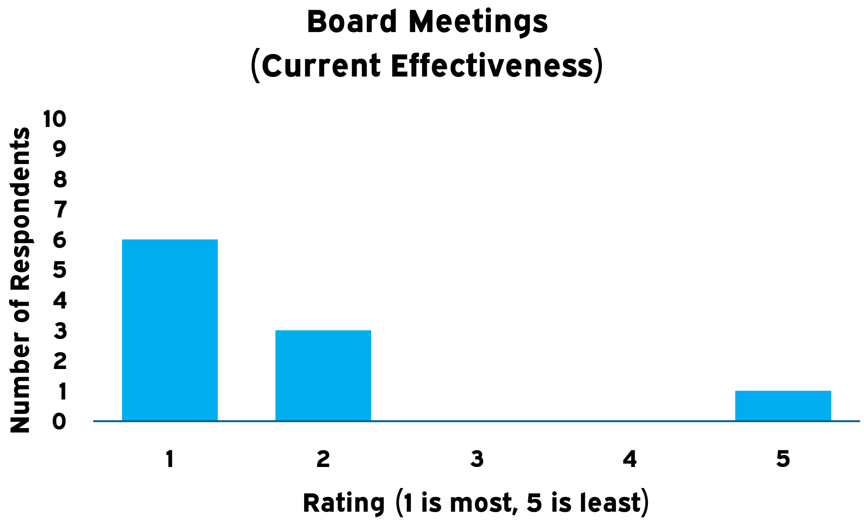


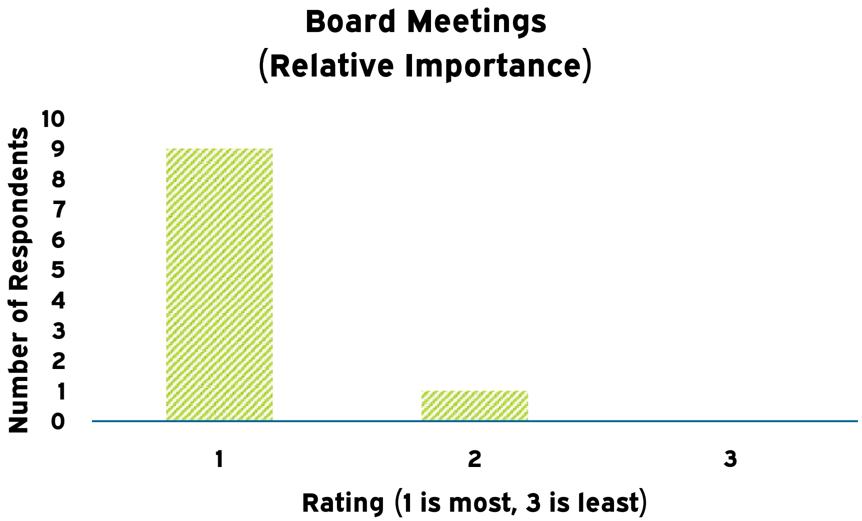


→ Most Trustees believe LACERA's By-laws, charters, and policies are effective while two responses came in suggesting they were average or below.

→ Trustees rated the relative importance of By-laws, charters, and policies at the highest level.

Board Meetings

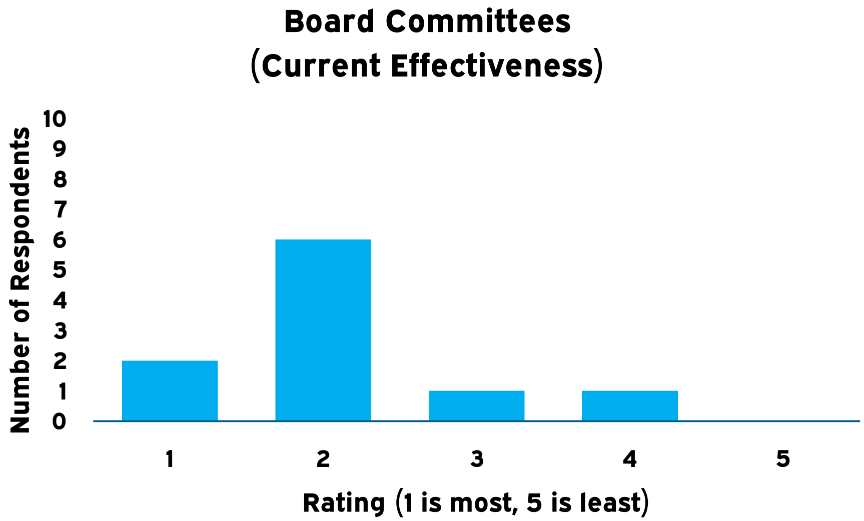


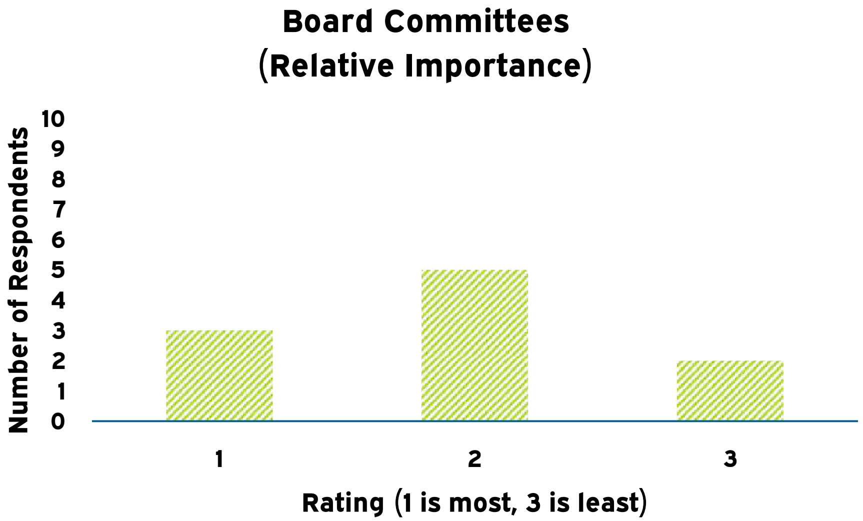


→ Most Trustees believe LACERA's Board meetings are effective, while one response came in suggesting more work is needed here.

→ Trustees rated the relative importance of Bord Meetings at the highest level.

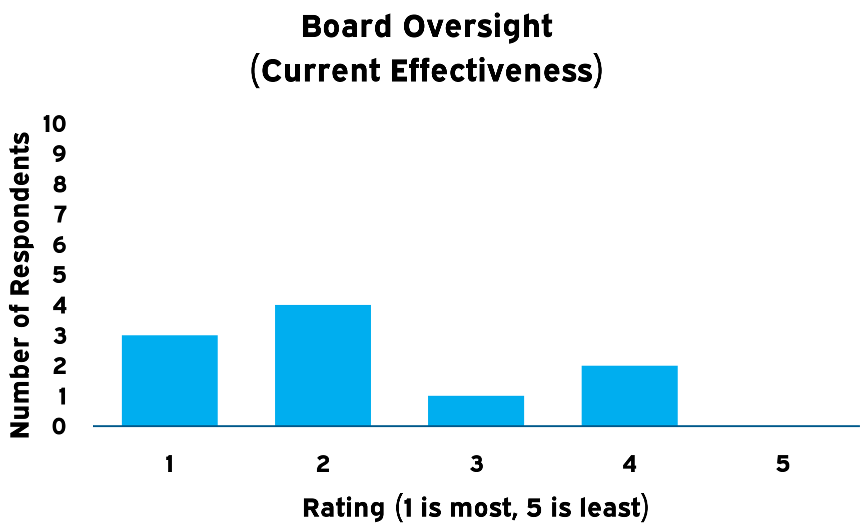
Board Committees

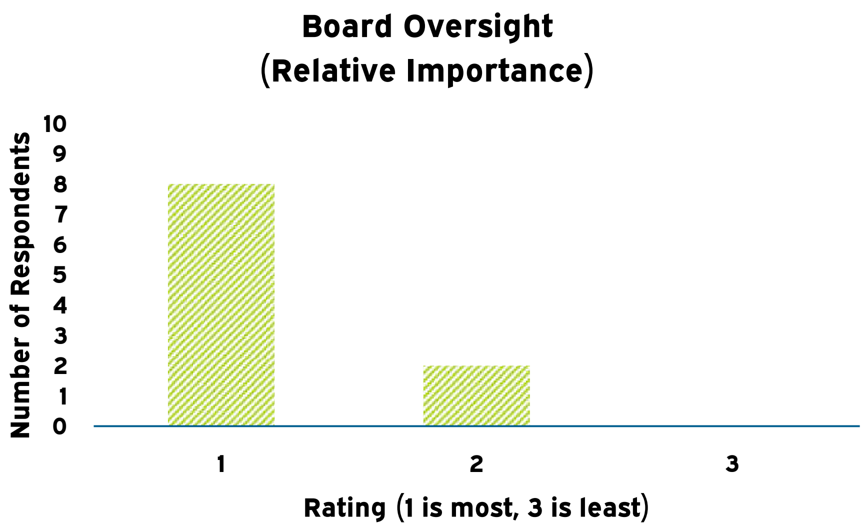




- → Most Trustees believe LACERA's Board committees are effective, while two responses came in suggesting the effectiveness was average or below.
- → The Trustees had split views regarding the importance of committees with 50% believing committees are moderately important.

Board Oversight

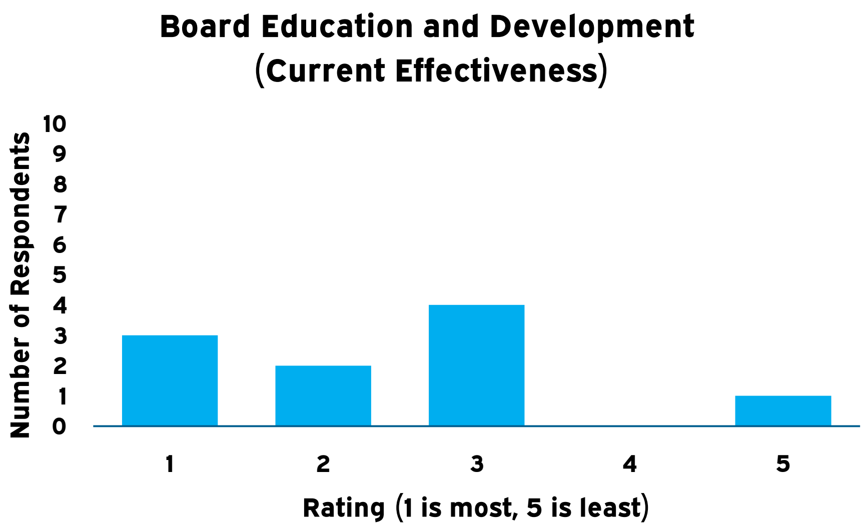


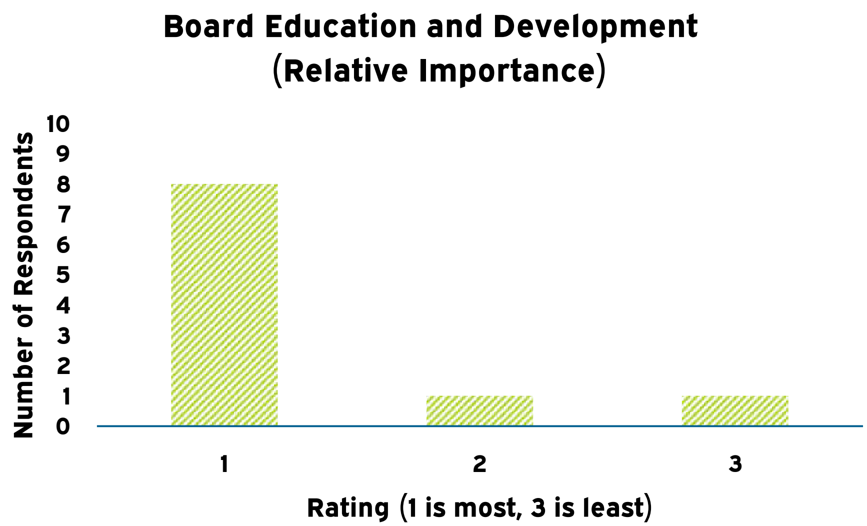


→ Most Trustees believe LACERA's board oversight is effective, while two respondents suggested more work may be needed here.

→ Trustees rated the relative importance of board oversight at the highest level.

Board Education and Development

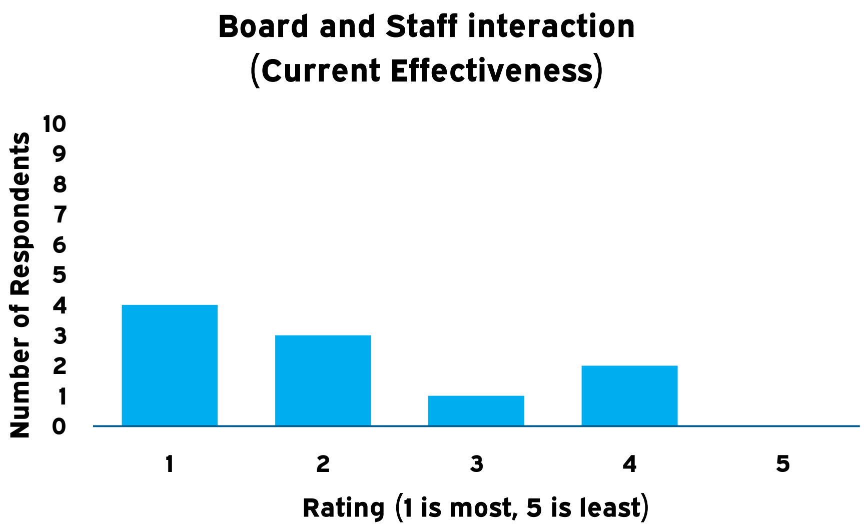


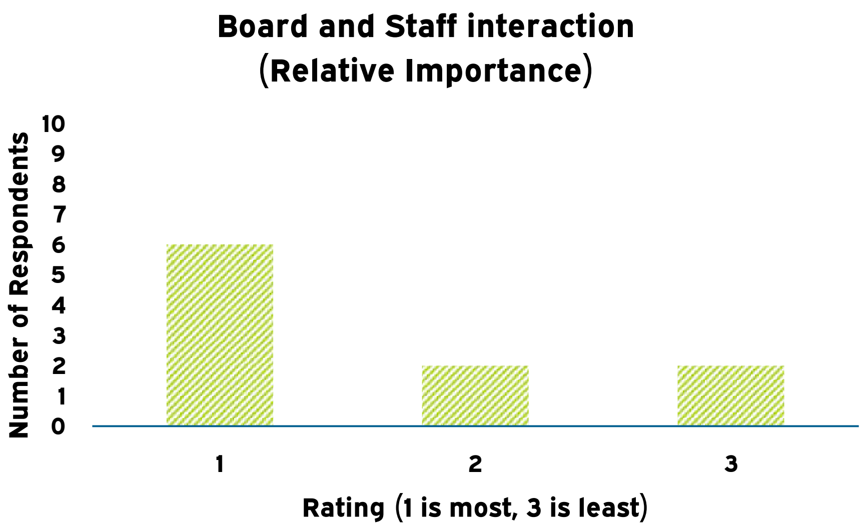


→ Half of the Trustees believe LACERA's Board education and development is effective, while the other half identified this as an area for improvement.

→ Trustees rated the relative importance of Board education and development at the highest level.

Board and Staff Interaction

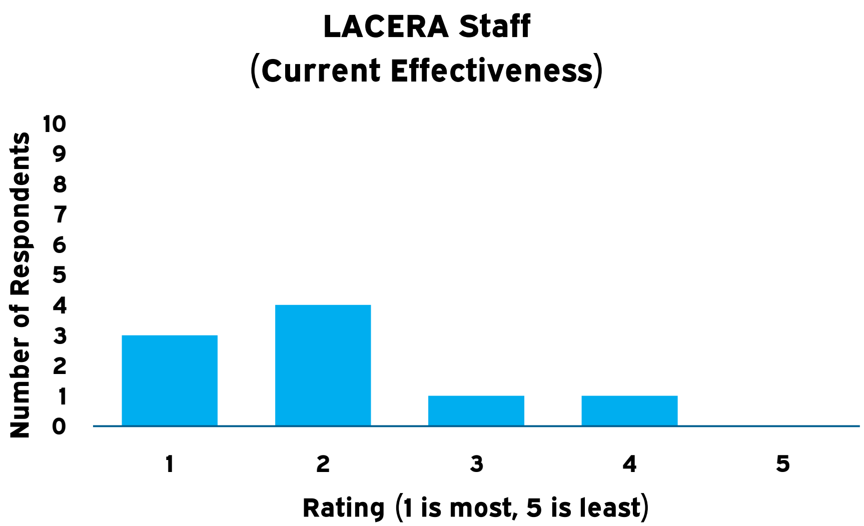


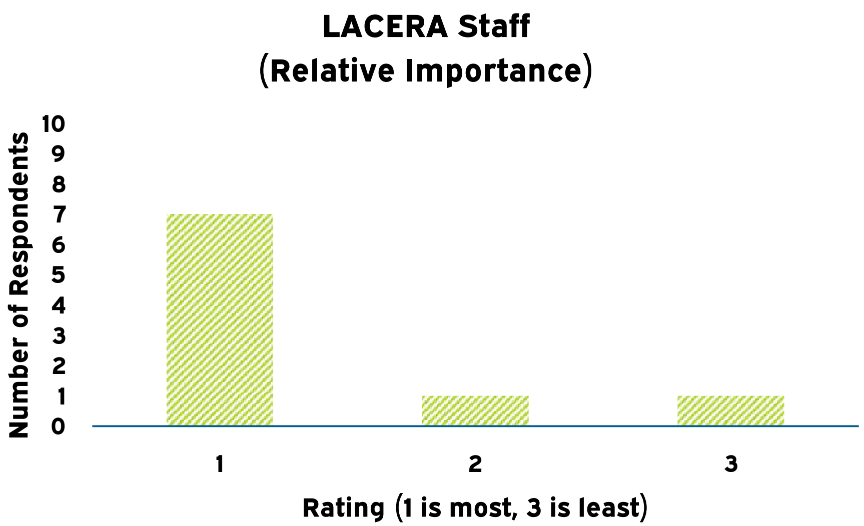


→ Most Trustees believe LACERA's Board and staff interaction is effective, while three respondents felt it was either average or more work may be needed here.

→ Majority of Trustees rated the relative importance of board and staff interaction at the highest level, while two of the respondents marked this as a low relative importance item.

LACERA Staff

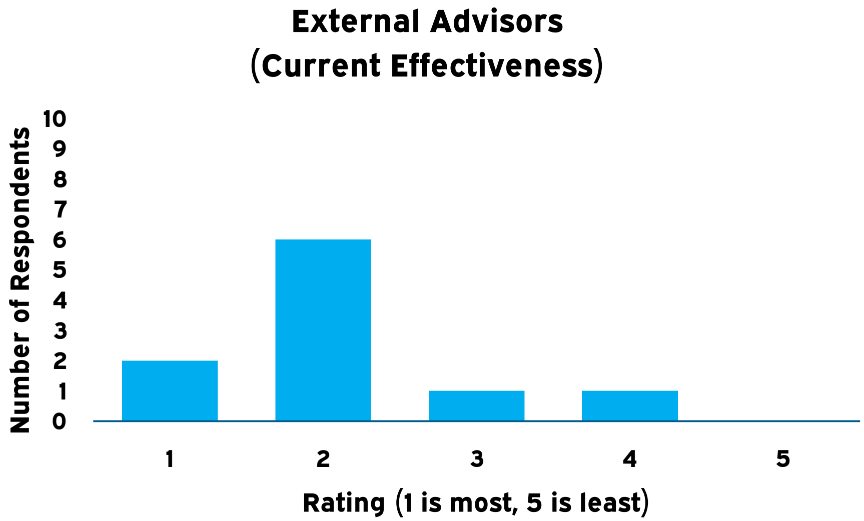


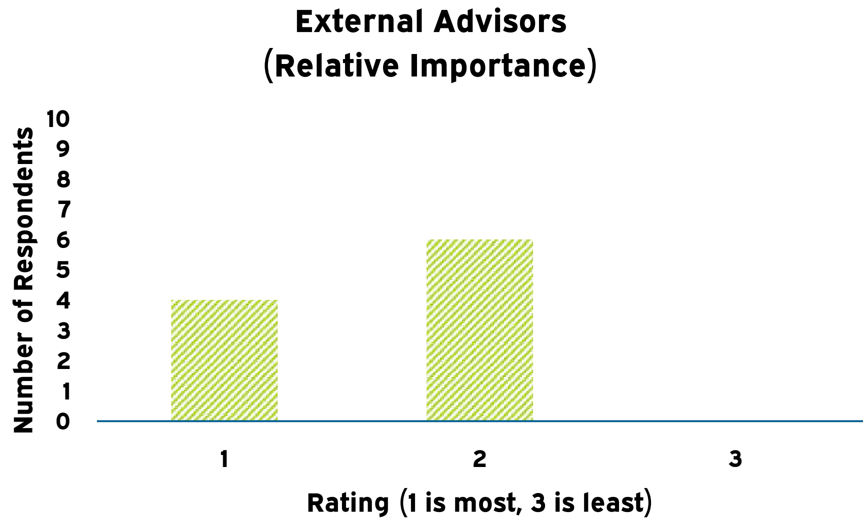


→ Most Trustees believe LACERA's staff is effective, while two respondents suggested the effectiveness was either average or just below.

→ Trustees rated the relative importance of LACERA staff at the highest level.

External Advisors

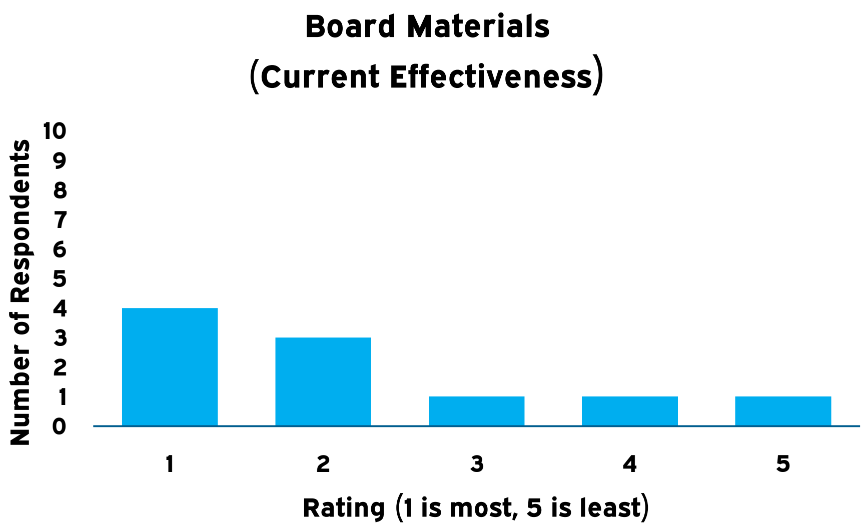


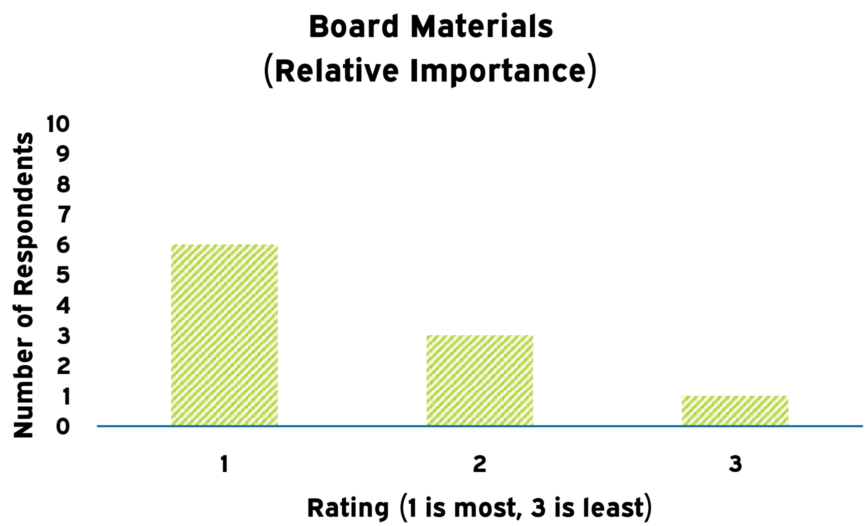


→ Most Trustees believe External advisors are effective, while two respondents gave average or just below average marks.

→ Trustees rated the relative importance of external advisors between a moderate and high level.

Board Materials

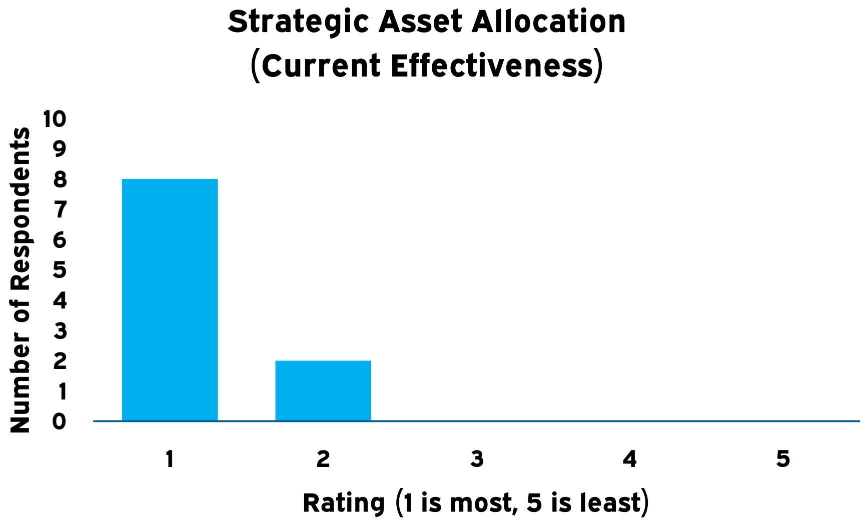


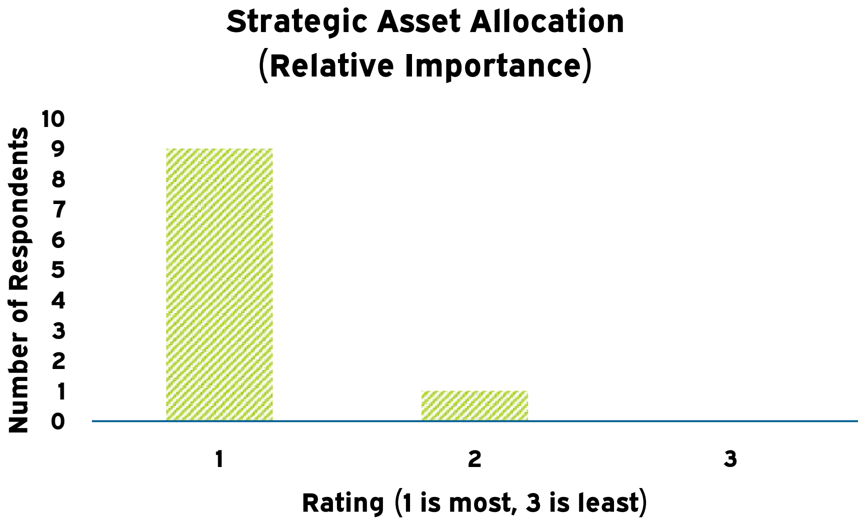


→ 60% of Trustees believe LACERA's board materials are effective, 20% view them as either average or just below, while 10% identified this category as an area of opportunity.

→ Most Trustees rated the relative importance of board materials at a high level or moderate level.

Strategic Asset Allocation



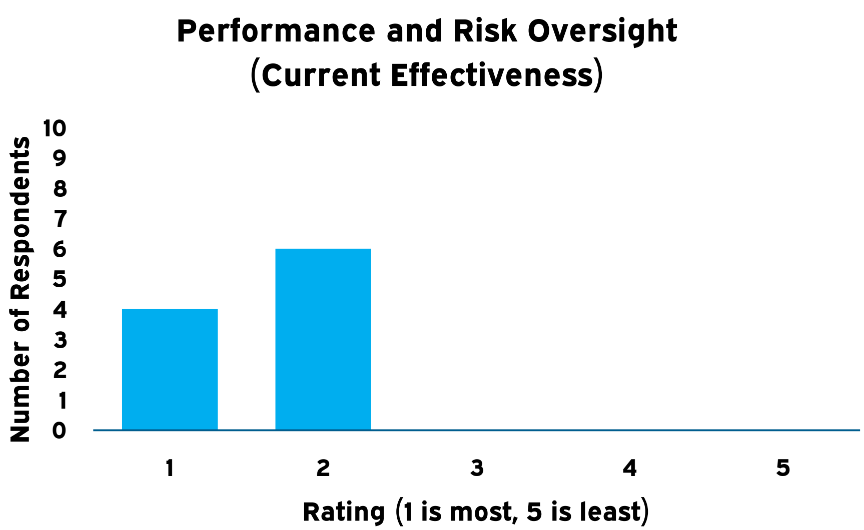


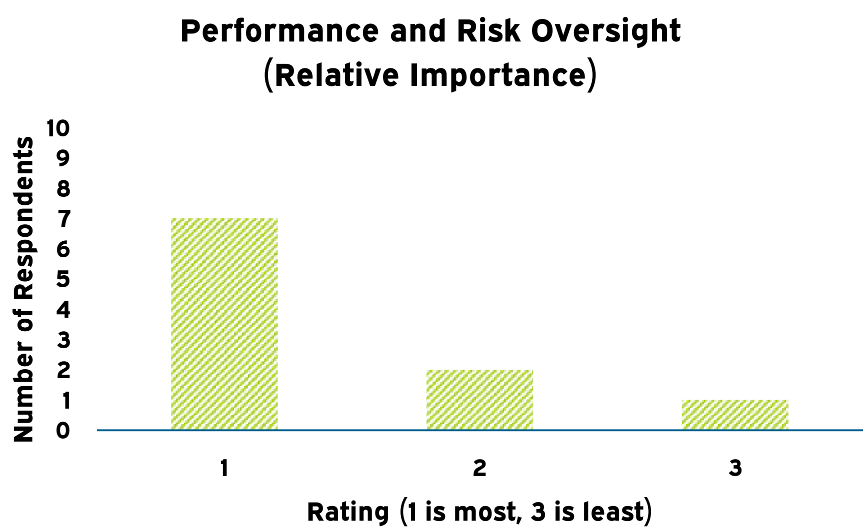
→ Most Trustees believe LACERA's Strategic Asset Allocation is effective.

→ Trustees rated the importance of Strategic Asset Allocation at the highest level.

→ 70% of Trustees believe the time allocated to SAA is just right, but 30% believe more time should be devoted to SAA.

Performance and Risk Oversight



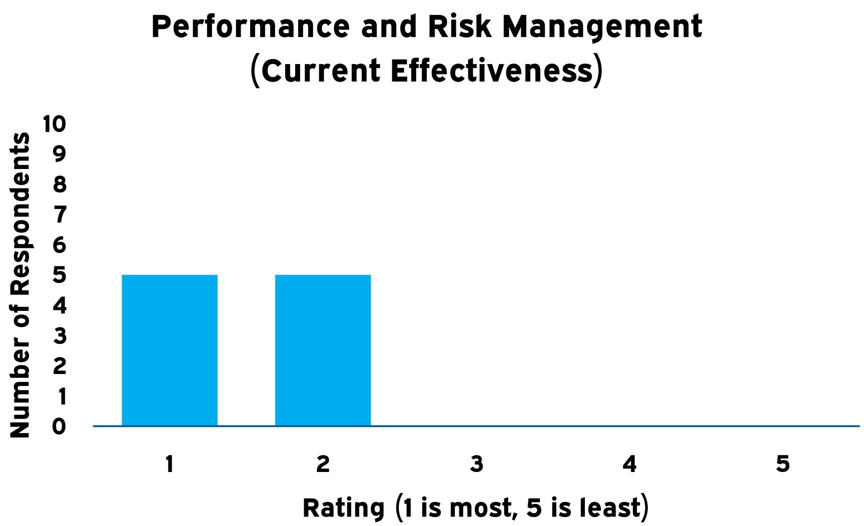


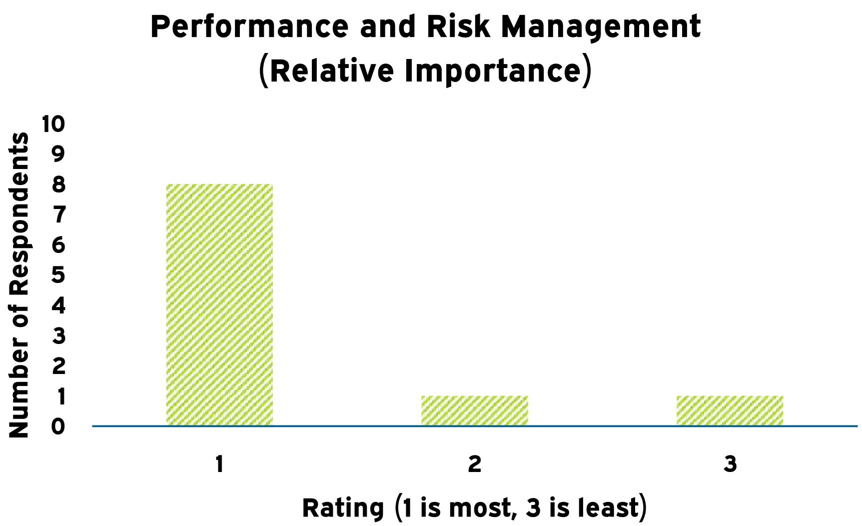
→ Most Trustees believe LACERA's performance and risk oversight is effective.

→ Most Trustees rated the relative importance of performance and risk oversight at the highest level, while one response suggested this was a low relative importance item.

→ 70% of Trustees would like to spend more time on performance and risk oversight.

Performance and Risk Management



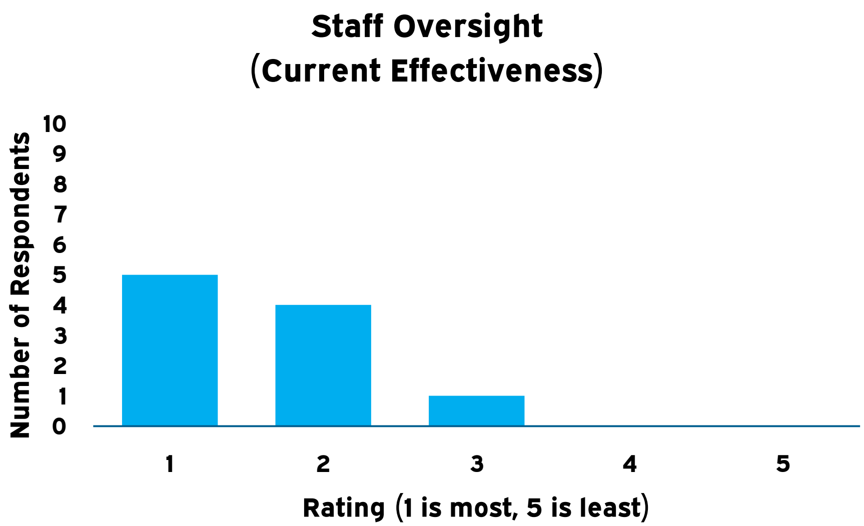


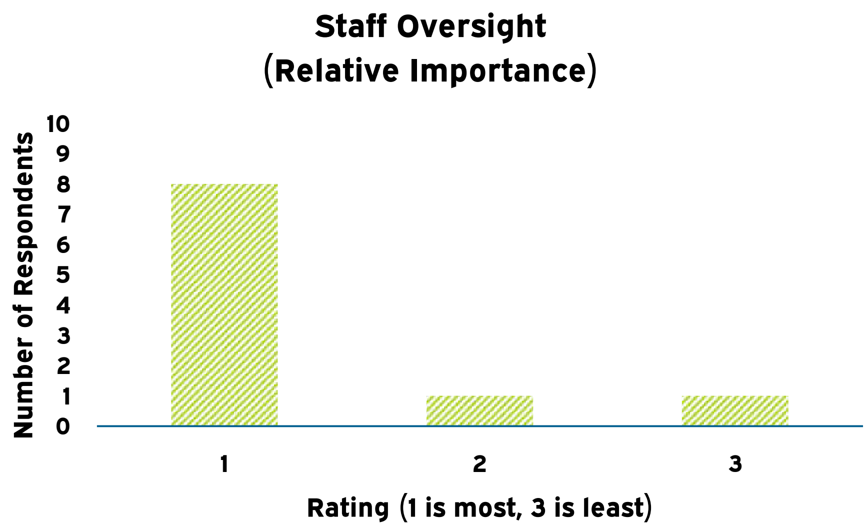
→ Most Trustees believe LACERA's performance and risk management is effective.

→ Most Trustees rated the importance of performance and risk management at the highest level, while one response suggested this was a low relative importance item.

→ 60% of Trustees would like more time focused on performance and risk management.

Staff Oversight



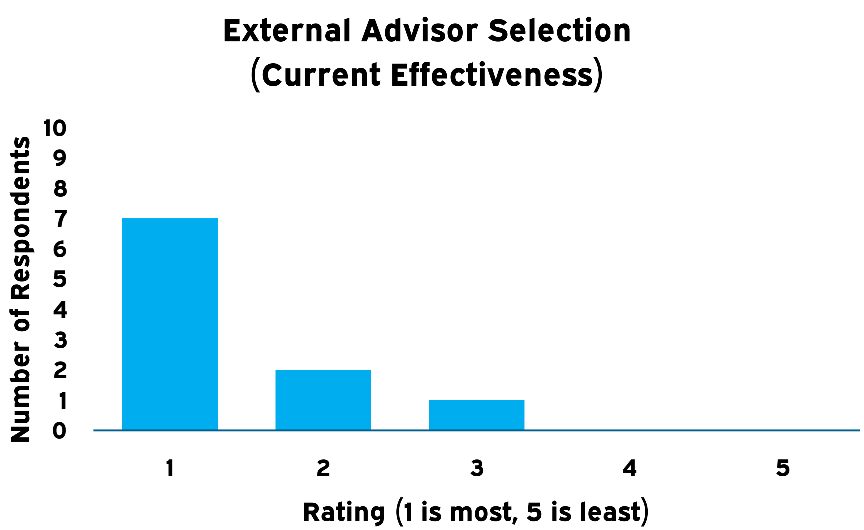


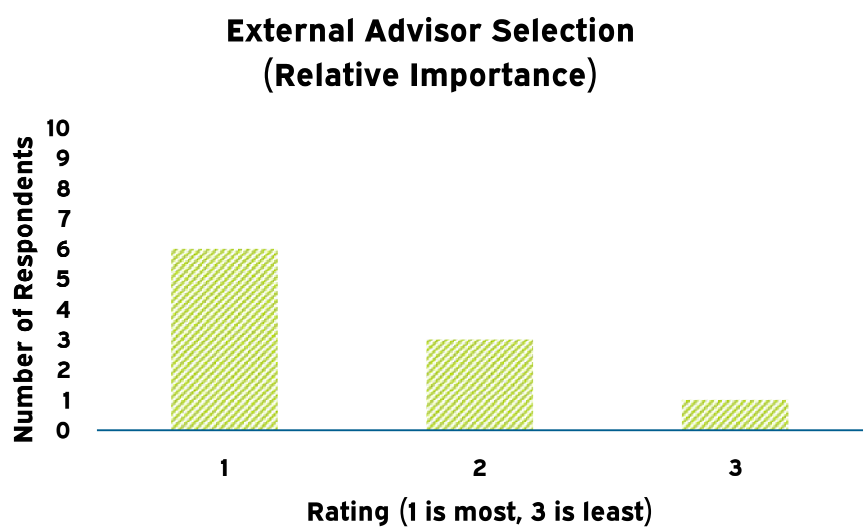
→ Most Trustees believe LACERA's staff oversight is effective, while one response suggested it was average.

→ Most Trustees rated the importance of staff oversight at the highest level, while one response suggested this was a low relative importance item.

→ A strong majority of Trustees believe the amount of time allocated to staff oversight is just right.

External Advisor Selection



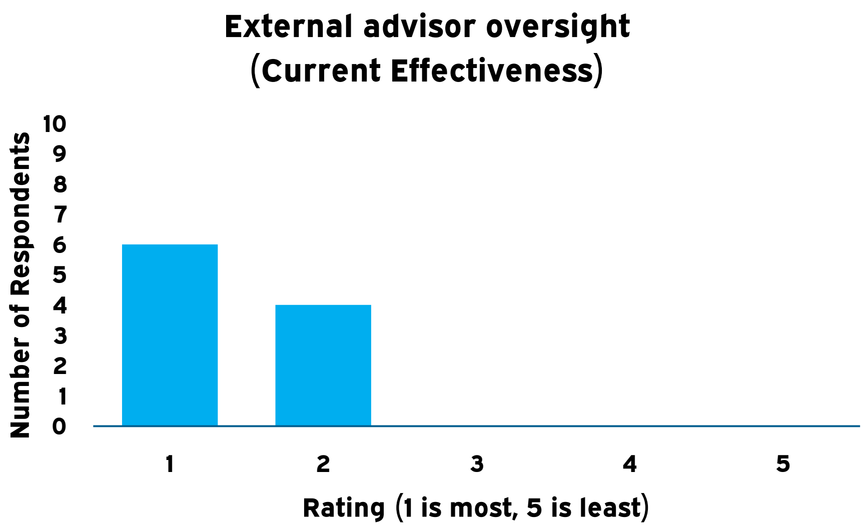


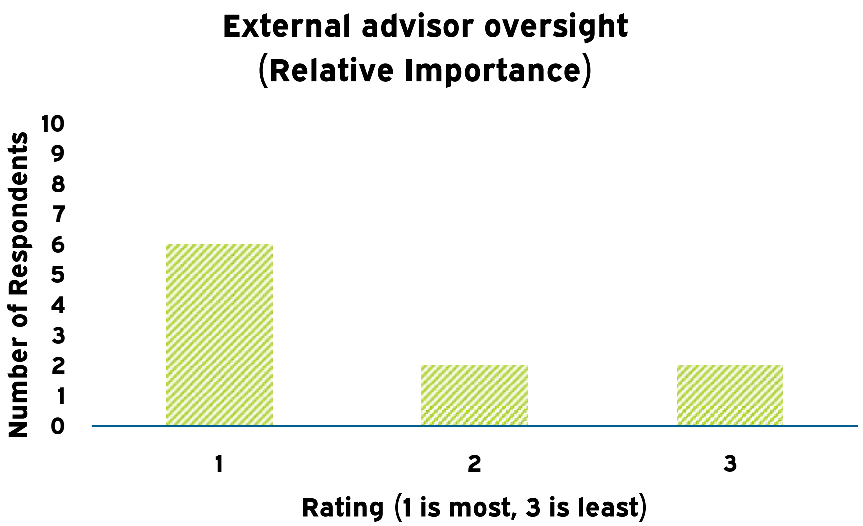
→ Most Trustees believe LACERA's external advisor selection is effective, while one response suggested it was average.

→ 60% of Trustees rated the importance of external advisor selection at the highest level, while 10% ranked it as a low relative importance item.

→ Nearly all (90%) of Trustees believe that an appropriate amount of time is utilized for external advisor selection.

External Advisor Oversight



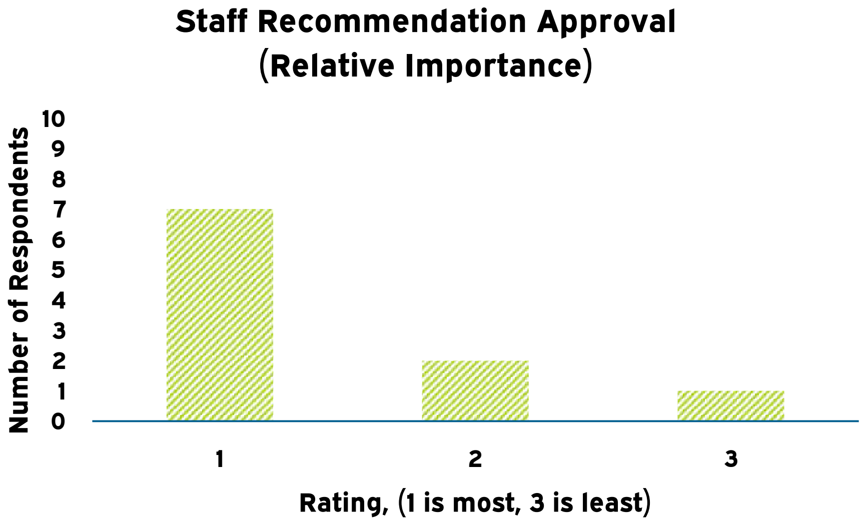


→ Most Trustees believe LACERA's external advisor oversight is effective.

→ 60% of Trustees rated the importance of external advisor oversight at the highest level, while 20% rated this as a low relative importance item.

→ While most Trustees believe the time allocated to external advisor oversight is just right, 40% believe more time should be spent in this area.

Staff Recommendation Approval

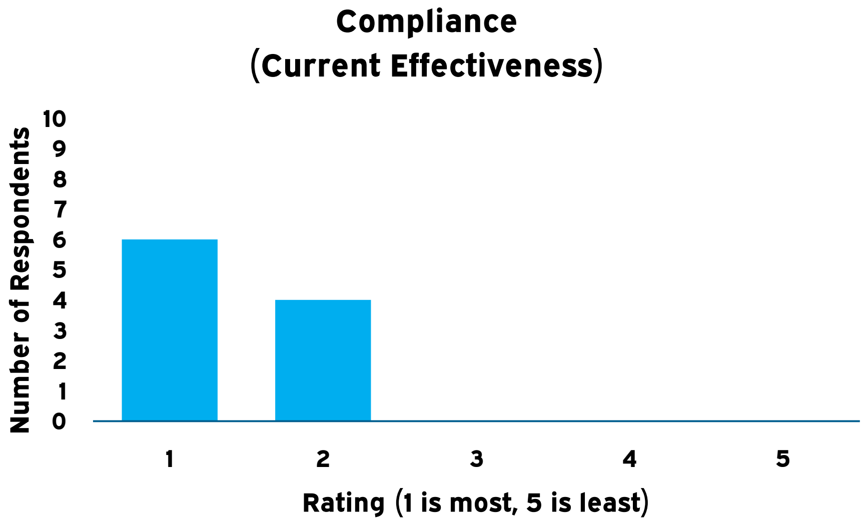


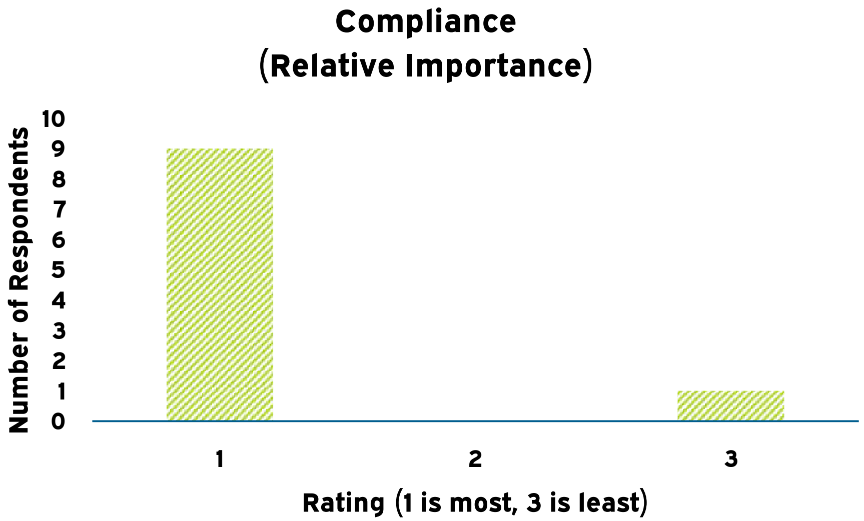
→ Most Trustees believe LACERA's staff recommendation approval is effective.

→ 70% of Trustees rated the relative importance of staff recommendation approval at the highest level while 10% rated it as a low relative importance item.

→ An even mix of Trustees voted for more and just right.

Compliance





→ Most Trustees believe LACERA's compliance is effective.

→ 90% of Trustees rated relative importance of compliance at the highest level, while 10% ranked it as a low relative importance item.

→ A majority of Trustees believe that the right amount of time is spent on compliance, but 40% believe more time should be allocated to compliance.

Areas Identified as Strengths of LACERA

→ The excellent work of our staff has improved ESG and DEI issues.

→ Investment staff are top notch. Excellent legal support.

→ CEO, CIO & senior leadership team.

→ Diversity of thought, experiences, and commitment to the members.

→ Strategic asset allocation, and performance and risk management.

→ The education and development available to Trustee's is number one, board materials are very thorough and detailed five star, the asset allocation has proven to be beneficial.

→ Strengths include information gathering, research and effective communications to the trustees. Staff's efforts have been great, as well as the attention to detail.

→ Diverse backgrounds of board members. Opportunities for education and learning are great. Strong, knowledgeable and professional staff who is also very responsive and supportive. Board members are very collegial.

→ I believe that LACERA is moving in the right direction with regard to staff development, responsibilities and oversight.

Areas of Opportunity Identified

→ Staff Recruitment. Better coordination between Boards.

→ General administration is poor. Not all managers manage very well, and there is a tendency to not hold management staff accountable for poor performance.

→ Timely staff recruitment and development.

→ Onboarding of new trustees. Better engagement strategies and utilization of PR firm related to investments with significant public exposure or scrutiny.

→ Reviewing and approving staff recommendation, more trustee training.

→ It is my understanding after discussions with staff there are some ambiguities in LACERA's joint governance policies. I would also like to get more feedback/input from the outside advisors on a more consistent basis.

→ Communication to our membership can be done in a more cost-effective manner (i.e., email and SMS communication).

→ LACERA does great in providing outside training/educational opportunities, but I think we are missing an opportunity for "in-house" learning for board members. We should use our wealth of internal expertise to provide education/training for members who want it. Secondarily, this might be moot because we might go over this during the retreat but giving more historical analysis and information both for special situations that happened in the overall market AND situations/circumstances LACERA and this board has faced such as certain board controversies and real estate dealings.

→ I believe that the LACERA Board must do more to govern itself and to create accountability and proper incentives for staff.

Other Areas of Governance Trustees Would Like Discussed

→ Delegation of authority, General Consultant and asset consultant and role of the trustee orientation.

→ We need trustee self-evaluations and a consolidated board evaluation. It is so easy to do; I don't know why we haven’t done it.

→ Role of Board leadership, including the Chair. At what points are the Board chairs privy to information that is not shared with other trustees until an upcoming Board meeting? We are all trustees with equal responsibilities, impact, and accountability.

→ This survey should have been more user friendly.

Summary

→ The Trustee Assessment Survey showed that overall Trustees believe LACERA's current governance is effective, but that there may be some areas for evolution and reinforcement.

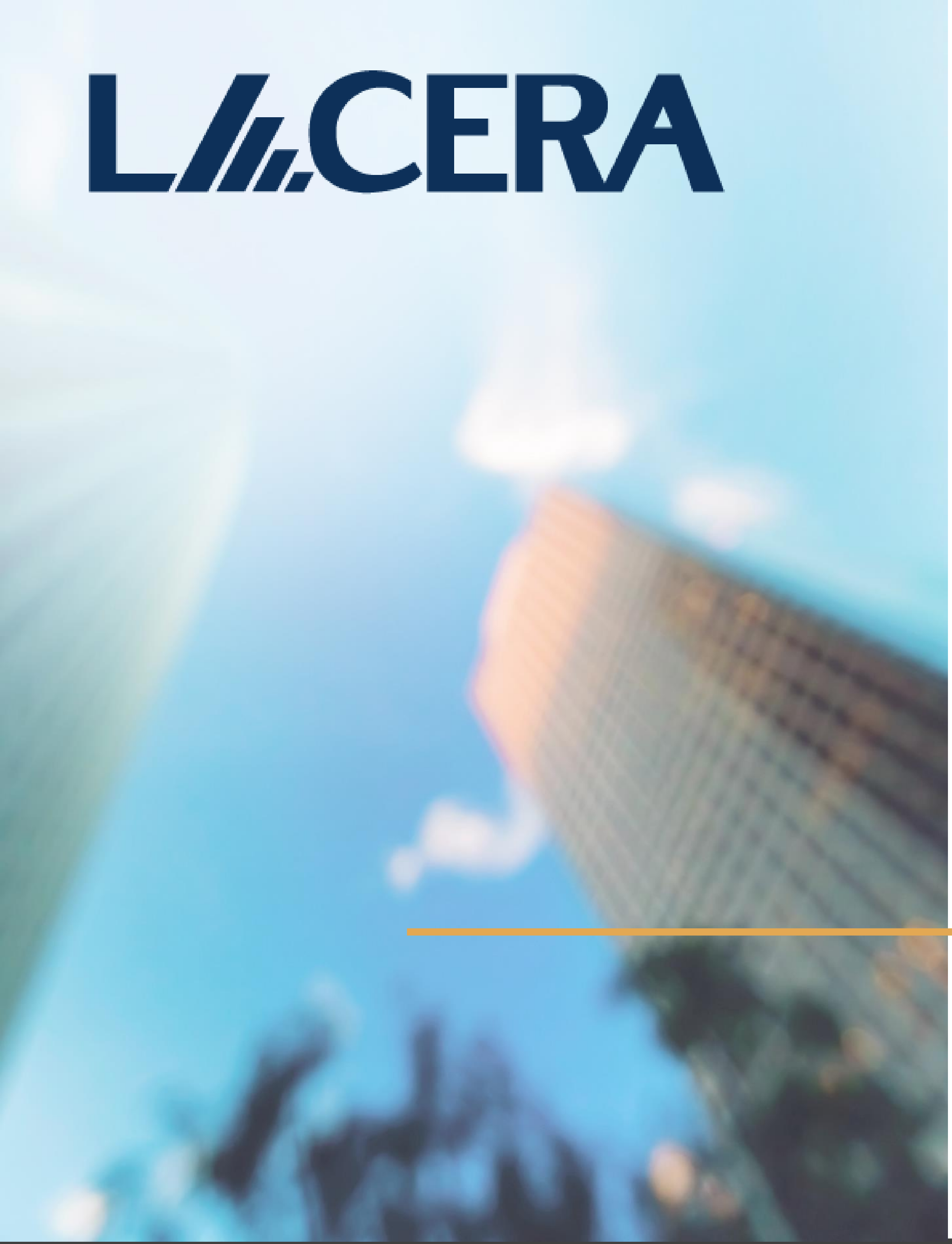
→ The additional feedback gathered from this session will be critical in providing LACERA Trustees with additional guidance and support during the Governance Review process.

→ Governance and management of pension plan investments also comes in many forms driven by factors such as differing preferences, assets size, capabilities of staff, etc.

→ In assessing the best fit for investment governance, Trustees need to consider key issues regarding:

- Alignment of authority, responsibility, oversight and expertise
- Changing funding levels, portfolio complexity and market returns/volatility
- Size, experience and tenure of investment staff
- Experience, tenure and time limitations of Trustees

→ LACERA's governance model should allow LACERA Trustees to fulfill their fiduciary duties with confidence with full consideration of LACERA's legal/regulatory constructs, Investment Beliefs, strategic plan of "Towards Best-In-Class Investor," and optimal utilization of Trustee time, experience and LACERA's resources.



Capital Markets Expectations

2023 Board of Investments Offsite
September 12, 2023

CAPITAL MARKETS EXPECTATIONS

Tuesday, September 13th – 1:00pm – 2:15pm*

Today's Discussion

Session Outline

1. Introduction: *Krista Powell, LACERA*
2. Presentation: *Tim Filla, Aysun Kilic, Leandro Festino – Meketa Investment Group*
   - Background
   - Meketa Process
   - Market Overview
   - CME Changes from Prior Years
   - Summary

Objectives

- Review Meketa 2023 Capital Market Expectations (CMEs)
- Highlight significant changes from the prior Strategic Asset Allocation (SAA) Review
- Discuss potential impact to LACERA's SAA
- Prepare Trustees for approval of the 2024 CMEs for use in LACERA's SAA Review

*Subject to change

Speaker Biographies

- **MEKETA INVESTMENT GROUP**
  - *Tim Filla, CAIA, CSRIC – Managing Principal, Consultant*
    - Over 20 years of investment management industry experience
    - Serves as a consultant on various defined benefit and health & welfare funds, public funds and non-profits
    - Member of Meketa's Global Macroeconomic Investment Committee
  - *Aysun Kilic – Managing Principal, Consultant*
    - Has been in the financial services industry since 2003
    - Serves as a consultant to both non-discretionary and OCIO/discretionary clients
  - *Leandro Festino – Managing Principal, Consultant*
    - Started his career in the investment consulting industry in 1999 and joined Meketa in 2003
    - Advises both private and public pension plans, as well as other institutional investors
    - Member of Meketa's Board of Directors and ESG Investing Committee

Background

LACERA
MISSION STATEMENT

Produce, Protect, and Provide the Promised Benefits

How do we fulfill our mission?	**Prudent investment** and **conservation of plan assets**, in accordance with its Investment Beliefs and in consideration of actuarial analysis
Do we have a framework to fulfill our mission?	LACERA's **Investment Policy Statement ("IPS")** defines the framework by which LACERA manages the assets of the Fund in order to fulfill its mission
Who approves this framework to fulfill our mission?	LACERA's **Board of Investments ("BOI")** is responsible for establishing investment policy and objectives for both the total Fund and the OPEB Trust
When were CMEs last approved by the BOI?	Capital Markets Expectations ("CMEs") were reviewed and approved in **2021**

Timeline

3Q 2023	4Q 2023	1Q 2024	2Q 2024
Overview of Return Expectations since the last SAA Study	Asset Class & Benchmarks Educational Session	Deliberate & Take Action on Capital Market Assumptions	Deliberate & Take Action on Pension Plan SAA Study & Benchmarks
Capital Market Expectations Educational Session	Measuring Climate Risk & Portfolio Impact	Deliberate & Take Action on the OPEB SAA Study & Benchmarks	Review & Approve the Updated IPS
	Pension Plan & OPEB Trust Initial Findings	Risk Budgeting Education	Provide Implementation Plan to Trustees

Today's discussion

Board approved SAA commences July 1, 2024

*Dates and topics are subject to change to allow for BOI requests and flexibility to ensure a thorough SAA process.

CMEs and Portfolio Implementation

Capital Markets Expectations are updated on an annual basis and are needed to model various portfolio allocations which are then used to determine the plan's Strategic Asset Allocation ("SAA").

1 Capital Market Expectations

- CMEs are the inputs needed to determine the long-term risk and returns expectations for a portfolio
- Changes are driven by many factors, including interest rates, credit spreads, and equity prices
- Approval of CMEs for use in the asset allocation modeling rests with the Board of Investments

2 Modeling

- Relies on both quantitative and qualitative methodologies
- Each model is based on the most important factors that drive returns for asset classes

3 Strategic Asset Allocation

- LACERA's Investment Beliefs state that "Long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes"
- Review and approve a suitable asset mix to meet or exceed LACERA's actuarial hurdle

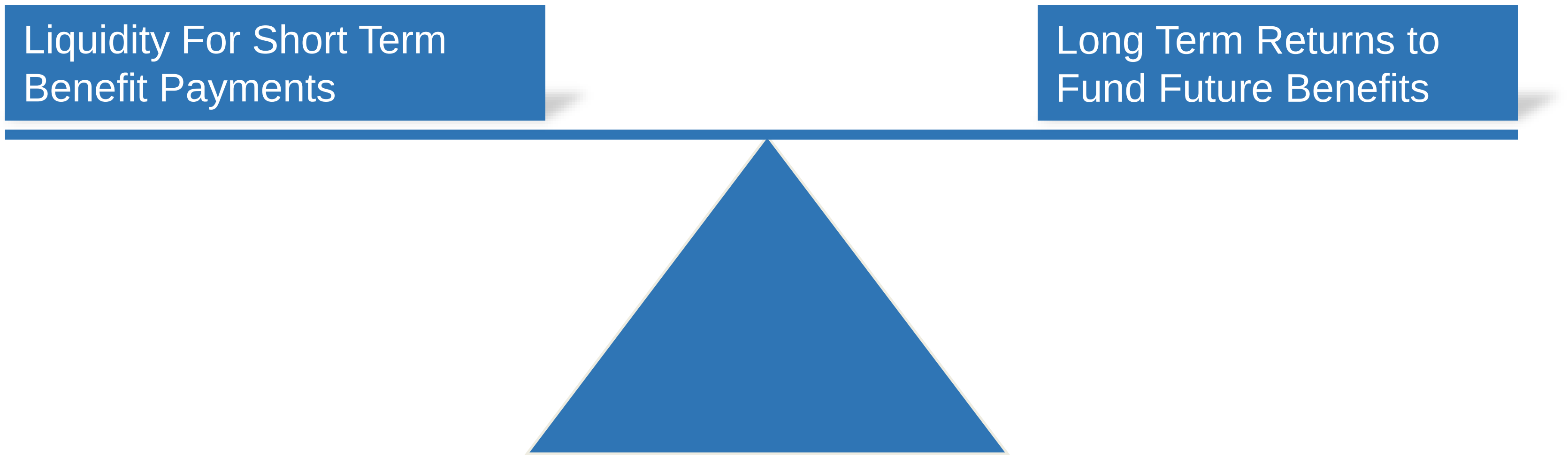
4 Implementation

- Review and approve an updated Investment Policy Statement
- Provide an implementation plan to Trustees

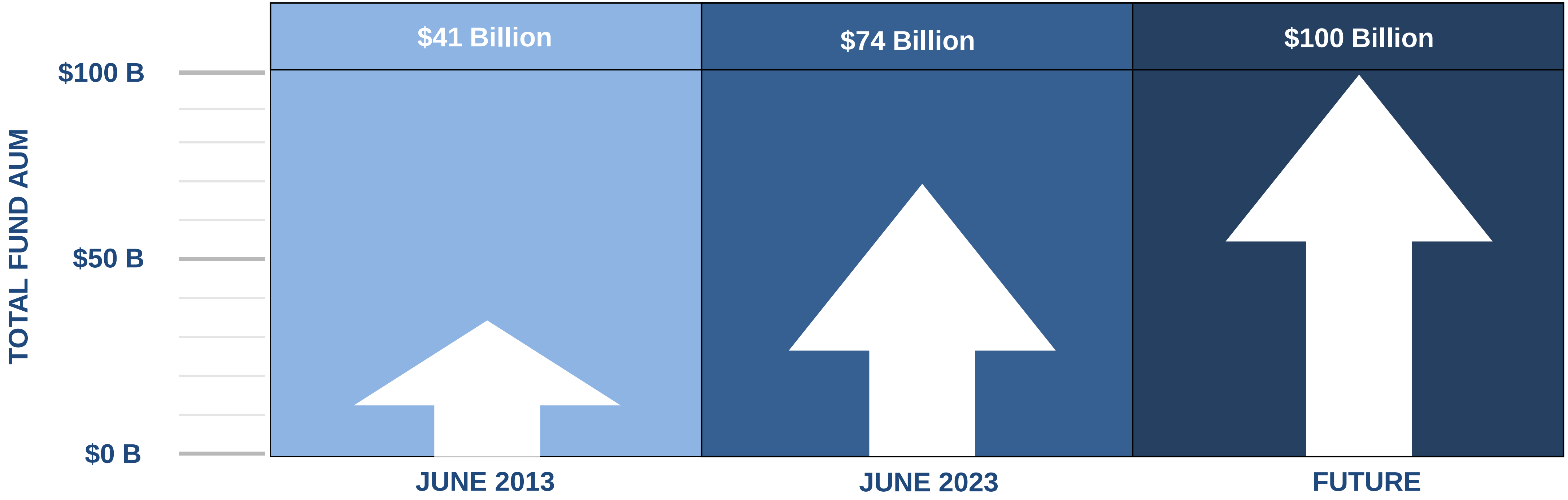
Asset Liability Management (“ALM”)

The variability of returns matters

- A key component in ALM is risk management – risk that is not expected to be rewarded over the long-term should be mitigated
- The Fund’s total liquidity and funded status influences the Board’s risk tolerance
- CMEs are used to model various return and risk scenarios that align with the Fund’s total return and risk objectives



LACERA's Portfolio is Evolving



JUNE 2013

- Classical Framework
- Less intentional implementation by asset class, unknown risks and some uncompensated complexity
- 80% Public / 20% Private – less liquid

JUNE 2023

- Functional Framework
- Objective oriented implementation through structure reviews and total Fund analytics
- 58% Public / 42% Private – less liquid

FUTURE

- Towards best-in-class investment portfolio
- Compensation for complexity
- Increased attentiveness on liquidity management

Allocator to Investor

MEKETA

INVESTMENT GROUP

Meketa Investment Group

LACERA Board of Investments Offsite

September 2023

Capital Markets Expectations

Table of Contents

Background

→ LACERA's Investment Beliefs state that "Long-term strategic asset allocation will be the primary determinant of LACERA'S risk/return outcomes."

→ This presentation is a critical component of LACERA's 2023/2024 Strategic Asset Allocation Review. The main purpose of this session is to provide information to the Board of Investments regarding the modelling assumptions Meketa will utilize in the Review

- The major factors impacting capital market expectations
- Details of Meketa's 2023 CMEs by functional category and the changes from the last SAA review
- An overview of the process for developing CMEs

→ In past Strategic Asset Allocation Reviews, approval for use of CMEs in the asset allocation modelling rested with the Board of Investments.

Executive Summary

→ We update our capital markets expectations each year in January.

- Changes are driven by many factors, including interest rates, credit spreads, cap rates, and equity prices.

→ 2022 was a difficult year, with losses experienced for most asset classes, as interest rates increased, spreads widened, and most risk assets declined in value.

- However, there is a notable silver lining to this story – increased return assumptions.

→ Bond yields increased by the largest amount since the 1990s, driving up future returns for fixed income assets.

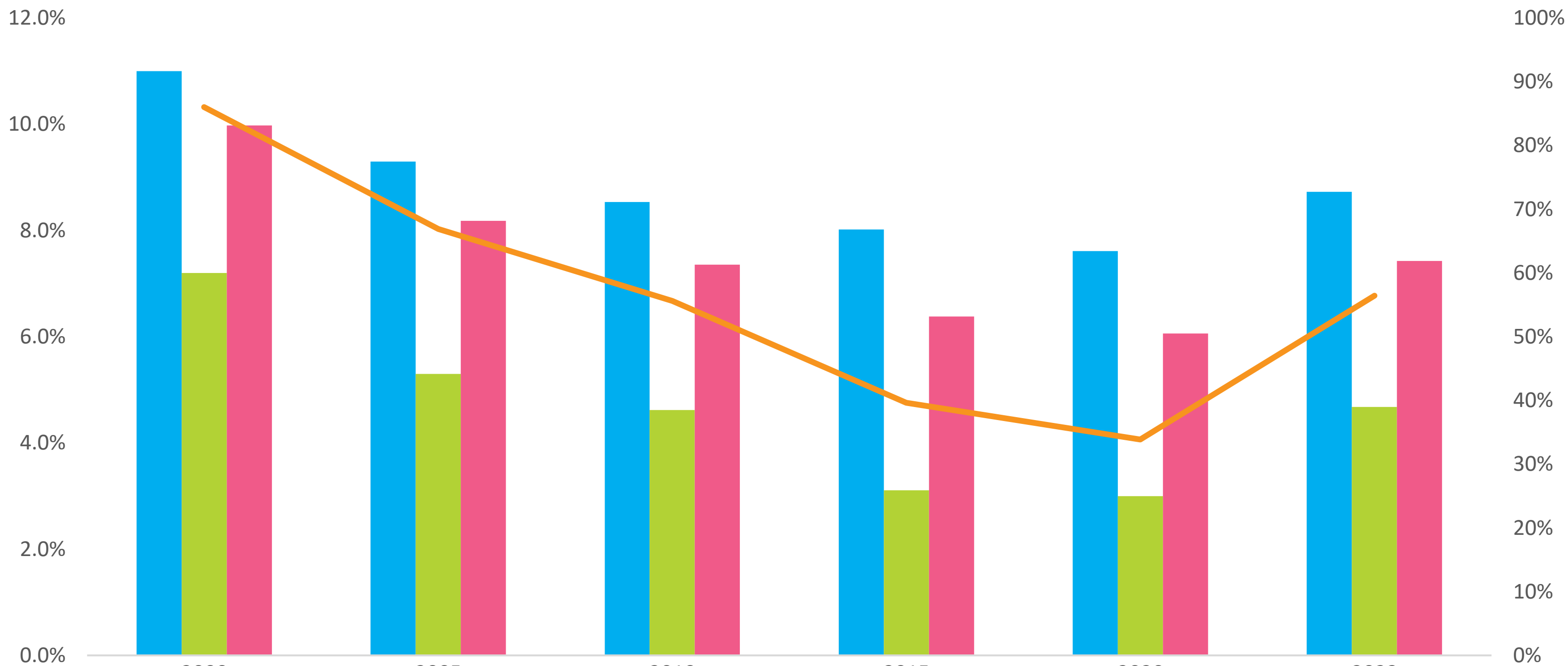
→ Despite lower growth projections globally, the price decline experienced by equities and many other risk assets has improved their forward-looking returns.

→ The net result is the largest increase in return assumptions in our 20+ year history of creating capital market expectations (CMEs).

→ While our 10-year CMEs continue to be lower than many of our 20-year CMEs, this is no longer true across the board, especially in fixed income.

Secular Decline in Returns: An Inflection Point?

→ After decades of decline, expected returns have increased in Meketa’s 2023 Capital Market Expectations.



	2000	2005	2010	2015	2020	2023
Equity Expected Return	11.0%	9.3%	8.5%	8.0%	7.6%	8.7%
Bond Expected Return	7.2%	5.3%	4.6%	3.1%	3.0%	4.7%
60/40 Eq/Bond Exp. Ret.	10.0%	8.2%	7.4%	6.4%	6.1%	7.4%
Probablity of Earning 7.0%	86%	67%	56%	40%	34%	56%

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

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.

Asset Class Definitions

→ We identify asset classes and strategies that are both investable and appropriate for the long-term allocation of funds.

→ Several considerations influence this process:

- Unique return behavior
- Observable historical track record
- A robust market
- Client requests

→ We then make forecasts for each asset class.

- We created inputs for 104 “asset classes” for our 2023 Capital Markets Expectations.

Building 10-year Forecasts

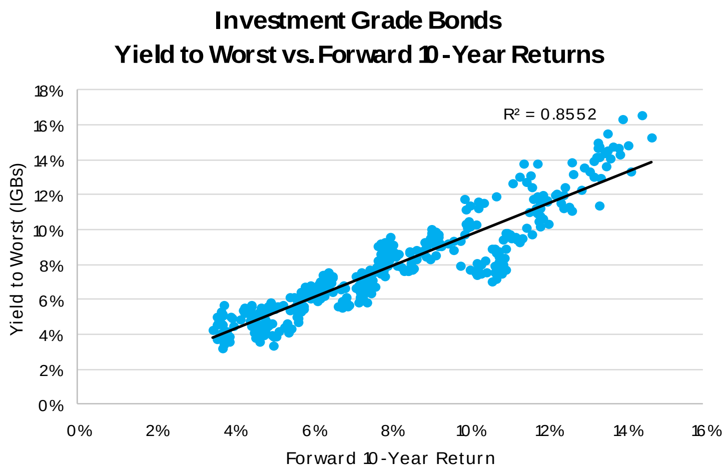
→ Our first step is to develop 10-year forecasts based on fundamental models.

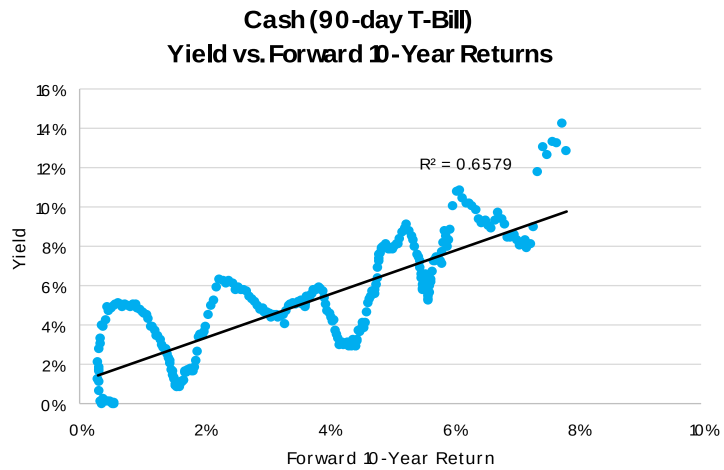
- Each model is based on the most important factors that drive returns for that asset class:

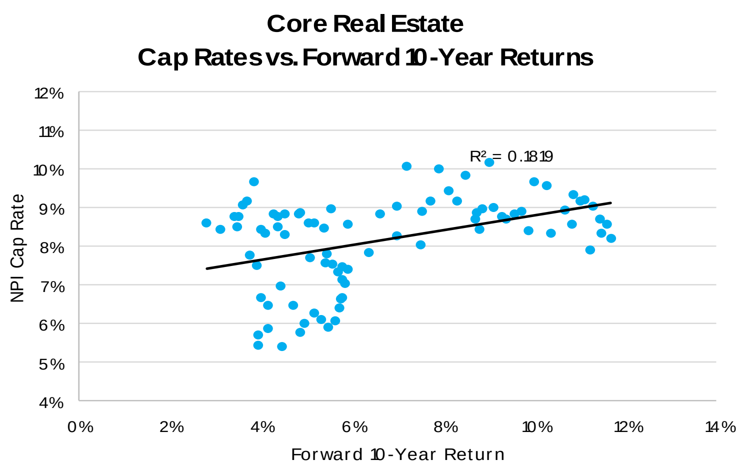
Asset Class Category	Major Factors
Equities	Dividend Yield, GDP Growth, Valuation
Bonds	Yield to Worst, Default Rate, Recovery Rate
Commodities	Collateral Yield, Roll Yield, Inflation
Infrastructure	Public IS Valuation, Income, Growth
Natural Resources	Price per Acre, Income, Public Market Valuation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

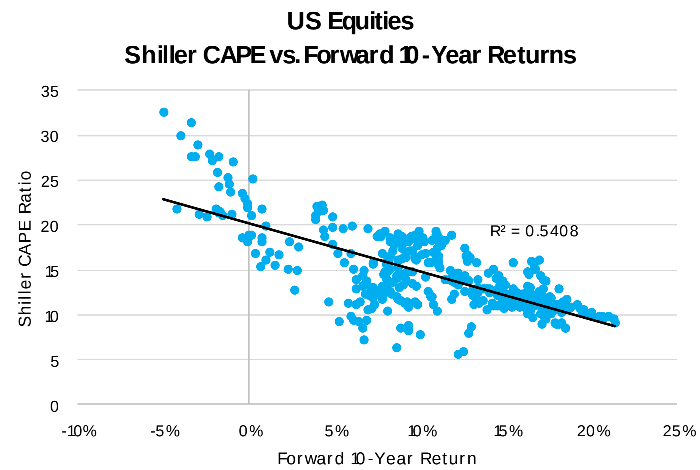
- The common components are income, growth, and valuation.

Some factors are naturally more predictive than others









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

The Other Inputs: Standard Deviation and Correlation

→ Standard deviation:

- We review the trailing fifteen-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 (%)
Bank Loans	7.4	-2.6	10.0
FI/L-S Credit	6.5	-2.5	9.0

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

→ Correlation:

- We use trailing fifteen-year correlations as our guide.
- Again, we make adjustments for "smoothed" return streams.

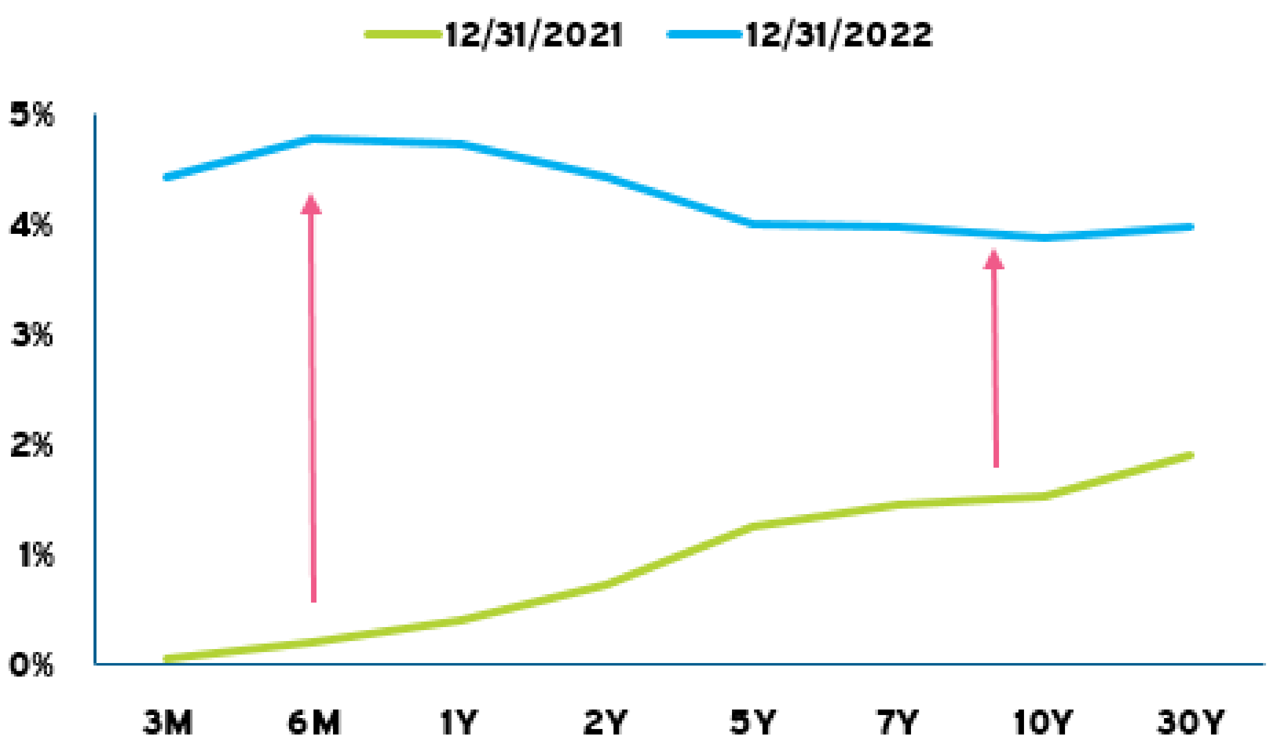
→ Most of our adjustments are conservative in nature (i.e., they increase the standard deviation and correlation).

Rising Interest Rates

→ The US Treasury yield curve moved upward and flattened during 2022, even inverting in some portions of the curve.

→ The increase was particularly sharp for short-term rates, driven by the Federal Reserve's actions that were intended to battle inflation.

US Yield Curve



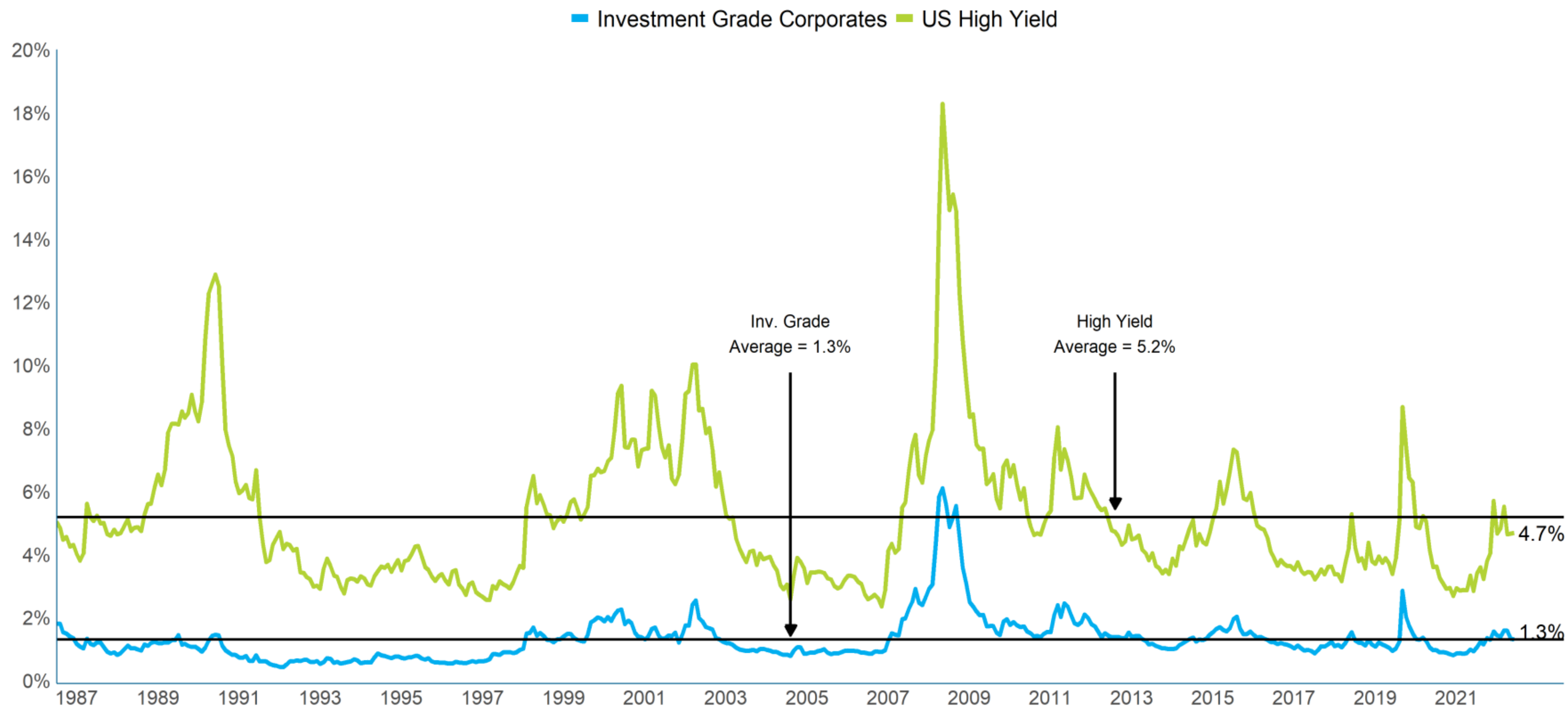
Source: Bloomberg. Data is as of December 31, 2022.

Wider Credit Spreads

→ Credit spreads rebounded from near-record lows in 2021 to more closely resembling their long-term averages in 2022.

- The spread for high yield bonds went from 283 bp to 469 bp.

Credit Spreads



Source: Bloomberg. High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield. Data is as of December 31, 2022.

Rising Rates = Higher Yields

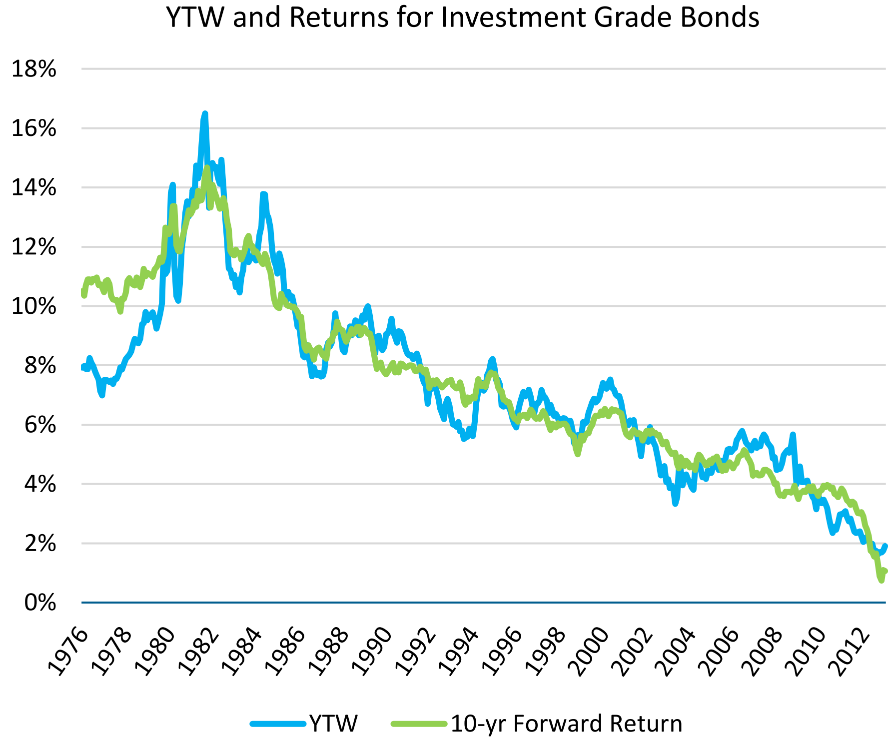
→ Rising interest rates and wider credit spreads resulted in higher yields across every major sector of the global bond market.

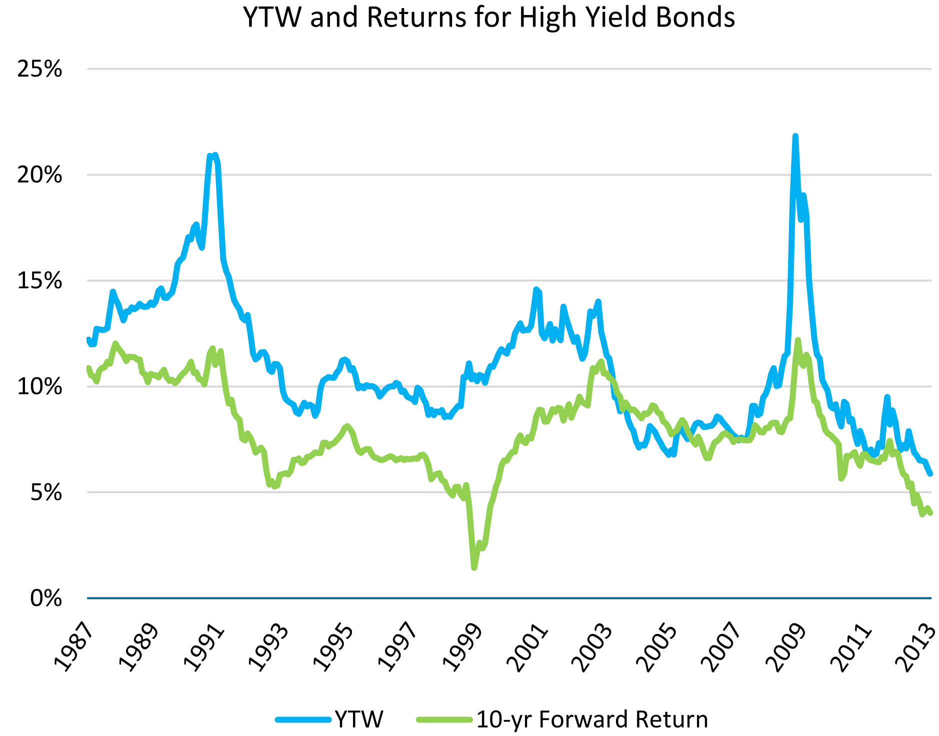
Index	Yield to Worst 12/31/22 (%)	Yield to Worst 12/31/21 (%)
Fed Funds Rate	4.25-4.50	0-0.25
10-year Treasury	3.88	1.51
Bloomberg Aggregate	4.68	1.75
Bloomberg Corporate	5.42	2.33
Bloomberg Securitized	4.75	1.98
Bloomberg Global Aggregate	3.73	1.31
Bloomberg EM Local Currency Government	4.42	3.83
Bloomberg EM Hard Currency Aggregate	7.26	3.96
Bloomberg US Corporate High Yield	8.96	4.21

Source: Bloomberg. Data is as of December 31, 2022 and 2021.

Higher Yields Means Higher Future Returns

→ This increase in interest rates matters because yields are a very good predictor of future returns for bonds[1], at least over a 10-year horizon.





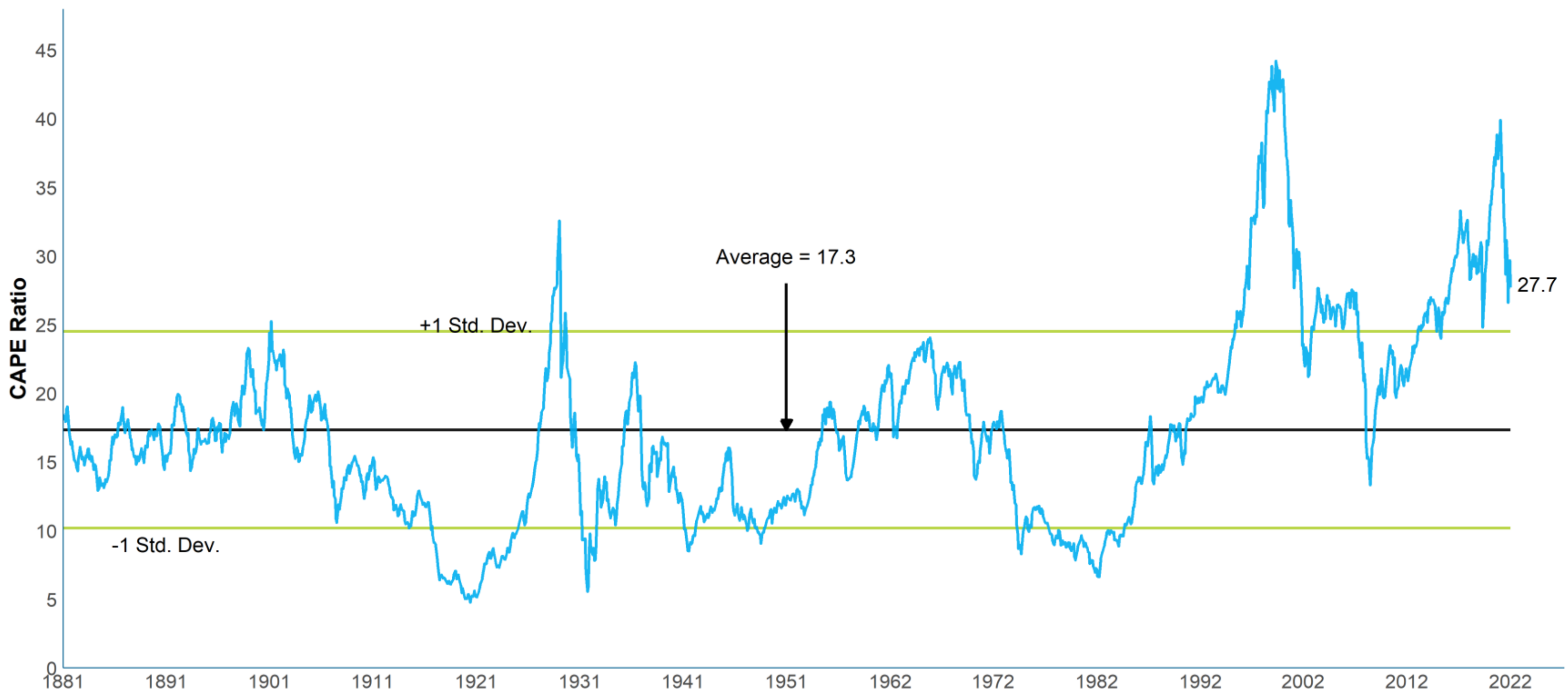
[1] When predicting returns for bonds, default risk should also be taken into account. For example, defaults are why the return for high yield bonds have generally been below the starting yield.
Source: Bloomberg Aggregate and Bloomberg High yield indices. Data is as of December 31, 2022.

Lower Prices for Equities

→ US stocks had a rough year, with the S&P 500 index experiencing an 18.1% loss.

→ Valuations remain elevated relative to their long-term history but are much nearer their average for the past 30 years.

US Equity Cyclically Adjusted P/E

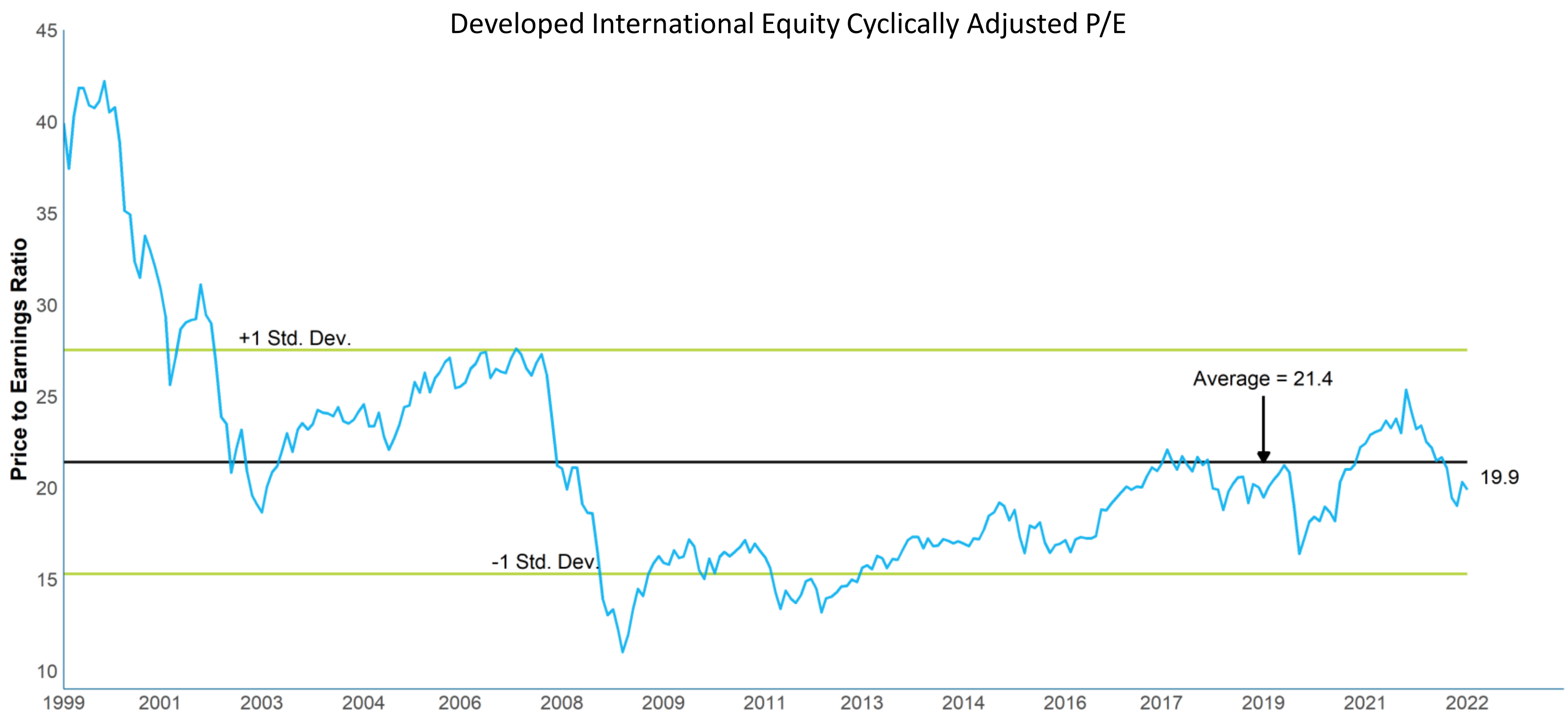


Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is as of December 31, 2022 for the S&P 500 Index.

Lower Prices in Non-US Equities, too

→ EAFE equities declined 14.5% in USD terms in 2022, though the loss was only 7.0% in local currency.

→ EAFE valuations are now relatively close to their historical average.

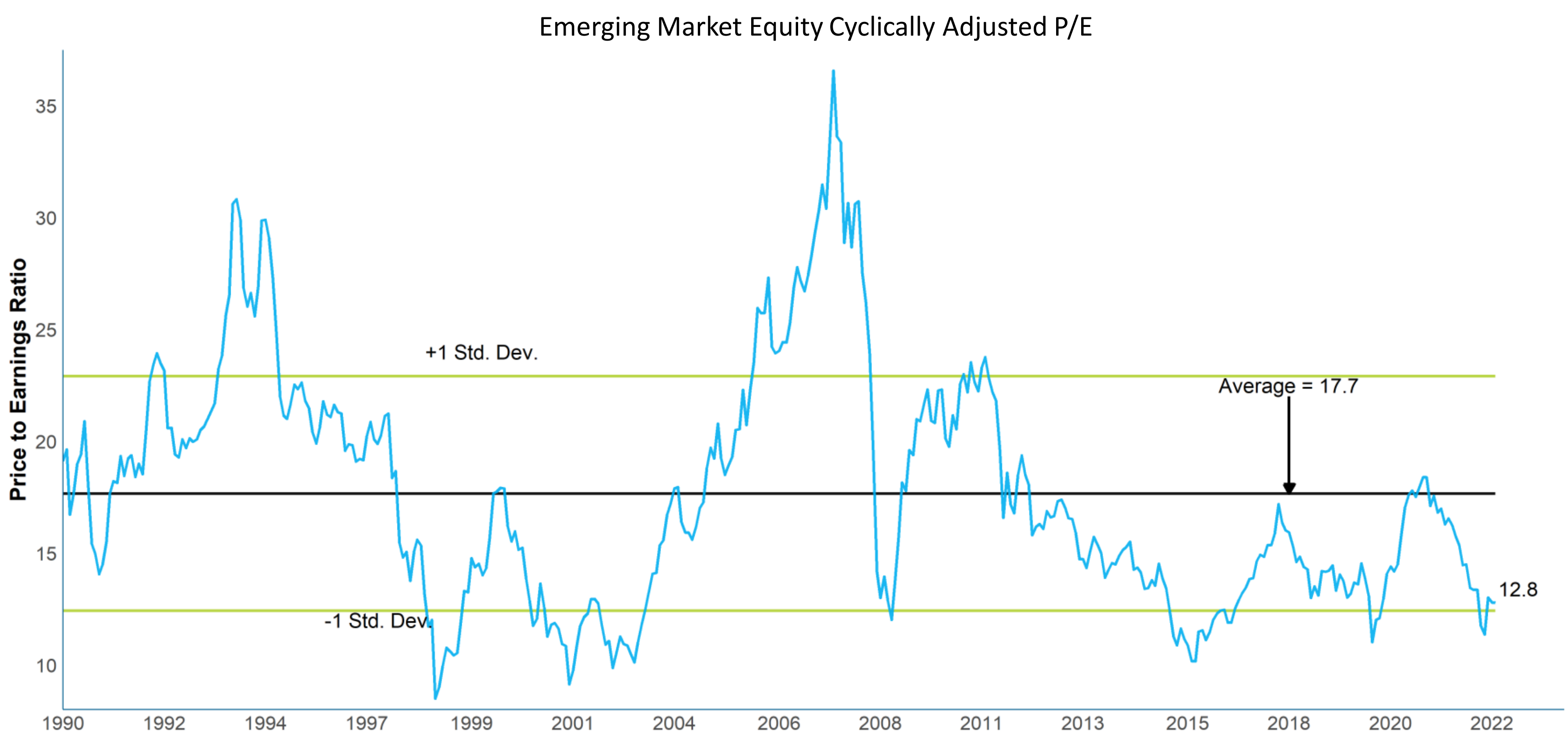


Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of December 31, 2022.

And Lower Prices in Emerging Market Equities

→ Driven by a substantial downturn in Chinese equities (-21.9%), emerging market equities finished the year down 20.1%.

→ As a result, valuations are well below their long-term average.

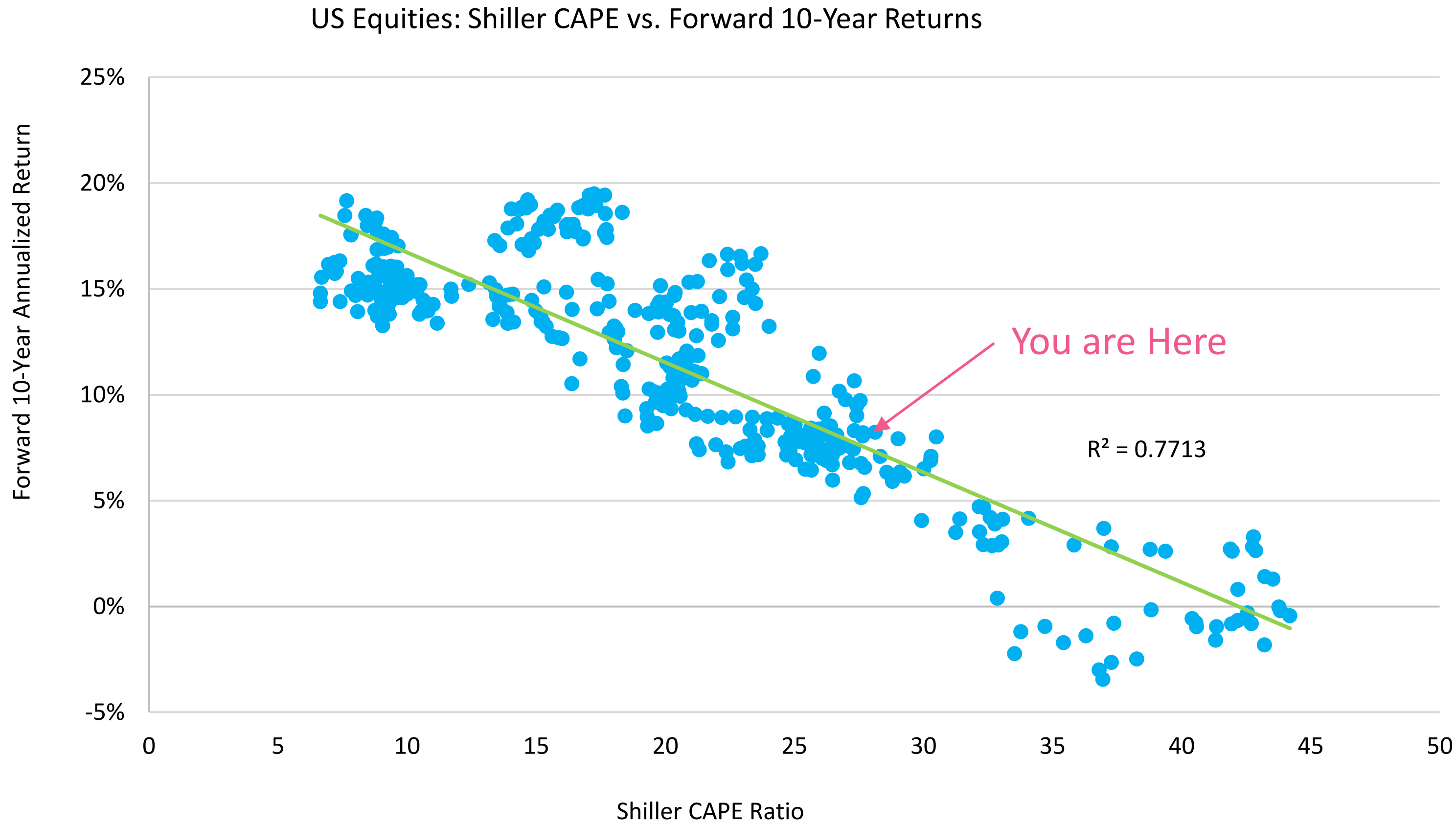


Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.. Data is as of December 31, 2022.

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.



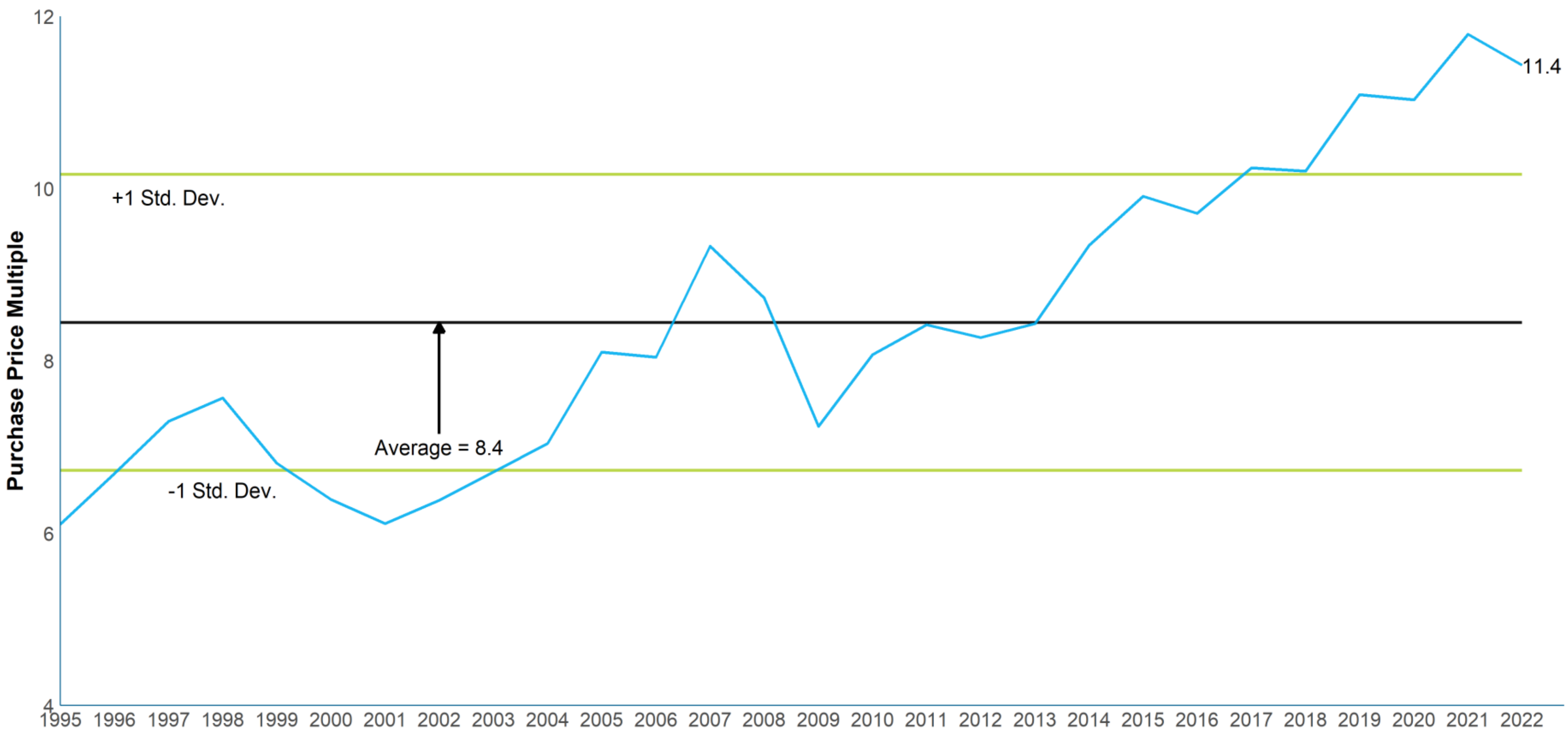
Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is based on monthly returns and Cyclically Adjusted P/E ratio on S&P 500 Index for the period from January 1980 through December 2022.

Higher Prices in Private Equity, too

→ EBITDA multiples are the closest proxy to a P-E ratio for private equity.

- The downturn in public market valuations was not experienced to the same extent in private equity prices.

Private Equity Multiples



Source: S&P LCD Average EBITDA Multiples Paid in All LBOs. Annual figures, except for 2022 (YTD), as of October 31, 2022.

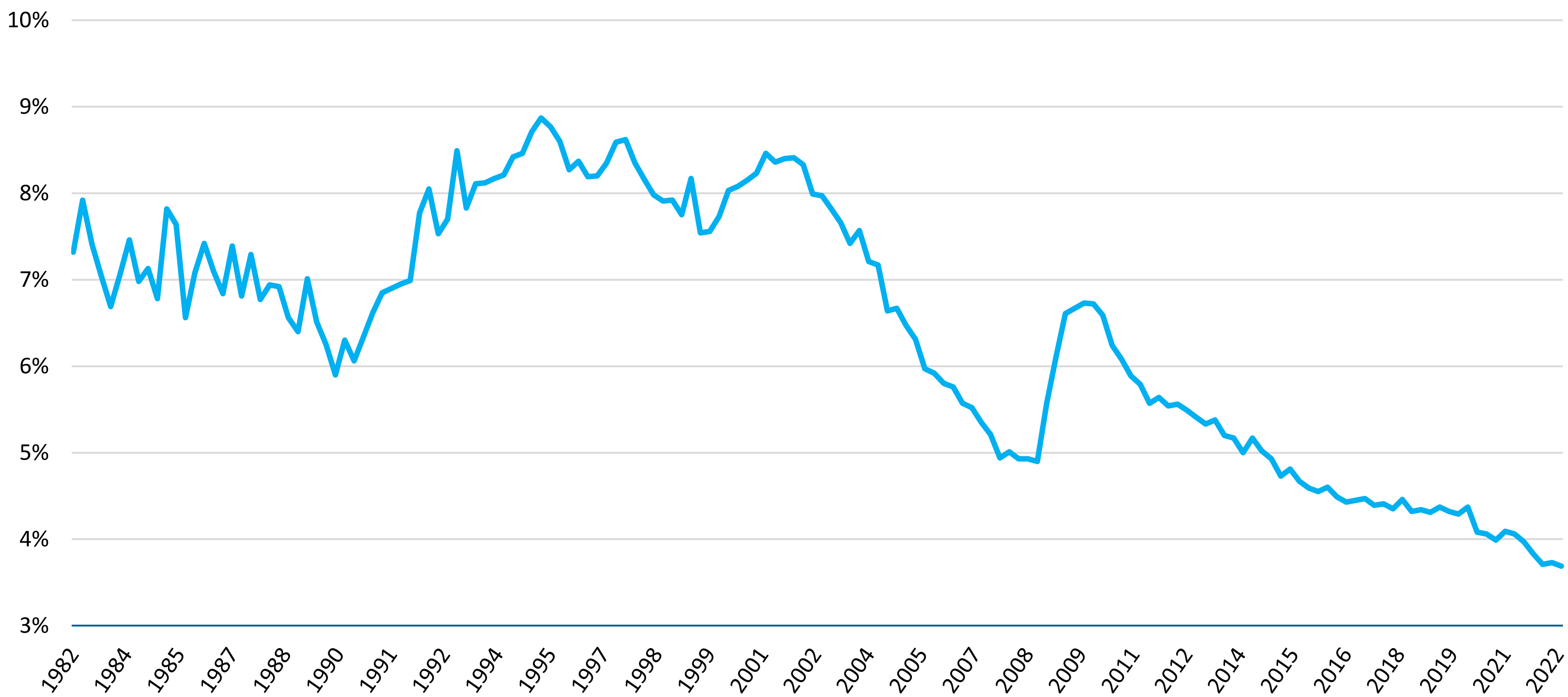
Little Change for Real Estate

→ Real estate cap rates are similar to an earnings yield (the inverse of the P-E ratio) for equities.

- Cap rates are indicative of future returns.

→ Cap rates declined in 2022, continuing their long-term downward trend.

Core Real Estate Cap Rates



Source: NCREIF NPI value-weighted cap rates. As of September 30, 2022.

2023 Expected Returns and Changes from Prior Years

10-year Geometric Expected Returns
Growth

	2023 E(R) (%)	2021 E(R) (%)	Δ From 2021 (%)	Notes
US Equity	7.8	5.2	2.6	Lower valuations
Developed Non-US Equity	10.1	6.7	3.4	Lower valuations
Emerging Market Equity	10.3	7.5	2.8	Lower valuations
Emerging Market ex-China	10.7	NA	NA	*New*
China Equity	9.0	NA	NA	*New*
Global Equity	8.8	6.1	2.7	Lower valuations
Private Equity	9.9	9.2	0.7	Higher earnings and slightly lower valuations
Buyouts	9.4	7.9	1.5	Higher earnings and slightly lower valuations
Venture Capital	10.4	8.1	2.3	Higher earnings and slightly lower valuations
Value-Added Real Estate	6.5	7.5	-1.0	Higher borrowing costs
Opportunistic Real Estate	7.6	8.5	-0.9	Higher borrowing costs

10-year Geometric Expected Returns
Credit

	2023 E(R) (%)	2021 E(R) (%)	Δ From 2021 (%)	Notes
High Yield Bonds	8.0	3.3	4.7	Higher yields
Bank Loans	7.6	3.5	4.1	Higher yields
Emerging Market Bonds (major)	6.7	3.5	3.2	Higher yields
Emerging Market Bonds (local)	6.4	4.3	2.1	Higher yields
Private Debt	9.4	6.8	2.6	Higher yields
Direct Lending	8.5	6.5	2.0	Higher yields
Asset Based Lending	9.4	NA	NA	Higher yields
Special Situations Lending	10.8	NA	NA	*New*
Fixed Income/L-S Credit	6.3	3.2	3.1	Higher yields

10-year Geometric Expected Returns
Real Assets and Inflation Hedges

	2023 E(R) (%)	2021 E(R) (%)	Δ From 2021 (%)	Notes
Core Private Real Estate	4.3	5.0	-0.7	Lower cap rates, higher borrowing costs
Natural Resources (Public)	7.8	7.1	0.7	Higher earnings offset by higher valuations
Natural Resources (Private)	9.1	9.1	0.0	Higher earnings in some sectors partly offset by higher valuation and borrowing costs
Energy	9.3	8.5	0.8	Higher earnings
Mining	9.8	7.8	2.0	Lower valuations
Timberland	5.7	5.7	0.0	Flat prices
Farmland	3.9	6.2	-2.3	Higher valuations, higher borrowing costs
Sustainability	9.2	8.0	1.2	Higher earnings
Commodities	6.3	3.4	2.9	Higher cash yield
Infrastructure	6.8	7.9	-1.1	Lower public valuations offset by higher borrowing costs
Infrastructure (Core Private)	6.4	7.1	-0.7	Higher borrowing costs
Infrastructure (Non-Core Private)	7.4	8.5	-1.1	Higher borrowing costs
Short-term TIPS	3.9	1.0	2.9	Higher yields
TIPS	4.3	1.2	3.1	Higher yields

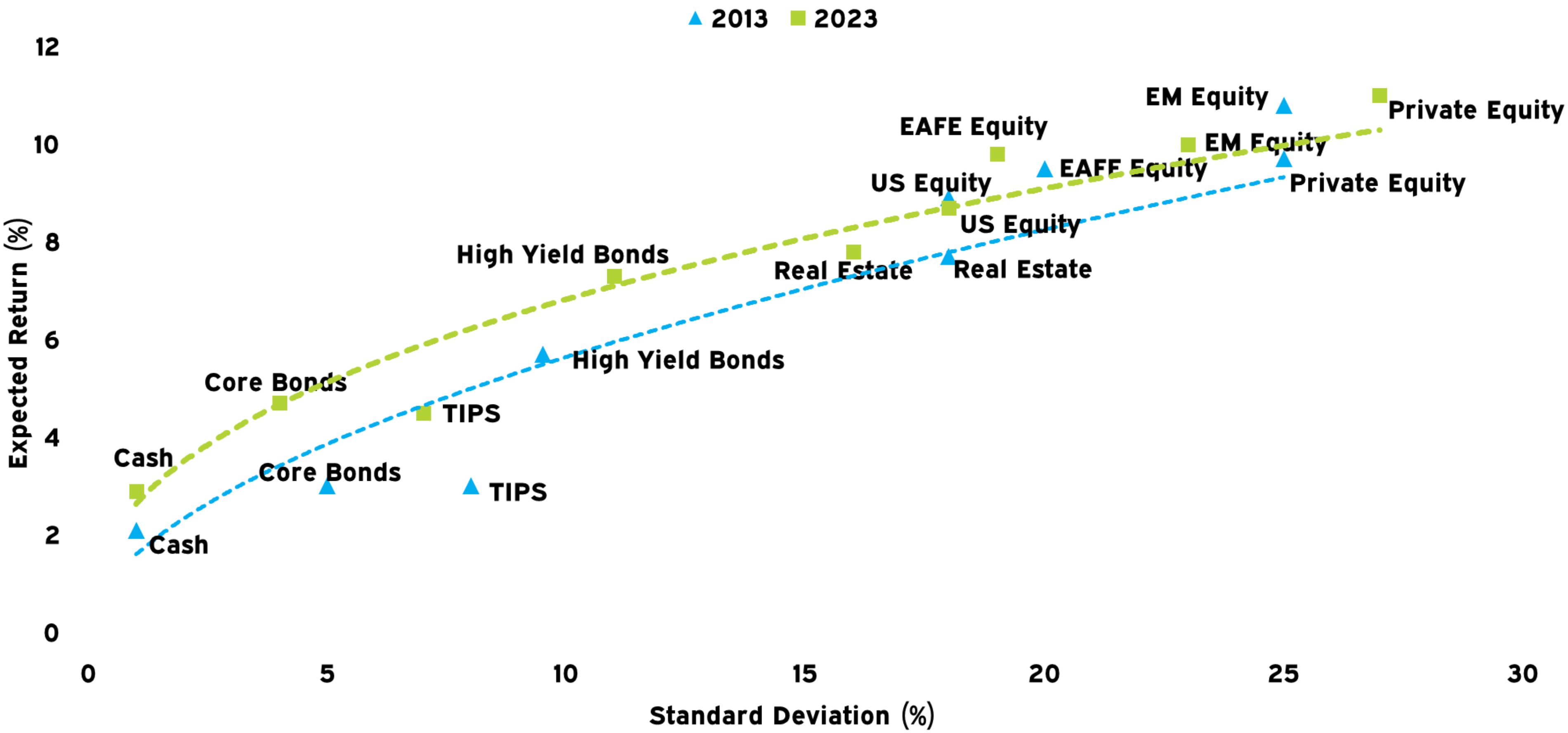
10-year Geometric Expected Returns
Risk Reduction and Mitigation

	2023 E(R) (%)	2021 E(R) (%)	Δ From 2021 (%)	Notes
Cash Equivalents	3.1	0.7	2.4	Higher yields
Short-term Investment Grade Bonds	3.8	0.9	2.9	Higher yields
Investment Grade Bonds	4.8	1.2	3.6	Higher yields
Long-term Government Bonds	4.3	1.6	2.7	Higher yields
Hedge Funds	6.0	4.6	1.4	
Global Macro	5.2	3.6	1.6	Higher cash yield
CTA – Trend Following	3.9	4.5	-0.6	Lower beta assumption
Relative Value/Arbitrage	6.2	4.5	1.7	Higher cash yield
Market Neutral	3.0	NA	NA	

The Big Picture: Higher Return for the ~Same Risk[1]

→ The relationship between long-term return expectations and the level of risk accepted is not static.

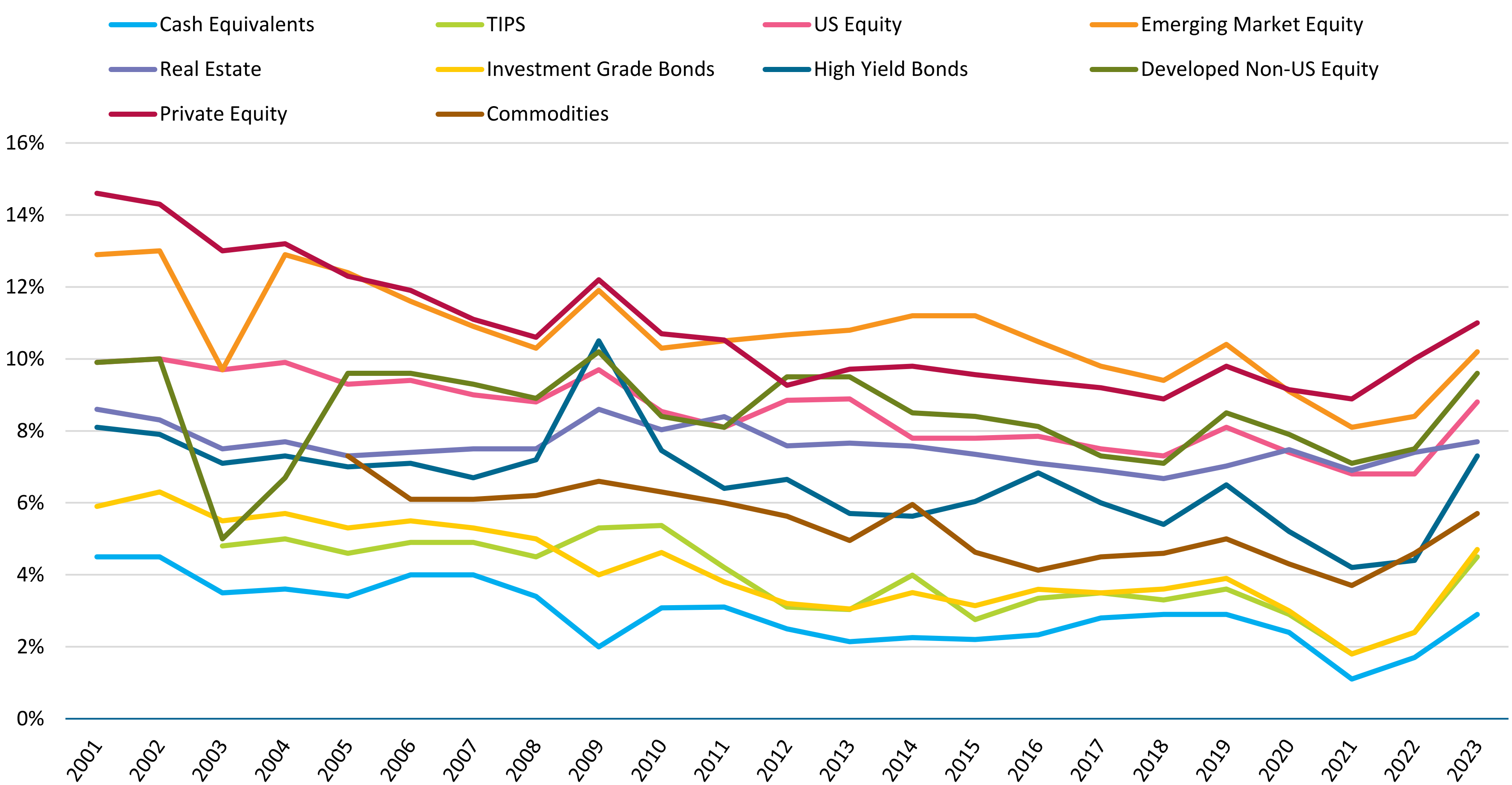
→ We anticipate many investors can take on less risk than they have over the past decade if they want to achieve their target returns.



[1] Expected return and standard deviation are based upon Meketa Investment Group's 2013 and 2023 20-year capital market expectations.

2023 Expected Returns and Changes from Prior Years

Our 20-year CMEs since 2000



Return and Risk Data

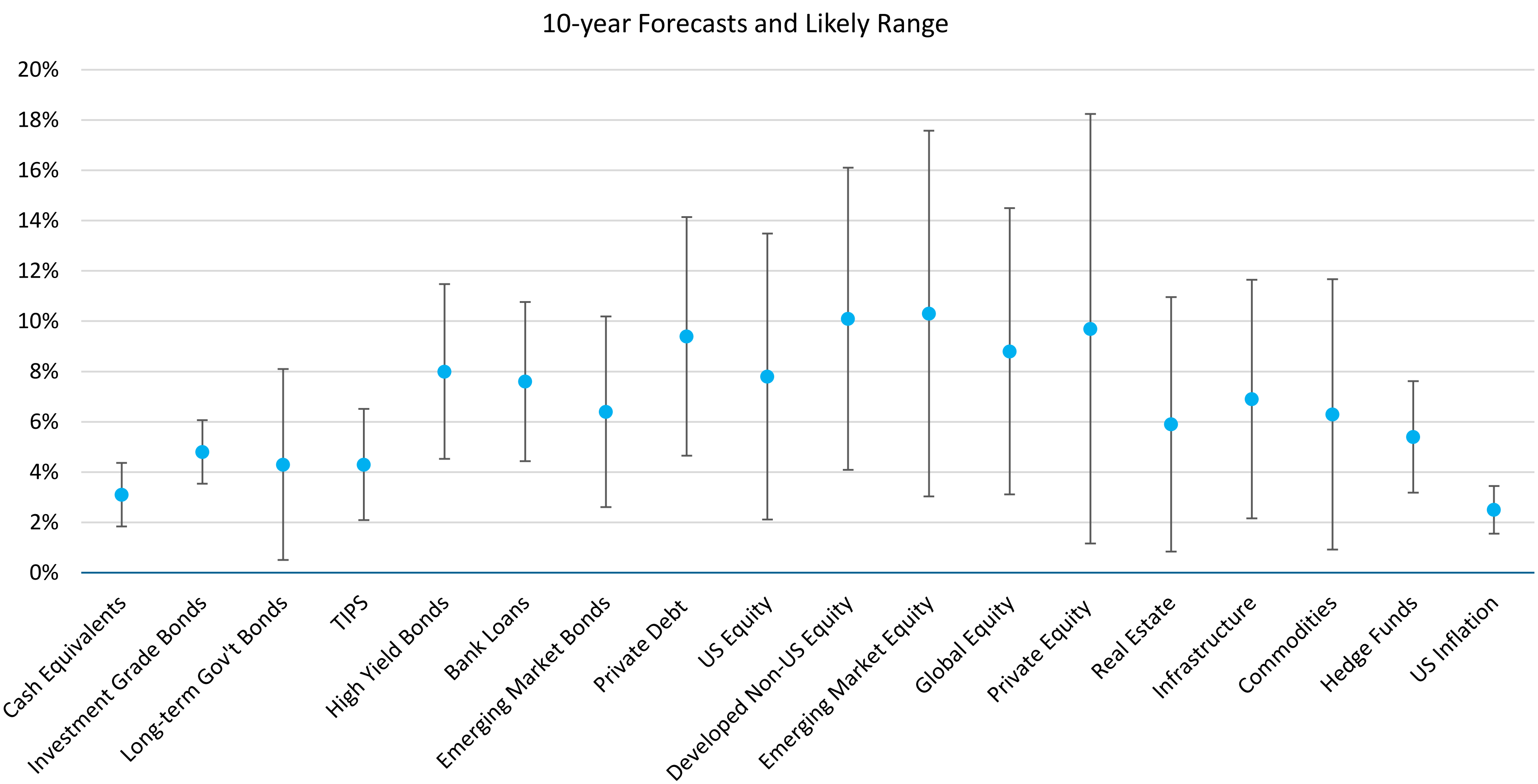
Asset Class	10-year Expected Return (%)	20-year Expected Return (%)	Standard Deviation (%)
Cash Equivalents	3.1	2.9	1.0
Investment Grade Bonds	4.8	4.7	4.0
Long-term Government Bonds	4.3	5.0	12.0
TIPS	4.3	4.5	7.0
High Yield Bonds	8.0	7.3	11.0
Bank Loans	7.6	7.0	10.0
Emerging Market Debt (local)	6.4	6.0	12.0
Private Debt	9.4	9.0	15.0
US Equity	7.8	8.7	18.0
Developed Non-US Equity	10.1	9.8	19.0
Emerging Non-US Equity	10.3	10.0	23.0
Global Equity	8.8	9.2	18.0
Private Equity	9.7	11.0	27.0
Real Estate	5.9	7.8	16.0
Infrastructure	6.9	8.3	15.0
Commodities	6.3	5.7	17.0
Hedge Funds	5.4	6.1	7.0
Inflation	2.5	2.6	3.0

[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	0.83	1.00										
TIPS	0.76	0.54	1.00									
High Yield Bonds	0.28	-0.17	0.46	1.00								
US Equity	0.10	-0.24	0.27	0.75	1.00							
Developed Non-US Equity	0.16	-0.22	0.30	0.77	0.89	1.00						
Emerging Market Equity	0.20	-0.18	0.36	0.76	0.77	0.87	1.00					
Private Equity	0.00	-0.10	0.05	0.70	0.85	0.80	0.75	1.00				
Real Estate	0.20	0.05	0.10	0.50	0.50	0.45	0.40	0.45	1.00			
Commodities	0.00	-0.28	0.31	0.54	0.52	0.59	0.63	0.30	0.15	1.00		
Infrastructure	0.29	0.09	0.31	0.64	0.63	0.65	0.58	0.50	0.57	0.41	1.00	
Hedge Funds	0.03	-0.10	0.18	0.26	0.41	0.45	0.43	0.15	0.16	0.50	0.28	1.00

10-Year Return Expectations



Appendices

Equities

- We use a fundamental model for equities that combine income and capital appreciation:

$$E(R) = Dividend\ Yield + Price\ Return + Currency\ Effect$$

$$Price\ Return = Earnings\ Growth + Multiple\ Effect$$

- We use the current dividend yield on the respective index.[1]
- Earnings growth is a function of Real GDP growth, inflation, and exposure to foreign revenue sources.
- We use three approaches to calculate the multiple effect.
- The models assume reversion to the mean or fair value.
- We arrive at our preliminary 10-year assumption (in local currency)

$$US\ Equity\ E(R) = 1.8\% + [(1 + 5.4\%) \times (1 + 0.6\%) - 1] = 7.8\%$$

- For non-US equities, we add the expected currency effect vs. the US Dollar to the local expected return.

[1] The source for dividend yields is S&P 500 for the US and MSCI for non-US equities.

Bonds

→ The short version for most investment grade bond models is: E(R) = current YTW.

→ The longer version accounts for the expected term structure in the future.

- If the average duration is roughly five years, we calculate the expected yield in five years.
- The net effect tends to be minimal; for example, if rates rise, higher income in years 5 to 10 is offset by price declines in years 1 to 5.

→ For corporate bonds, we assume the spread vs. Treasuries will revert most of the way back to their mean since 1990.

→ For cash, we use an average of the current rate and the rate suggested by the Taylor Rule (inputs are current & potential GDP, current & desired inflation).

→ For TIPS, we add the real yield for the TIPS index to the expected Inflation rate used in the equities models.

→ As with equities, we also make currency adjustments when necessary.

- This currently provides a tailwind to foreign and EM local currency debt.

Bonds (continued)

→ For anything with credit risk, we also take into account the expected default & recovery rates.

	Inv. Grade Corporate (%)	LT Corporate (%)	Foreign Debt (%)	EM Debt (major) (%)	EM Debt (local) (%)	High Yield (%)	Bank Loans (%)
Default Rate	0.08	0.08	0.09	1.27	0.21	3.00	3.00
Loss Rate	50	50	50	50	50	50	40

- As a guide, we use Moody's historical global default & recovery data for each bucket as it is currently rated.
  - Example: EM Debt local currency (based on the Bloomberg EM Local Currency Govt Universal index):

Rating	Weighting	Default Rate	Weighted Default
Aaa	13.4%	0.06%	0.01%
Aa	61.4%	0.09%	0.06%
Baa	17.5%	0.27%	0.05%
Ba	6.9%	1.06%	0.07%
B	0.7%	3.40%	0.02%
Total Weighted Average Default Rate:			0.21%

Throughout this document, numbers may not sum due to rounding.

2023 Peer Survey

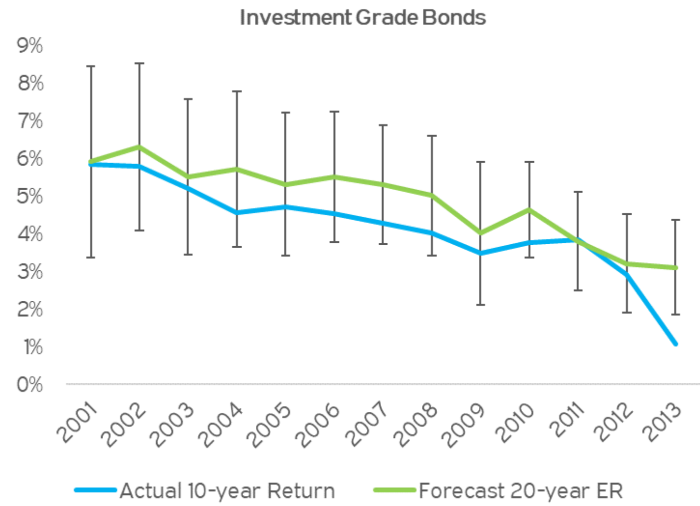
→ Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.[1]

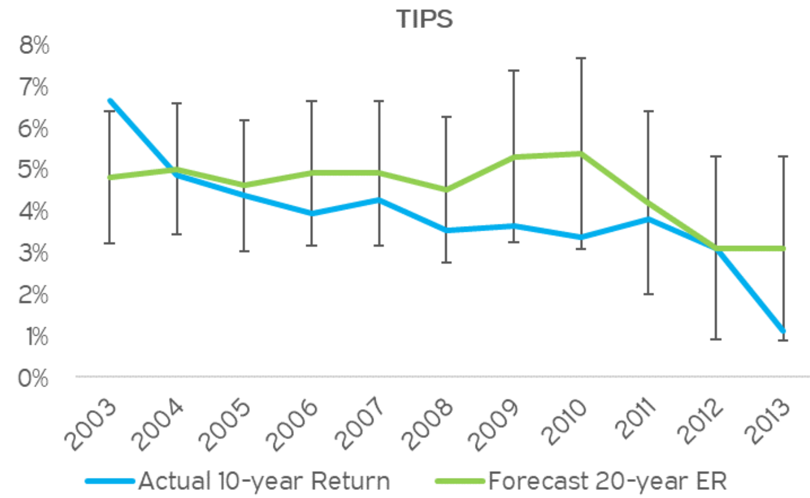
→ The Horizon survey is a useful tool to determine whether a consultant's expectations for returns (and risk) are reasonable.

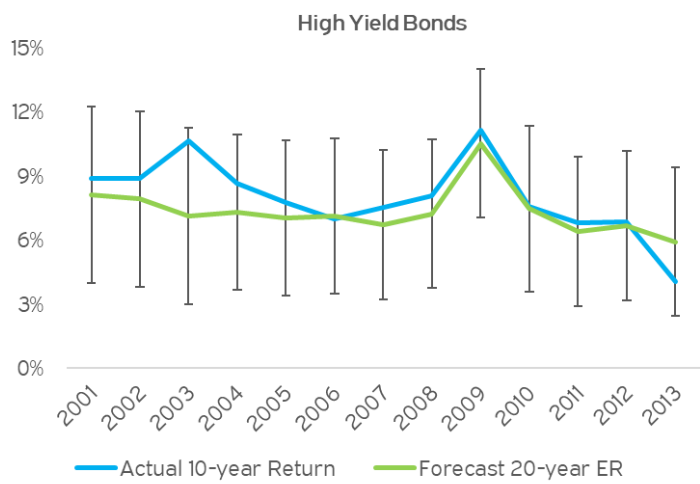
Asset Class	Horizon 10-Year Average (%)	Meketa 10-Year (%)	Horizon 20-Year Average (%)	Meketa 20-Year (%)
Cash Equivalents	3.4	3.1	3.2	2.9
TIPS	4.1	4.3	4.1	4.5
US Core Bonds	4.7	4.8	4.8	4.7
US High Yield Bonds	6.4	8.0	6.5	7.3
Emerging Market Debt	6.3	6.5	6.4	6.2
Private Debt	8.2	9.4	8.2	9.0
US Equity (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, and the 20-year horizon included 27 respondents. Figures are based on Meketa's 2023 CMEs.

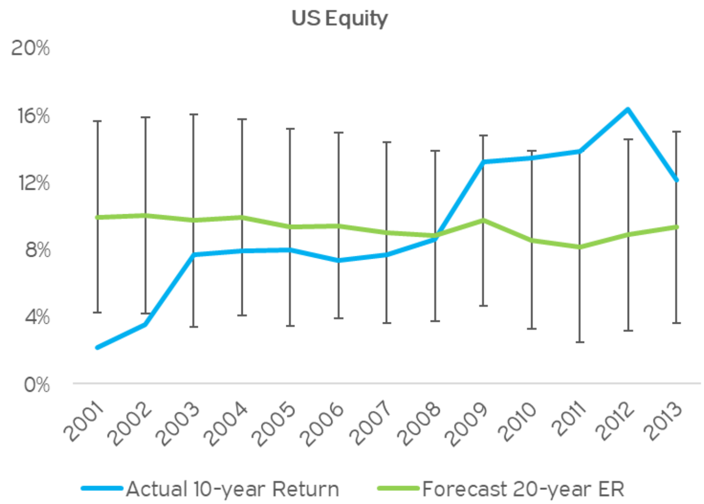
Our Track Record

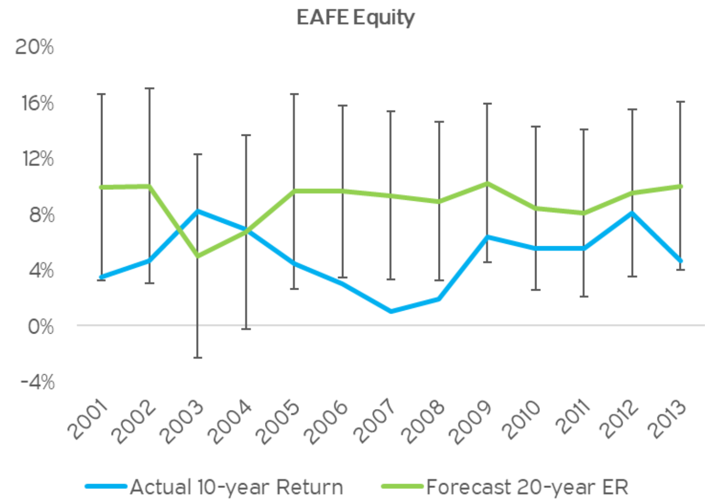


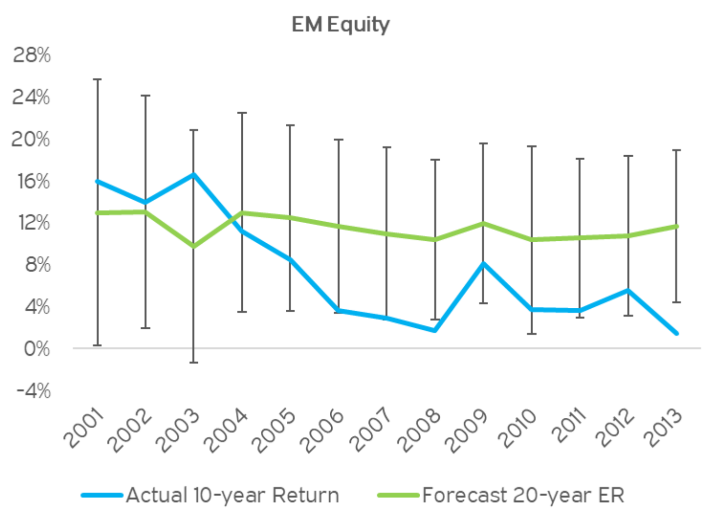




Our Track Record (continued)







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Actuarial Funding Policy Review

2023 Board of Investments Offsite

September 12, 2023

ACTUARIAL FUNDING POLICY REVIEW

Tuesday, September 12, 2023 – 2:45pm – 4:00pm*

Today's Discussion

Session Outline

1. Panel Discussion: *Ashley K. Dunning, Nossaman / Nick Collier, Milliman*
    - Purpose of a Funding Policy
    - Key elements of a Funding Policy
    - LACERA's Actuarial Funding Policy
    - Conclusion and Next Steps

Objectives

- What is the purpose of a funding policy? Why is it important? What is the legal framework?
- What are the necessary elements to incorporate into a funding policy? How do we make sure that our resources (current assets plus future contributions) match our liabilities (expected benefit payments)?
- What core elements has LACERA historically chosen to integrate into its funding policy?
- What are key principles for the BOI to consider in updating LACERA's Actuarial Funding Policy?

*Subject to change

Speaker Biographies

- **NOSSAMAN, LLP**
  - *Ashley K. Dunning – LACERA Fiduciary Counsel*
    Partner & Co-Chair, Pensions, Benefits & Investments Group
    - Primary Fiduciary and Board Governance advisor to more than 25 public retirement plans nationally
    - Lead counsel for pension plans in three California Supreme Court and six court of appeal published decisions upholding Board actions
    - History of industry service, including roles with the National Association of Public Pension Attorneys (Chair of Fiduciary & Governance Section, President, Board member); State Association of County Retirement Systems (Program Committee); and National Council on Teacher Retirement (Corporate Advisory Committee)
    - Named a Top 100 Lawyer by Daily Journal in 2023, 2022, and 2020
    - JD, UC College of the Law, San Francisco, Order of the Coif
    - BA, Yale University, Distinction in History, *cum laude*

Speaker Biographies

- **MILLIMAN**
  - *Nick Collier, ASA, EA, MAAA – Principal and Consulting Actuary*
    - 30 years of experience working almost exclusively with public sector retirement systems
    - Clients include Los Angeles County Employees Retirement Association, California State Teachers' Retirement System, Texas County & District Retirement System, San Mateo County Employees' Retirement Association and the Government of Guam Retirement Fund
    - Presenter at State Association of County Retirement Systems (SACRS) and California Association of Public Retirement Systems (CALAPRS)
    - Served on the California Actuarial Advisory Panel
    - BA, Mathematics and Economics, Claremont McKenna College

Purpose of Funding Policy

Purpose of Funding Policy

Overview

A Funding Policy is the list of priorities with respect to funding of retirement benefits. It also:

1. **Describes the BOI's goals** in funding the plan
2. **Explains legal parameters** governing the BOI and LACERA with respect to actuarial matters and funding
3. **Establishes the framework** to calculate contribution rates
4. **Explains and guides** LACERA's annual valuation and triennial experience study
5. **Explains the allocation** of realized gains and losses

Contrast to Valuation

- BOI annually considers and adopts a Valuation recommended by the Actuary
  - The Valuation explains how the system is funded
  - The Valuation also includes the contribution rates due from active members and participating employers
- A BOI *Funding Policy* may be adopted to provide a *principles-based* articulation of framework for funding LACERA benefits

Key Attributes

- Policy decisions are stated with applicable rationale
- Delegations are stated with oversight by the BOI
- Fiduciary framework within which the BOI operates with respect to funding under the California Constitution, CERL, and other applicable laws are articulated

Purpose of Funding Policy

What an Actuary Looks for in Pension Plan Funding

Plan to reach 100% Funded Ratio

- Provides benefit security for members
- Ultimately should result in lower contributions for employers
- Looks good to bond rating agencies

Reasonable period to pay off unfunded liability

- Balances funding progress and employer rate stability
- Equitable allocation of costs to generations of taxpayers (intergenerational equity)

Method to mitigate year-to-year volatility

- Maintain reasonably stable employer contribution rates

Cost method suitable to pension funding

- Allocate costs in a level manner

Elements of Funding Policy

Elements of Funding Policy

Core Elements

Funding Goal
- Funded Ratio equal to 100%
- Provide benefit security for members
- Maintain stable employer contributions that are as low as practicable
- Intergenerational equity

Actuarial Cost method
- Entry Age Normal cost method is typically used for public pension plans

Actuarial Asset method
- Avoid significant volatility in employer contribution rates

Amortization
- Amortization of Unfunded Actuarial Accrued Liability (UAAL): how to recognize a change in liability over time

Surplus Management
- If UAAL is fully paid off, what to do when the plan is over 100% funded

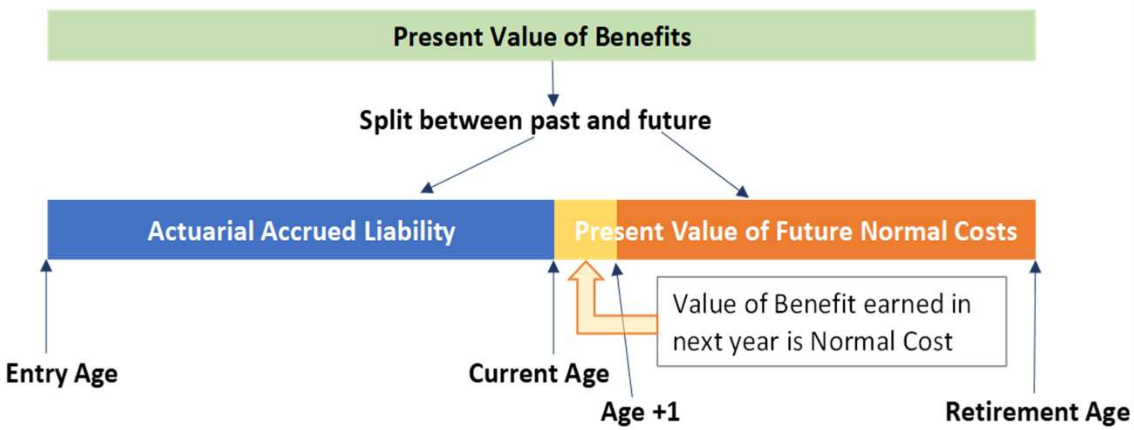
Elements of Funding Policy

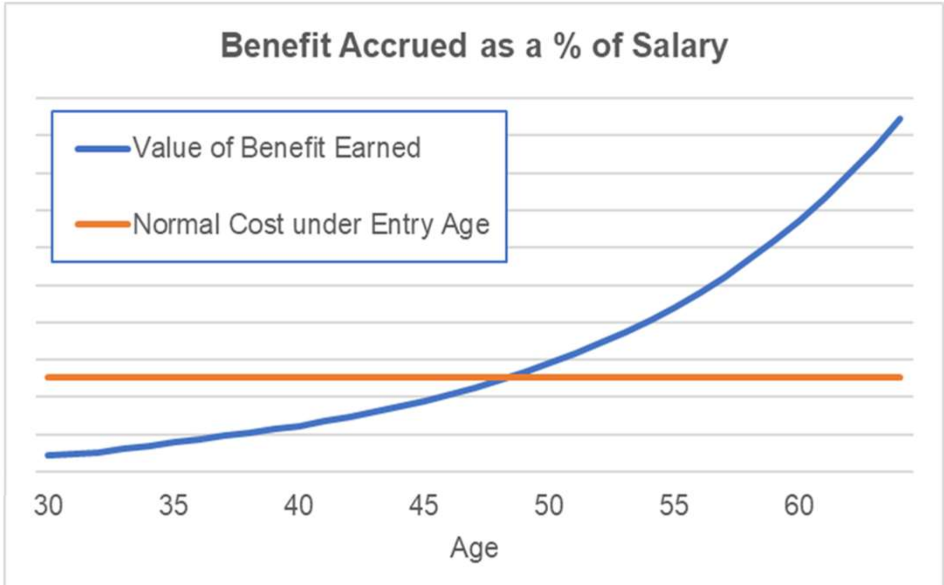
Actuarial Cost Method

Funding Policy specifies Entry Age cost method

- Used by 90% of public sector plans
- Produces a level Normal Cost Rate for an individual as a percent of pay
- Required for GASB* 67/68 valuations

Cost method is used to allocate the Present Value of Benefits of an individual into past and future





**The *Government Accounting Standards Board* (GASB) is a private non-governmental organization that creates accounting reporting standards, or generally accepted accounting principles (GAAP), for state and local governments in the U.S.*

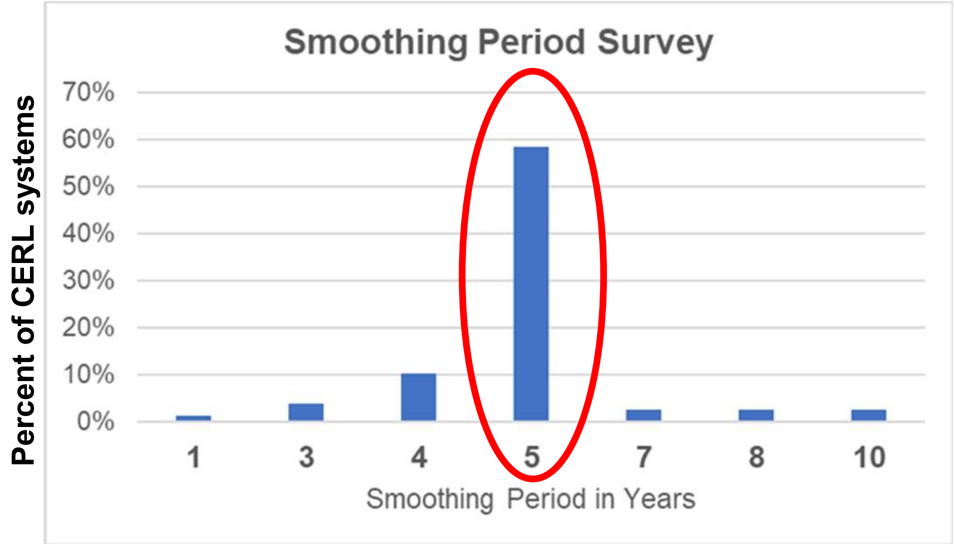
Elements of Funding Policy

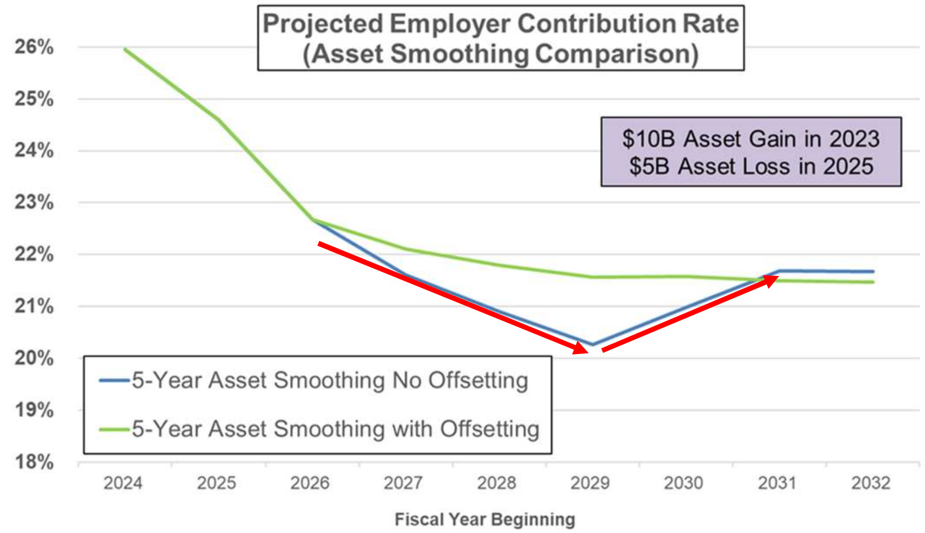
Actuarial Asset Method

Goal: smooth out year-to-year changes in employer contribution rates

Asset gains and losses (relative to assumed return):

- *5-year asset smoothing* is the most common among both CERL systems and other public retirement systems
- *Offsetting of gains and losses* is applied, which is expected to reduce the likelihood and magnitude of spikes or dips in employer contribution rates in most cases



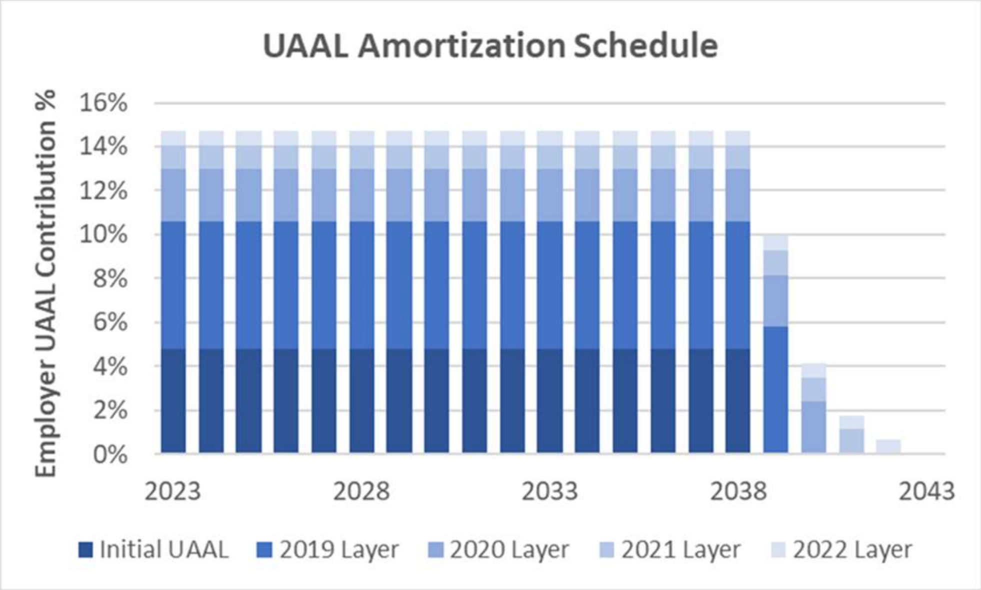


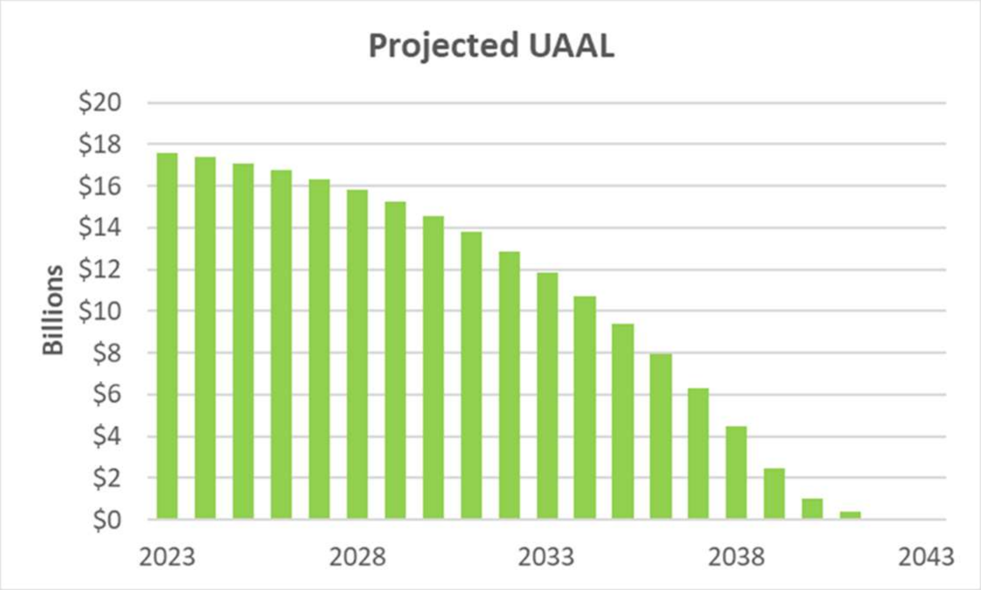
Elements of Funding Policy

Amortization Method to pay off UAAL

If an UAAL exists, LACERA's Funding Policy requires a contribution rate equal to:

- The Normal Cost Rate for the year
- A "minimum 30-year amortization" payment on the change in UAAL (i.e. one UAAL layer)
- The sum of the amortization payments for all previous UAAL layers expressed as a % of pay



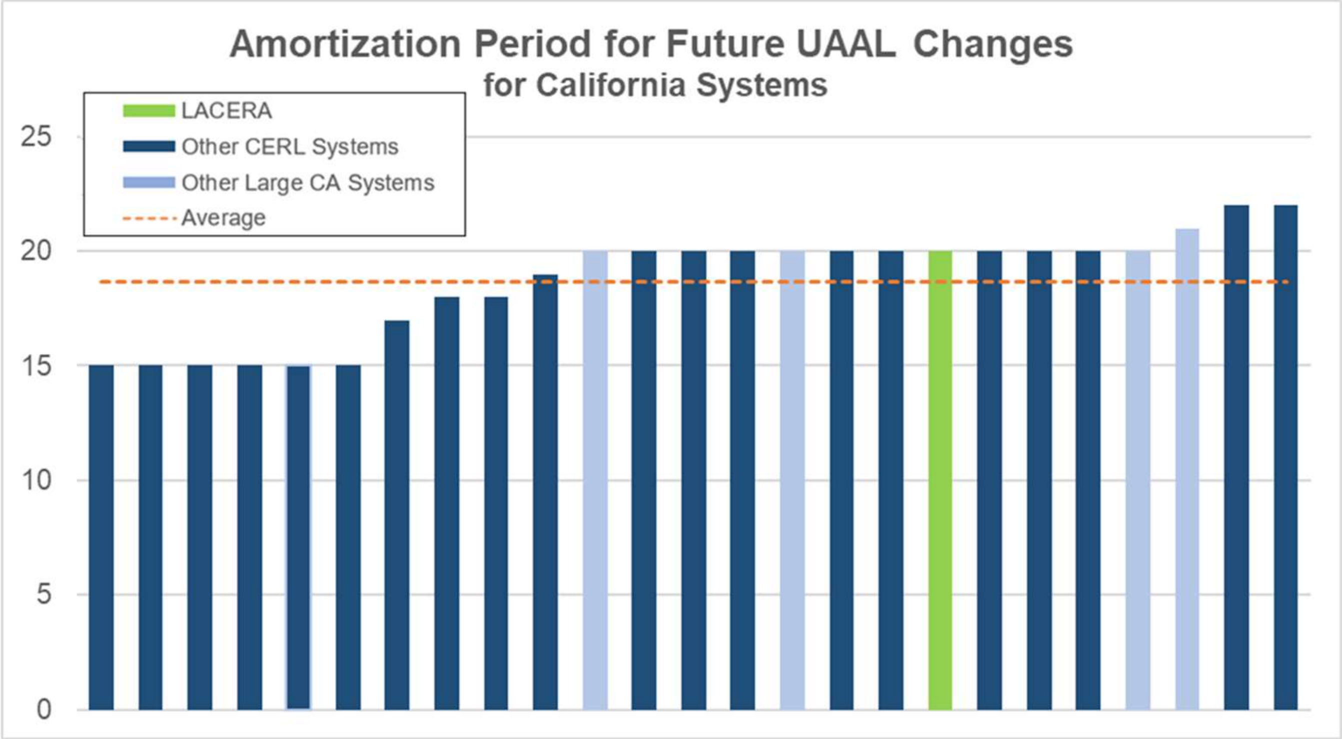


Elements of Funding Policy

Peer System Comparison – Core Actuarial Elements

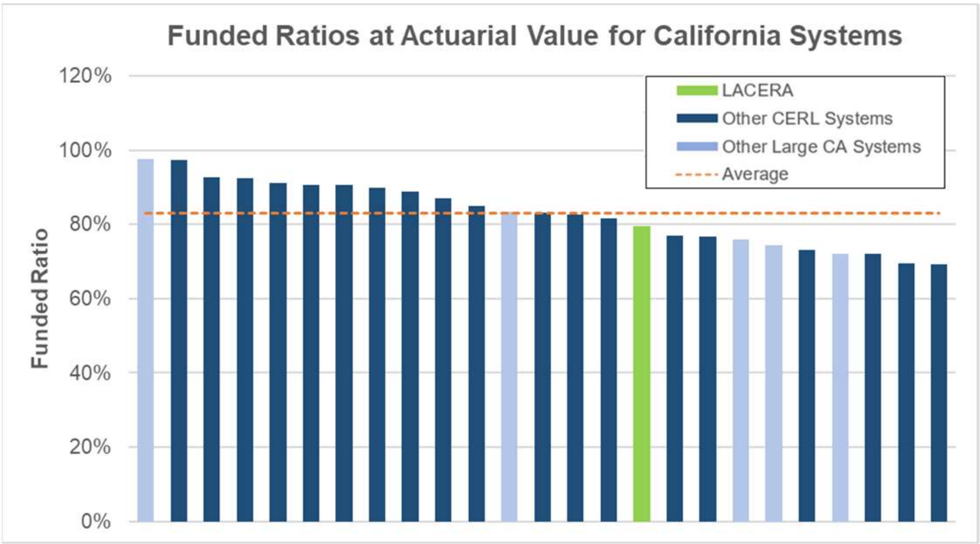
Key elements for LACERA are within range of other California systems

- All use Entry Age actuarial cost method
- Most use 5-year asset smoothing
- Most are level percentage of pay, layered, with periods from 15 to 20 years



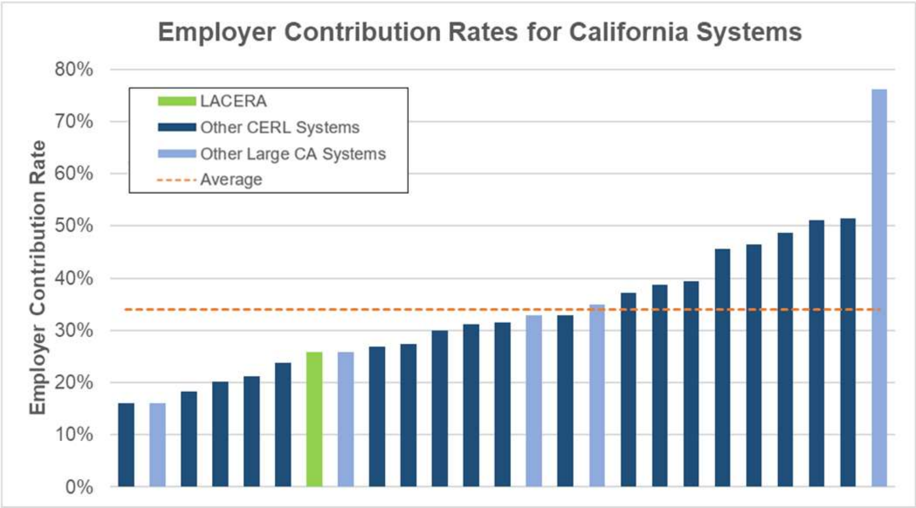
How Well has Funding Policy Achieved Its Goals

Peer System Comparison – Funding Metrics



LACERA's Funded Ratio is just below average compared to other California systems

Employer contribution rate is currently (and for the last decade plus) considerably lower than average compared to other California systems



LACERA Funding Policy

LACERA Funding Policy – History

1987

Pension Obligation Certificates
- Los Angeles County issued Pension Obligation Certificates (POCs) to reduce the retirement system liability
- LACERA used funding to purchase annuity contracts for small group of retirees

1993

Pension Bond Financing Resolution
- Board of Supervisors (BOS) adopted a Pension Obligation Bond (POB) financing resolution
- County decision to fully fund the retirement system

1994

Retirement System Funding Agreement
- BOS issued POBs to reduce LACERA's unfunded liability
- Los Angeles County and LACERA entered into an agreement with a 15-year term

2002

Retirement System Funding Agreement Amendment
- "Surplus funding" was introduced as LACERA's funded ratio exceeded 100% in late 1990s
- County's reduction of unfunded liabilities increased from 5-years to 30-years with rolling amortization

2009

Retirement Benefit Funding Policy
- Sunset of 1994 Agreement and 2002 Amendment
- Long-Term Funding Policy components included over/under funding, asset valuation, excess earnings, actuarial valuation cycle, and restricted reserves

2013

Retirement Benefit Funding Policy Amendment
- Conform to new standards mandated by PEPRA (California's Public Employees' Pension Reform Act of 2013)
- Prohibits reducing employer contributions below normal cost, unless plan's funded status exceeds 120%

LACERA Funding Policy – Implementation

Per CERL Section 31591, realized earnings are allocated through reserve accounts in a waterfall priority

Interest Crediting Policy

Priority 1: Member Reserves
- Interest posted to member accounts
- Contribution balances may receive up to 3.5%

Priorities 2-8: Employer & Contingency Reserves (CERL secs. 31592 & 31592.2)

Realized Earnings Analysis
- Performed as of June 30 and December 31

Reserves Waterfall

Contingency	Allocate prior period balance
Priority 1: Member	Realized Earnings: allocate 3.5% interest credit Based on Reserve balance for the 6-month period
Priority 2: Employer (Advance Contributions)	
Priority 3: Employer	
Priority 4: County Contribution Credit	
Priority 5: Employer	
Priority 6: Contingency	Allocate 1% of market value of assets
Priority 7: Employer	Realized Earnings: allocate 3.5% interest credit Based on Reserve balance for the 6-month period
Priority 8: Excess Earnings	Funded Ratio exceeds 120% Allocate Excess Earnings in accordance with PEPRA

LACERA Funding Policy – Implementation (continued)

Annually

LACERA engages an Actuary every year to:

- Perform a **Valuation** of plan liabilities and assets to measure funding progress (funded ratio)
- Review actuarial *assumptions* and *methods*, change if required
- Recommend adjustments to-
  - *Employer Contribution Rates*
  - *PEPRA Plan Contribution Rates*

Triennially

LACERA engages an actuary every three years to:

- Conduct an **Investigation of Experience** to measure the effectiveness of plan *assumptions* and valuation *methodologies*
- Provide a series of educational meetings
- Review actuarial *assumptions* and *methods* and adjust if necessary
- Perform **Valuation** with updated *assumptions* and *methods*, and recommend adjustments to-
  - *Employer Contribution Rates*
  - *Legacy Plan Contribution Rates*
- A second Actuary reviews triennial reports

LACERA Funding Policy – Structure

General Funding Policy Core Elements

Funding Goal
A Funded Ratio goal is meant to provide benefit security for members

Actuarial Methods
The actuarial **cost** method typically used by public pension plans is the Entry Age Cost Method. Actuarial **asset** methods include Smoothing and No-Smoothing approaches

Contribution Rate
A funding goal includes achieving and maintaining relatively stable employer contribution rates that are as low as possible

UAAL or Surplus
Amortization of UAAL recognizes a change in liability over time; typically, over a 15- to 20-year range. If UAAL is paid off, the surplus must be managed

LACERA Funding Policy Elements

100% Funded Ratio
LACERA's funding goal is a Funded Ratio equal to 100%

Cost and Asset Methods
LACERA uses the typical actuarial cost method of Entry Age and an asset method that smooths the value of fund assets over the typical period of 5 years

Relatively Stable
LACERA works to establish a contribution rate that is relatively stable over the long term and minimizes the size and volatility of employer contributions. A history of LACERA's Employer Contribution Rate is in the Appendix

Proactively Managed
LACERA calculates contribution rates as *level percentage of pay* while some systems use *level dollar amount*; over a 20-year period. If the UAAL is paid off and the plan is over 120% funded, LACERA manages the surplus in accordance with PEPRA

LACERA Funding Policy – Principles

Benefit Security and Risk Mitigation

The primary principle guiding actuarial funding of LACERA is ensuring that the plan can timely pay vested retirement and death benefits to the system's members and beneficiaries and mitigate risk in that regard.

Contribution Stability

Actuarial funding should be designed such that employer contributions will make up for any differences in actual assets from the funding target within a defined and reasonable period of time while seeking to mitigate year-to-year volatility in contribution rates.

Generational Equity

Actuarial funding also aims for contributions of employers and active members collectively to accumulate the present value of benefits for members by the time they retire.

Compliance with Legal Duties

The California Constitution, CERL, PEPRA, and applicable case law provide the BOI with legal authority, fiduciary responsibility, and certain statutory parameters regarding the actuarial funding of the pension fund. Those duties must be exercised in an actuarially sound manner.

Sound and Transparent Process

The JOGC Charter and BOI's Powers Reserved and Powers Delegated governance documents identify the BOI's reserved authority and delegated responsibilities with respect to actuarial funding. The Funding Policy provides additional transparency and explicit instructions, permitting the BOI to monitor delegated aspects of the actuarial funding process.

LACERA Funding Policy – Structural Considerations

Policy Update Opportunities

- Though LACERA's Actuarial Funding Policy covers the core elements of a general funding policy, there is opportunity to enhance LACERA's existing policy
- Initial reviews show the policy can be updated to a principles-based framework with greater legal- and process-related guidance
- The inter-relationship of LACERA's documents would need to be addressed if changes in one document impact the others
- Periodic policy reviews are recommended considering LACERA's most recent Funding Policy update occurred ten years ago

Framework Articulation	Principles-based articulation of framework for funding of LACERA retirement benefits
Legal Parameters	Framework to explain legal parameters governing LACERA's funding of benefits, setting of contribution rates, and crediting of earnings to reserves
Regular Processes	Framework to reflect and guide annual actuarial valuation process and triennial experience study, as well as to direct allocation of earnings to reserves
Impact of Changes	May consider impact of changes to Investment Policy Statement (IPS), or of investment market conditions, on plan funding, including short and long-term liquidity needs
Future Revisions	Should be revised periodically to implement funding policy best practices and to ensure legal, actuarial, and operational compliance.

Next Steps

Overview of a Funding Policy from various perspectives:

- Accounting
- Actuarial
- Investments
- Legal

Explore Board feedback and prepare a draft Funding Policy

Discuss and reflect changes

Updated Funding Policy

Appendix

Funding Policy Guidance: GFOA

- Government Finance Officers Association (GFOA) recommends that every state and local government that offers defined benefit pensions and/or OPEB formally adopt a funding policy that provides reasonable assurance that the cost of those benefits will be funded in an equitable and sustainable manner. Such a retirement benefits funding policy would need to incorporate the following principles and objectives:
  - Every government employer that offers defined benefit pensions or OPEB should obtain no less than biennially a reasonable actuarially determined contribution (ADC) to serve as the basis for its contributions to those respective plans;
  - The ADC should be calculated in a manner that fully funds the long-term costs of promised benefits, while balancing the goals of 1) keeping contributions relatively stable and 2) equitably allocating the costs over the employees' period of active service;
  - Every government employer that offers defined benefit pensions or OPEB should make a commitment to fund the full amount of the ADC each period;
  - Every government employer that offers defined benefit pensions or OPEB should demonstrate accountability and transparency by communicating all of the information necessary for assessing the government's progress toward meeting its pension funding objectives.

GFOA Guidance – Core Elements

- Actuarial cost method – entry age cost method is "especially well suited"
- Asset smoothing
  - Same period used for gains and losses; smoothed over fixed periods (typically 5 years)
- Amortization of Unfunded Actuarial Accrued Liability (UAAL)
  - Layered amortization with fixed closed periods selected so as to balance the goals of demographic matching (equitable allocation of cost among generations) and volatility management (funding at a level percentage of payroll)
  - Period should never exceed 25 years, but ideally fall in the 15-20 year range
- Surplus management (if UAAL is fully paid off)
  - Ensure that assumptions are up-to-date and reasonable
  - Evaluate possible risk reduction strategies
  - Consider limitations on contribution reductions

Pension Funding Task Force: Funding Policy Importance

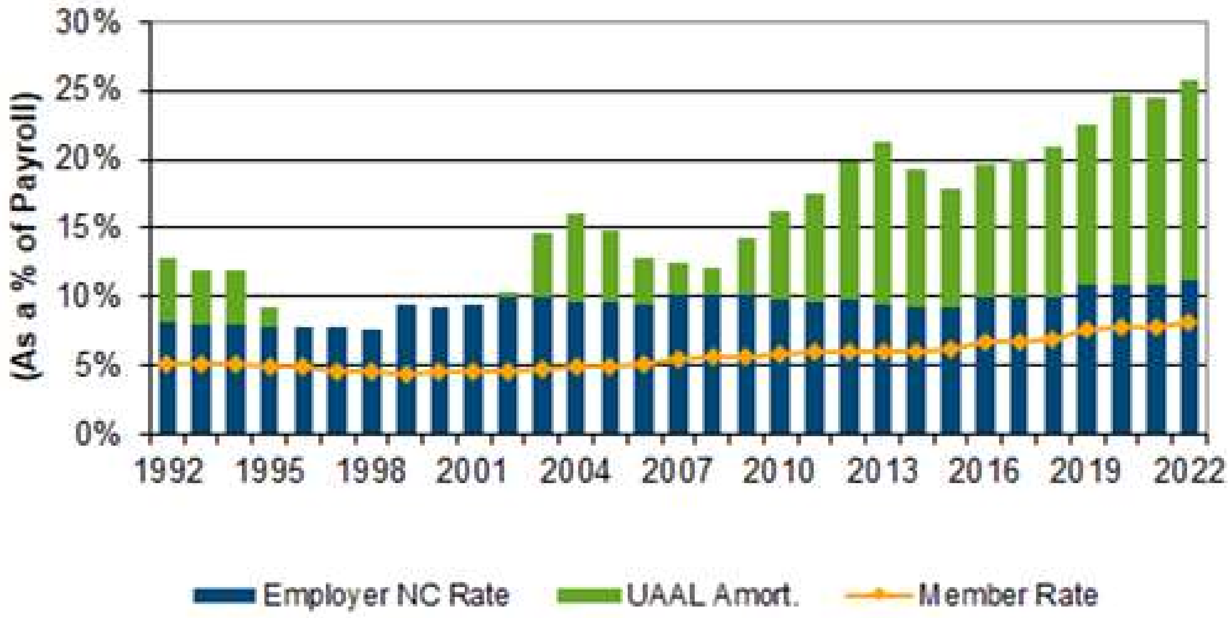
- National organizations representing the nation's governors, state legislatures, local officials and public finance professionals formed a Pension Funding Task Force and released "Pension Funding: A Guide For Elected Officials" in March 2013, which states that a clear pension funding policy is important because it:
  - Lays out a plan to fund pensions
  - Provides guidance in making annual budget decisions
  - Demonstrates prudent financial management practices
  - Reassures bond rating agencies
  - Shows employees and the public how pensions will be funded

Pension Funding Task Force: Funding Policy Objectives

- Five general policy objectives:
  - Have a pension funding policy that is based on an actuarially determined contribution
  - Build funding discipline into the policy to ensure that promised benefits can be paid
  - Maintain intergenerational equity so that the cost of employee benefits is paid by the generation of taxpayers who receives services
  - Make employer costs a consistent percentage of payroll
  - Require clear reporting to show how and when pension plans will be fully funded

LACERA Historical Data

LACERA Employer Contribution Rate History



Source: Milliman's 2022 Actuarial Valuation of Retirement Benefits Report, page 46.

LACERA Historical Data

LACERA Investment Performance / Funded Ratio

LACERA - Pension Fund		
Fiscal Year Ended	Investment Performance (Gross of Fees)	Funded Ratio
6/30/1983	44.9%	N/A [1]
6/30/1984	-2.8%	N/A
6/30/1985	31.3%	N/A
6/30/1986	24.9%	N/A
6/30/1987	12.6%	N/A
6/30/1988	1.8%	83.0%
6/30/1989	13.9%	82.3%
6/30/1990	11.5%	87.7%
6/30/1991	7.0%	81.5%
6/30/1992	12.7%	87.7%
6/30/1993	13.4%	82.4%
6/30/1994	4.3%	99.8%
6/30/1995	15.0%	100.7%
6/30/1996	16.6%	102.6%
6/30/1997	17.5%	101.3%
6/30/1998	15.0%	99.5%
6/30/1999	12.1%	103.3%
6/30/2000	15.3%	102.9%
6/30/2001	-5.2%	100.0%
6/30/2002	-5.6%	99.4%

LACERA - Pension Fund		
Fiscal Year Ended	Investment Performance (Gross of Fees)	Funded Ratio
6/30/2003	3.3%	87.2%
6/30/2004	16.4%	82.8%
6/30/2005	11.0%	85.8%
6/30/2006	13.4%	90.5%
6/30/2007	19.1%	93.8%
6/30/2008	-1.4%	94.5%
6/30/2009	-18.2%	88.9%
6/30/2010	11.8%	83.3%
6/30/2011	20.4%	80.6%
6/30/2012	0.3%	76.8%
6/30/2013	12.1%	75.0%
6/30/2014	16.8%	79.5%
6/30/2015	4.3%	83.3%
6/30/2016	1.1%	79.4%
6/30/2017	12.7% [2]	79.9%
6/30/2018	9.0%	80.6%
6/30/2019	6.4%	77.2%
6/30/2020	1.8%	76.3%
6/30/2021	25.2%	79.3%
6/30/2022	0.1%	79.6%
6/30/2023	6.4%	TBD

Notes:

[1] Data not available.

[2] Net of Fees, beginning in FYE 2017.

Data Sources:

Investment Office (Performance)

Actuarial Valuation Reports (Funded Ratio)

Glossary

- **Accrued Liability / Actuarial Accrued Liability (AAL):** That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.
- **Actuarial Asset Smoothing:** A method used to determine the Actuarial Values of Assets that reduces the effect of short-term market volatility while still tracking the overall movement of the market value of assets.
- **Actuarial Assumptions**: Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets. The Actuarial Assumptions fall in to two main categories: Demographic and Economic Assumptions.
- **Actuarial Methods**: Procedures used to determine the Actuarial Value of Assets; how the liabilities (value of promised benefit payments) are allocated to accrued and future; how the Unfunded Actuarial Accrued Liability is systematically paid down (amortization method); and other relevant items.
- **Actuarial Standards of Practice:** The Actuarial Standards Board sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

Glossary (continued)

- **Actuarial Valuation**: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.
- **Actuarial Value of Assets**: The value of cash, investments and other property belonging to a pension plan after reflection of Actuarial Asset Smoothing, as used by the actuary for the purpose of an Actuarial Valuation.
- **Alpha**: Actual investment return, if any, above the benchmark return.
- **Amortization Payment**: That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
- **Capital Market Assumptions (or Expectations):** Capital Market Assumptions are numerical expectations about the future performance of available asset classes that incorporate theories, observations and experience. Each asset class has an expected return, variance and correlation between other asset classes.
- **COLA**: LACERA retirement and survivor allowances are adjusted annually by the cost-of-living adjustment (COLA). The adjustment is based on changes in the cost of living over the previous 12-month period as of December 31.
- **COLA Bank**: Also referred to as the COLA Accumulation. The COLA Bank is the accumulation of annual CPI increases that exceed the COLA Cap. In years where the CPI increase is less than the COLA Cap, a withdrawal from the COLA Bank takes place to increase the actual COLA granted, up to the COLA Cap.

Glossary (continued)

- **COLA Cap (Maximum)**: LACERA retirees and beneficiaries cannot receive an annual COLA increase above the COLA Cap. For Plan A, the amount is 3%; for other plans the maximum is 2%.
- **CPI**: Consumer Price Index. Used to measure local and national price inflation.
- **Demographic Assumptions**: Assumptions as to the occurrence of future events specific to member experience, such as: mortality, withdrawal, disability, retirement, and changes in compensation in excess of General Wage Growth.
- **Discount**: The discount is the reduction that is applied to future cash flows (primarily benefit payments and contributions) to determine the present value as of the valuation date of those cash flows. For LACERA, the discount rate is equal to the investment return assumption.
- **Economic Assumptions:** Assumptions as to the occurrence of future events specific to economic factors, such as: investment returns, compensation increases related to inflation and productivity, and inflation.
- **Employer Contribution Rate**: Annual employer contribution calculated under LACERA's funding policy as a percent of payroll. The rate is a sum of contributions to fund the Normal Costs (net of member contributions) and the UAAL.
- **Employer Normal Cost Rate**: The Normal Cost Rate net of member contributions.
- **GASB**: Governmental Accounting Standards Board. Organization that establishes accounting and financial reporting standards for U.S. state and local governments that follow Generally Accepted Accounting Principles (GAAP)

Glossary (continued)

- **Inflation**: See Price Inflation.
- **Investigation of Experience**: Periodic review of Actuarial Assumptions to review recent experience and future forecasts. For LACERA, this is completed every three years
- **Layered Amortization Period**: Payment of each year's change in the Unfunded Actuarial Accrued Liability (UAAL) is amortized over separate closed periods. For LACERA, the original UAAL as of June 30, 2009 is being amortized over a closed 30-year period. Subsequent changes in the UAAL were amortized over new closed 30-year periods. Effective with the June 30, 2019 valuation all existing layers with more than 22 years remaining as of June 30, 2020 were re- amortized over closed 22-year periods. All new UAAL layers thereafter are amortized over closed 20-year periods beginning with the date the contribution is first expected to be made. All amortization payments are based on a level percent of pay.
- **Legacy**: Legacy plans are those plans that existed prior to the implementation of PEPRA. For LACERA, these are the following defined benefit plans: General Plans A, B, C & D and Safety Plans A & B.
- **Median Expected Return**: The numerical value that there is a 50% probability the actual return will exceed (and 50% probability it will fall short of) this value over a long-term time horizon on annualized geometric basis.
- **Merit Salary Increases:** Salary increases in excess of the General Wage Growth that are expected as a member moves through their career related to merit, promotion and longevity.

Glossary (continued)

- **Mortality Projection Scale:** A scale that is used to project future changes in mortality rates. A scale that project declines in future mortality rates is expecting increased life expectancies for future retirees.
- **Normal Cost Rate:** The value of benefits earned as a percent of pay calculated as a level percent of payroll from entry age
- **Payroll Growth:** The annual increase in the pensionable payroll used in the calculation of the UAAL amortization rate.
- **PEPRA**: The California Public Employees' Pension Reform Act (PEPRA) of 2013 specifies benefit provisions for LACERA General Plan G and Safety Plan C. It also governs certain provisions of other LACERA plans and places additional restrictions on employer contribution rates to be paid.
- **Price Inflation:** A sustained increase in the general level of prices for goods and services.
- **Price-to-Earnings (P/E) Ratio:** The price-to-earnings ratio is the ratio for valuing a company that measures its current share price relative to its earnings per share. P/E ratios are used by investors and analysts to determine the relative value of a company's shares in an apples-to-apples comparison.
- **Projected Benefits**: Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

Glossary (continued)

- **Real Rate of Return:** The portion of the expected investment return that is in excess of national Price Inflation.
- **Real Wage Growth:** The portion of General Wage Growth that is not related to local Price Inflation.
- **STAR Reserve**: Reserves accumulated for the payment of cost-of-living benefits as defined in California Government Code Section 31874.3. Supplemental Targeted Adjustment for Retirees (STAR) Benefits Supplemental cost-of-living payments to retired members to restore purchasing power at a specified percentage level, as described in California Government Code Section 31874.3.
- **Unfunded Actuarial Accrued Liability (UAAL)**: The excess, if any, of the Actuarial Accrued Liability over the Valuation Assets.
- **Valuation Assets:** Assets considered in the calculation of the UAAL contribution rate. Valuation assets are equal to Actuarial Value of Assets but net of certain non-valuation reserves (for the 2022 valuation, the non-valuation reserves are the Contingency Reserve and the STAR Reserve
- **Valuation Date:** The date upon which the Normal Cost, Actuarial Accrued Liability, and Actuarial Value of Assets are determined. Generally, the Valuation Date will coincide with the ending of a Plan Year.
- **Wage Growth**: See General Wage Growth.