Agenda

Marin County Employees' Retirement Association (MCERA)
Retirement Board Strategic Workshop

One McInnis Parkway, First Floor
San Rafael, CA
October 26-27, 2021

This meeting will be held via videoconference pursuant to MCERA Board of Retirement Resolution 2021-22/01, which invoked Government Code section 54953(e) for all MCERA Board and standing committee meetings through November 12, 2021.

Instructions for watching the meeting and/or providing public comment, as well as the links for access, are available on the How to Watch Meetings page of MCERA's website. Please visit https://www.mcera.org/retirementboard/agendas-minutes/watchmeetings for more information.

The Board of Retirement encourages a respectful presentation of public views to the Board. The Board, staff and public are expected to be polite and courteous, and refrain from questioning the character or motives of others. Please help create an atmosphere of respect during Board meetings.

Day 1
October 26, 2021

Meeting Chair Steven Block

9:00 a.m.
Call to Order/Roll Call

Open Time for Public Expression
Open time for public expression, from three to five minutes per speaker, on items not on the Board Agenda. While members of the public are welcome to address the Board during this time on matters within the Board's jurisdiction, except as otherwise permitted by the Ralph M. Brown Act (Government Code Sections 54950 et seq.), no deliberation or action may be taken by the Board concerning a non-agenda item. Members of the Board may (1) briefly respond to statements made or questions posed by persons addressing the Board, (2) ask a question for clarification, or (3) provide a reference to staff for factual information.

9:00 a.m. – 10:00 a.m.
Asset/Liability Study Update
Jay Kloepfer, Callan, Capital Markets Research

10:00 a.m. – 12:00 p.m.
June 30, 2021 Annual Actuarial Valuation Funding Methods and Discount Rate Review

- **Review of extraordinary investment return for fiscal year**
- **Discuss options for potential funding approach changes**
- **Discuss COVID-19 impacts on mortality projections**

Graham Schmidt, ASA, FCA, MAAA, EA Consulting Actuary, Cheiron

12:00 p.m. – 1:15 p.m.
Lunch Break

1:15 p.m. – 2:15 p.m.
China Investment Considerations
Cara LaFond
CFA, Managing Director, Multi-Asset Strategist, and Portfolio Manager
Wellington Asset Management

Josh Berger
CFA, CMT, Managing Director and Associate Director, Investment Product & Fund Strategies
Wellington Asset Management

Elise Douglas
CFA, Investment Analyst, Product & Fund Strategies
Wellington Asset Management

2:15 p.m. – 2:30 p.m.
Closing and Follow-up Items from Today's Agenda

Day 2
October 27, 2021

9:00 a.m.
Call to Order/Roll Call

Open Time for Public Expression

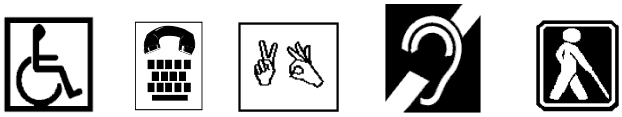
9:00 a.m. – 9:30 a.m.
Breakdown of MCERA Retiree Population by Location
Syd Fowler, Department Analyst
Jeff Wickman, Retirement Administrator

9:30 a.m. – 10:30 a.m.
Review of MCERA's Annual Processes and Contingencies
Michelle Hardesty, Assistant Retirement Administrator
Syd Fowler, Department Analyst

Closing and Follow-up Items from Today's Agenda
10:30 a.m. – 11:00 a.m.

Note on Process: Items designated for information are appropriate for Board action if the Board wishes to take action. Any agenda item from a properly noticed Committee meeting held prior to this Board meeting may be considered by the Board.

Note on Voting: As provided by statute, the Alternate Safety Member votes in the absence of the Elected General or Safety Member, and in the absence of both the Retired and Alternate Retired Members. The Alternate Retired Member votes in the absence of the Elected Retired Member. If both Elected General Members, or the Safety Member and an Elected General Member, are absent, then the Elected Alternate Retired Member may vote in place of one absent Elected General Member.



Agenda material is provided upon request. Requests may be submitted by email to MCERABoard@marincounty.org, or by phone at (415) 473-6147.

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The agenda is available on the Internet at http://www.mcera.org

Callan

October 26, 2021

MCERA Asset Liability Study Update

Jay Kloepfer
Capital Markets Research

Scope of the Project

Asset/Liability Study

Phase 1

- Review MCERA's current investment program
  - Strategic allocation to broad asset classes
  - Important to distinguish between "strategy" (i.e.—the target asset class/benchmark) and "implementation" (i.e.—the way the manager constructs the portfolio)
- Set asset class, portfolio expectations
  - Return, risk, correlation, and other considerations
  - Evaluate potential new asset classes/strategies

Phase 2

- Build integrated asset-liability model:
  - Reflect 6/30/2020 valuation results; confirm model assumptions, review with actuary. Roll valuation results forward to 6/30/21 to begin projections.
  - Deterministic projections – assume valuation assumptions are achieved
  - Simulation – apply Callan's capital market projections, insert capital market uncertainty, evaluate alternative investment strategies

Phase 3

- Develop preliminary asset-liability results
  - Confirm decision variables; ascertain risk tolerance and effective investment time horizon
  - Callan internal peer review of the study's results. Ongoing review and interaction with staff.
- Develop the final asset-liability study
  - Present finalized asset-liability results to MCERA Board of Trustees
  - MCERA Board selects an appropriate asset allocation

Proposed Timeline

Q3 2021

- Construct liability model in ProVal, starting with 2020 valuation results

October 2021-December 2021

- Callan presentation October 26: Overview of study process, review of current program, set capital market expectations, evaluate potential new strategies (Phase 1)
- Complete liability model, integrate asset mixes and develop projections and simulations (Phase 2)
- Review results with staff, actuary

January 2021

- Callan presentation: Deliver preliminary asset-liability study results for discussion with Board at January Board Meeting, focus on liability modeling (Phase 3). Consider alternative asset mixes

March 2021

- Callan presentation if needed: Deliver refined asset-liability study results. Complete study, adoption by Board

Callan

Process Overview

Callan's Capital Markets Projections

Guiding objectives and process

Cornerstone of a prudent process is a long-term strategic investment plan

- Capital markets projections are key elements — set reasonable return and risk expectations for the appropriate time horizon
- Projections represent our best thinking regarding the long-term (10-year) outlook, recognizing our median projections represent the midpoint of a range, rather than a specific number
- Develop results that are readily defensible both for individual asset classes and for total portfolios
- Be conscious of the level of change suggested in strategic allocations for long-term investors: DB plan sponsors, foundations, endowments, trusts, DC participants, families, and individuals
- Reflect common sense and recent market developments, within reason

Callan's forecasts are informed by current market conditions, but are not built directly from them

- Balance recent, immediate performance and valuation against long-term equilibrium expectations

Purpose of Asset and Liability Study

- The cornerstone of a prudent process for pension plan, endowment, and foundation trustees (and any individual investor) is a careful and thorough examination of their long-term strategic plan.
- Explicitly acknowledge change and uncertainty in the capital markets.
- Establish reasonable rate-of-return and risk expectations.
- Incorporate material changes in strategic plan policies and demographics
  - Funding policy, benefit formula, eligibility, early retirement, COLA, decrement tables
  - Board is currently in discussion with the plan actuary to evaluate discount rate, inflation, and funding policy changes
- Reflect changes in regulations
  - Public pension: GASB 67 and 68
- Project and evaluate impact on assets, liabilities and funded status.
- Confirm an investment policy to meet return and risk objectives in relation to funding, accounting and policy goals.
- If no material changes have occurred, an asset allocation review should still be conducted every 3 – 5 years.

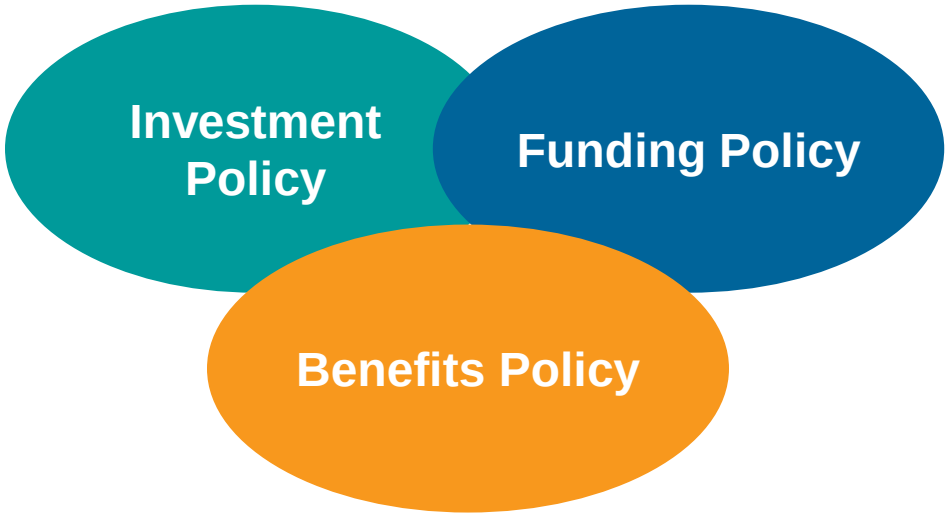
Where Does Asset Allocation Fit In Strategic Planning?

Integration of Key Operational Policies

We evaluate the interaction of the three key policies that govern a retirement plan with the goal of establishing the best investment policy

Investment Policy

- How will the assets supporting the benefits be invested?
- What risk and return objectives?
- How to manage cash flows?



Funding Policy

- How will the benefits/deficits be paid for (funded)?
- What are the actuarial assumptions to use?

Benefits Policy

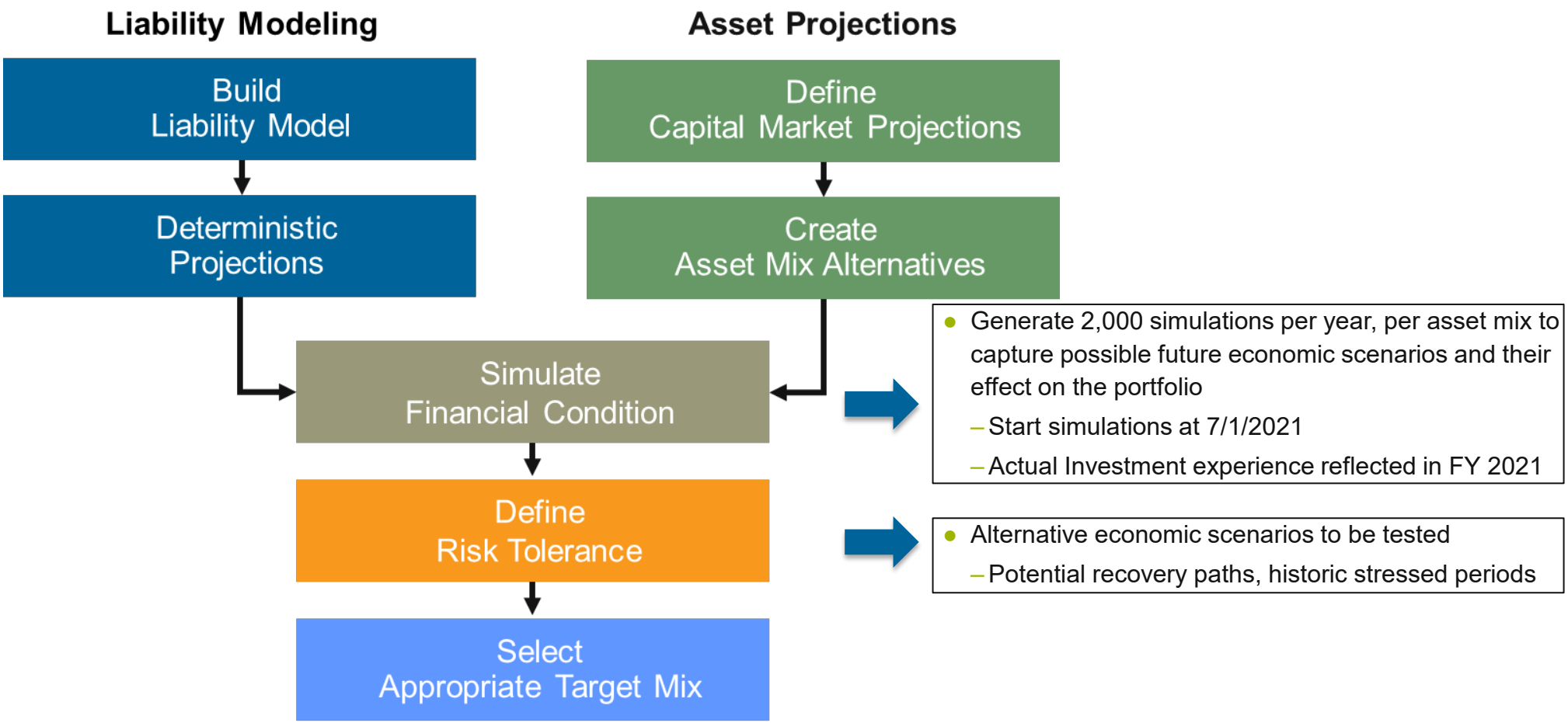
- What type/kind of benefits?
- What level of benefit?
- When and to whom are they payable?

Defining MCERA's Risk Tolerance

Factors Critical to Decision-Making

- Size of the Plan
- Current funded status
- Expected funding requirements
- Plan status (open to new participants; existing members still accrue benefits)
- Time horizon
- Liquidity needs:
  - Benefit payment less contributions
  - Funding policy can impact liquidity needs
- Liability growth rates
- Willingness to take risk:
  - Sensitivity to size of contribution or contribution volatility
- Financial ability to take risk

Callan Asset-Liability Process



Investment Policy Process

Broad Definitions are Most Appropriate for Asset Allocation Policy Analysis

- Investment policy study is focused on capital market risk and return
  - Asset allocation policy is based on acceptable asset classes and acceptable level of investment uncertainty
- An asset class is a group of securities or investment strategies that have similar financial characteristics; behave similarly in response to market conditions; and behave differently from the securities (or strategies) contained in other asset classes.

Equity	Fixed Income	Real Assets	Absolute Return
US Equity Non-US Equity Private Equity	Bonds Short Term Cash	Private Public	Private Public
US Large Cap US Mid/Small Cap Non-US Developed Non-US Emerging Private Equity	US Investment Grade Global Fixed Income	Private Real Estate Public Real Assets: REITs Commodities TIPS Natural Resource Equity	Hedge Funds Multi-Asset Class Strategies Liquid Alternatives

Liability Model and Key Actuarial Assumptions – 2020 Actuarial Valuation

Variable	Value
As of 6/30/2020	
Total Actuarial Liability	$3,124.8mm
Market Value of Valuation Assets	$2,625.3mm
Unfunded Actuarial Liability	$499.5mm
Market Funded Status	84.0%
Employer Contribution for FYE 2019	29.68%
Employer Contribution for FYE 2020	30.53%

Key Actuarial Assumptions	Description
Investment Return	6.75%
Price Inflation	2.50%
Salary Scale	3.0%, plus longevity & promotion
COLA	2%-4% caps, vary by plan and tier

- Asset-liability projections will be based on the 6/30/2020 actuarial report for the MCERA Plan
- 2020-21 investment experience will be reflected in projections; net return on Plan assets for FY 20 was 3.26%, and was substantially higher for FY 21 of 30.03%
- Employer contributions shown above are blended rates incorporating multiple plan groups and tiers, and reflect the employers' share of normal cost plus substantial contributions to pay down the unfunded actuarial liability.
- Employee contributions are in addition to the rates shown above, and vary by plan group.
- Board is considering changes to funding and contribution policy, in discussion with the plan actuary. Callan will incorporate the board's decisions in the asset-liability study.

Callan

2021 Capital Markets Expectations & Impact on MCERA Policy Target

Continued Surge in Global Equity Markets in 2Q21

Small cap leads in both U.S. and global ex-U.S. markets

Global equity continued to surge in 2Q

- Year-over-year returns from June are eye-popping:
  - *S&P 500: +41%*
  - *MSCI World ex-USA: +34%*
  - *Emerging Markets: +41%*
  - *U.S. Small Cap: +62% (!)*
- The recovery has been concentrated in a few stocks (FAANG + Friends), all U.S. mega cap.
- Market rotation to small cap and value with the flip from a "COVID trade" to a "GDP growth trade" in November
- Economic recovery now looking very strong in 2021, into 2022. Fed projects GDP growth of 7.0% in 2021, although 2Q came in at 6.6% and 1Q was revised down to 6.3%. Latest IHS forecast for Q3 is 3.4 (!)
- Initial distribution challenges and resistance to vaccination stalled the achievement of widespread inoculation in the U.S. Restricted availability of the vaccine outside the U.S. held back inoculation rates in countries around the globe.

Returns for Periods ended 6/30/21

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	8.24	44.16	17.89	14.70	9.87
S&P 500	8.55	40.79	17.65	14.84	9.76
Russell 2000	4.29	62.03	16.47	12.34	9.33
Global ex-U.S. Equity					
MSCI World ex USA	5.65	33.60	10.36	5.70	5.37
MSCI Emerging Markets	5.05	40.90	13.03	4.29	--
MSCI ACWI ex USA Small Cap	6.35	47.04	11.97	7.02	6.60
Fixed Income					
Bloomberg Barclays Aggregate	1.83	-0.33	3.03	3.39	5.14
90-day T-Bill	0.00	0.09	1.17	0.63	2.17
Bloomberg Barclays Long Gov/Credit	6.44	-1.86	5.45	7.30	7.48
Bloomberg Barclays Global Agg ex-US	0.92	4.60	1.63	0.99	3.79
Real Estate					
NCREIF Property	1.72	5.42	5.74	8.59	9.04
FTSE Nareit Equity	12.02	38.02	6.31	9.41	10.23
Alternatives					
CS Hedge Fund	3.02	16.60	5.63	4.24	7.05
Cambridge Private Equity*	9.48	54.21	18.83	15.07	15.52
Bloomberg Commodity	13.30	45.61	2.40	-4.44	1.31
Gold Spot Price	3.26	-1.61	6.05	1.66	6.33
Inflation - CPI-U	2.57	5.39	2.43	1.87	2.22

*Cambridge PE data through 03/31/21
Sources: Bloomberg, Bloomberg Barclays, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

MCERA Asset Classes - Return and Risk

Asset Class	10-Year Compound Return	Projected Standard Deviation	Real Return
Broad Domestic Equity	6.60%	17.95%	4.60%
Global ex-US Equity	6.80%	20.70%	4.80%
Domestic Fixed Income	1.75%	3.75%	-0.25%
Private Equity	8.00%	27.80%	6.00%
Real Assets	**5.55%**	**12.20%**	**3.55%**
Cash Equivalents	1.00%	0.90%	-1.00%

- Total Real Assets portfolio:
  - 8% private real estate, 7% public real assets
  - Public real assets = 25% TIPS, 25% Commodities, 25% REITs, 25% Natural Resource Equity
- The new Opportunistic allocation has a 0% target, so it is not included in these projections.

Source: Callan LLC

MCERA Asset Classes - Correlation

	Broad Domestic Equity	Global Ex-U.S. Equity	Domestic Fixed	Real Assets	Private Equity	Cash Equivalents	Inflation
Broad Domestic Equity	1.00						
Global Ex-U.S. Equity	0.82	1.00					
Domestic Fixed	-0.10	-0.12	1.00				
Real Assets	0.81	0.79	-0.07	1.00			
Private Equity	0.80	0.78	-0.19	0.71	1.00		
Cash Equivalents	-0.06	-0.10	0.15	-0.01	0.00	1.00	
Inflation	-0.01	0.01	-0.25	0.20	0.06	0.05	1.00

Source: Callan LLC

MCERA - 2021 Efficient Mixes

Real Assets Constrained to 15% of Portfolio

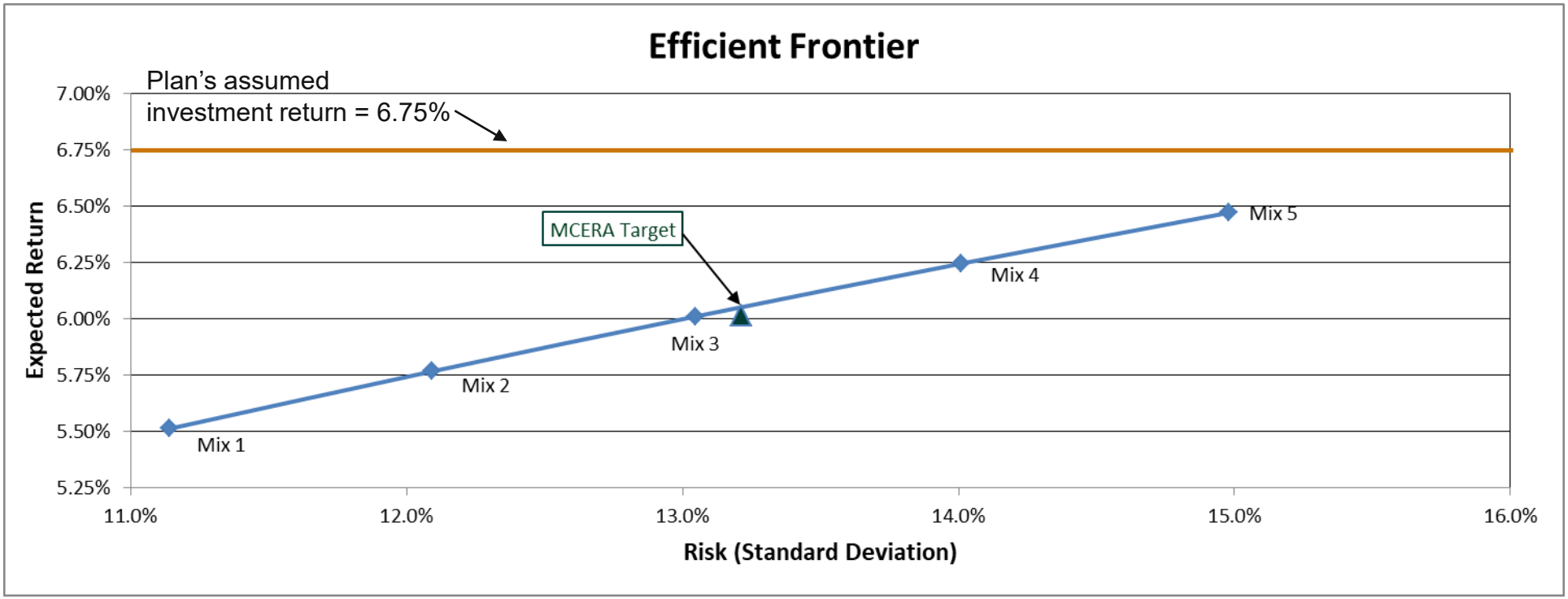
				Alternative Asset Mixes - 15% Real Assets				
Asset Class	MCERA Target	Min Alloc	Max Alloc	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US Equity	32%	0%	100%	24%	27%	29%	32%	34%
Broad International Equity	22%	0%	100%	16%	17%	19%	20%	22%
Broad US Fixed Income	23%	0%	100%	35%	30%	25%	20%	15%
Real Assets	15%	15%	15%	15%	15%	15%	15%	15%
Private Equity	8%	0%	100%	10%	11%	12%	13%	14%
Totals	**100%**			**100%**	**100%**	**100%**	**100%**	**100%**
Expected Return	6.0%			5.5%	5.8%	6.0%	6.2%	6.5%
Real Return	4.0%			3.5%	3.8%	4.0%	4.2%	4.5%
Risk (Standard Deviation)	13.2%			11.1%	12.1%	13.0%	14.0%	15.0%
% equity	62%			50%	55%	60%	65%	70%
% fixed income	23%			35%	30%	25%	20%	15%
% real assets	15%			15%	15%	15%	15%	15%

- Mixes are constrained to hold 15% real assets
- Maximum private equity allocation = 25% of public equity exposure
- No new asset classes included
- The current target mix is efficient and lies on the efficient frontier
- Real assets expands the real estate allocation category to include other real assets, all publicly traded: TIPS, commodities, natural resource equity and REITs. Real estate remains the core, with added diversification.

Source: Callan LLC

MCERA - 2021 Efficient Frontier – Nominal Return

Maximum Private Equity Allocation = 25% of Public Equity Exposure

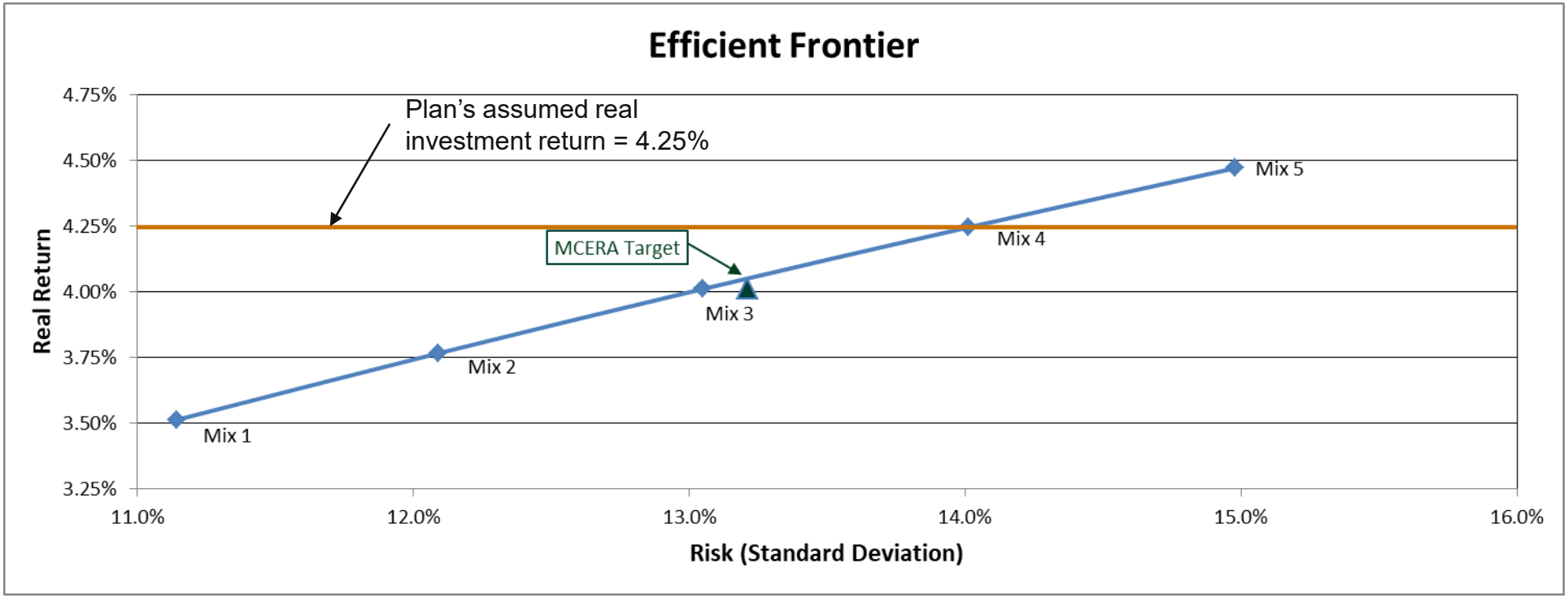


- MCERA's asset allocation target is an optimal allocation, since it lies on the efficient frontier depicting risk and return.
- Current target is a well-diversified portfolio that includes fixed income, public equity, private equity and real assets, including private real estate.

Source: Callan LLC

MCERA - 2021 Efficient Frontier – Real Return

Maximum Private Equity Allocation = 25% of Public Equity Exposure

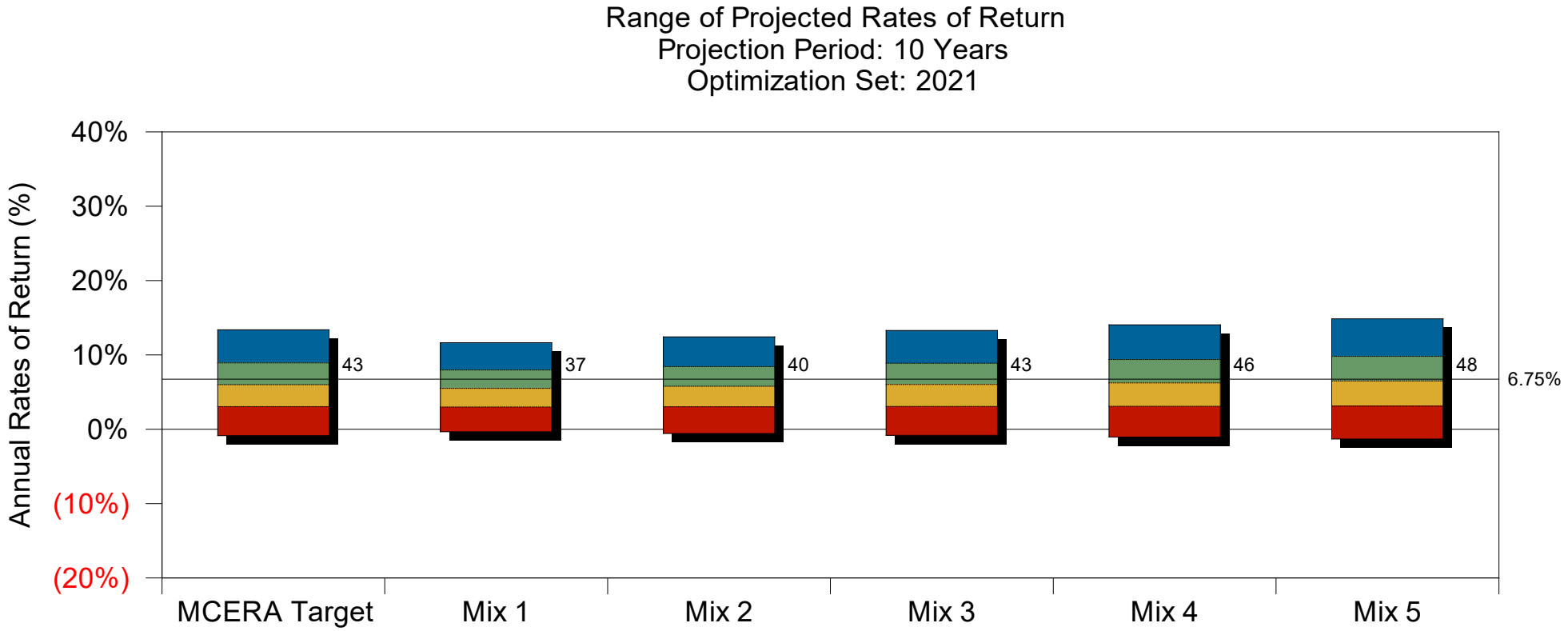


- MCERA's long term nominal return assumption of 6.75% and inflation assumption of 2.5% suggest a long term real return target of 4.25%.
- Callan's 10-year return expectation for the target asset allocation is 6.0%, and combined with our inflation assumption of 2.0%, yields a real return expectation of 4.0%, lower than the 4.25% assumed in the actuarial valuation.

Source: Callan LLC

Projected Rates of Return – Ten Years

Maximum Private Equity Allocation = 25% of Public Equity Exposure



	MCERA Target	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
5th Percentile	13.4%	11.7%	12.4%	13.3%	14.1%	14.9%
25th Percentile	8.9%	8.0%	8.4%	8.9%	9.4%	9.8%
Median	6.0%	5.5%	5.8%	6.0%	6.3%	6.5%
75th Percentile	3.1%	3.0%	3.0%	3.1%	3.1%	3.1%
95th Percentile	(0.8%)	(0.3%)	(0.6%)	(0.8%)	(1.0%)	(1.3%)
Prob > 6.75%	43.0%	36.6%	39.9%	43.0%	45.5%	47.9%

Source: Callan LLC

2021 Capital Market Expectations – Nominal vs Real

Modest Return Expectations Across All Asset Classes

- The expected return for the MCERA Policy Target Mix is 6.0%, 75 bps below the 6.75% return assumed in the actuarial valuation.
- The Plan has a reasonable chance of achieving this result over 10 years (43% probability). Looking to the real return, the gap is smaller. The real return embedded in the valuation (6.75% - 2.5% inflation = 4.25%) is 25 bps higher than Callan's expected real return (6.0% - 2.0% inflation = 4.0%).
- While return expectations are low relative to long-term history for the next five- to ten-year horizon, MCERA will need to retain a strong orientation toward risk assets (equity) in pursuit of return to achieve its funding goals.
- Whether the plan should pursue more or less exposure to risk assets than the current policy target mix should not be unduly influenced by subdued expectations for the shorter-term 5-10 year horizon. We do not believe investors are likely to be compensated for greater risk taking in the shorter term.

Callan

Integration of Assets and Liabilities and the Final Study

Asset/Liability Study Process

Liability Model and Projected Cash Flows

Pension Plan Equation: Benefits + Expenses = Investment Return + Contributions

Callan builds the liability model

- Uses data from plan actuary (Segal)

Liability Assumptions

- Funding Policy
  - Employee contributions
  - Employer contributions
- Benefit Policy
  - Benefit formulas
  - Cost of living increases
- Demographics
  - Ratio of Active vs Retirees
  - Average age
  - Population growth
  - Salary increases
  - Mortality table – longevity risk management
  - Discount rate

Asset/Liability Study

Simulate Financial Condition

- Asset mixes are compared and evaluated on both absolute and relative basis.
  - Absolute measures are used to evaluate objectives: returns, funded ratios.
  - Relative measures compare probable outcomes across asset mixes.
- Asset mixes are analyzed through the use of simulated returns.
  - Values are based on 2,000 simulated returns over a 10-year projection time period.
  - Median results represent the mid point of the simulated outcomes (1,000 returns worse, 1,000 better).
  - 95th percentile results represent the highest return of the worst 5% of simulations.
  - Forecast range of returns is used to show the probable ranges of contributions and funded status.
- Observe patterns of results across Asset Mixes
  - Focus is on Median and 95th percentile market values, returns and funded ratios.

Key Decision Variables to Consider

- The range of actuarial liability
- Present value of future contributions
- Range of the market (or actuarial) value of Plan assets
- Funded Ratio
- Liquidity and cash flow needs
- Present value of future unfunded liability
- Ultimate Net Cost
  - Ultimate net cost combines contributions paid in over the planning horizon plus the value of the unfunded liability at the end of the projection period.

Summary Comments

Considerations in the selection of the Investment Policy

- Financial strength of the Plan Sponsor
  - Contribution volatility
- Financial strength of the Plan
  - Funded Status: Assets/Liabilities
- Investment goals & objectives
  - Absolute return
  - Relative return
  - Funded status
- Time Horizon
- Liquidity needs
- Risk tolerance of decision makers
  - Volatility of short term results

Defining Risk Tolerance

Factor	Public Pension and Taft-Hartley	Corporate Pension	Endowment and Foundation
Investment Goal	✓	✓	✓
Time Horizon	✓	✓✓	✓
Liquidity Needs	✓	✓	✓
Willingness to take Risk	✓	✓	✓
Size of Plan/Fund relative to Sponsor	✓	✓✓	✓
Financial Strength of Sponsor	✓	✓✓	✓
Absolute Return Target	✓✓✓		✓✓✓
Projected Funded Status	✓✓	✓	
Contribution Volatility	✓✓	✓	
Liability Characteristics	✓	✓✓	
Financial Statement Sensitivity		✓	
Permissible Investments	✓		
Spending Volatility			✓
Peer Group Comparison	✓	✓	✓

Summary

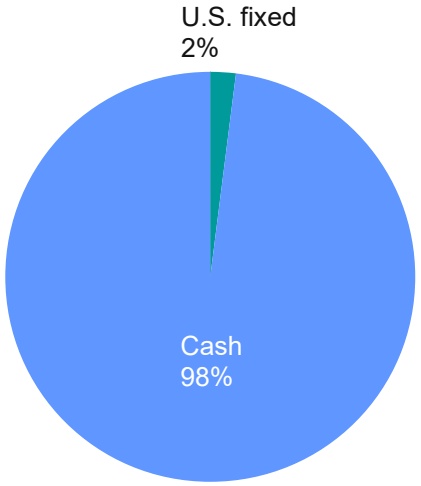
- The asset/liability study will enable MCERA to evaluate the financial condition of the pension plan under alternative investment scenarios into the future.
- Only modest changes have been made to funding and benefit policy since the last asset/liability study in 2017; study will fully incorporate these changes and reflect the valuation and projection results of the actuary.
- Key actuarial assumptions will be included as Callan develops our liability projection model:
  - Mortality/longevity
  - Salary growth
  - Assumed rate of return
- The modeling process will begin using the 2020 valuation
  - The 6/30/2021 asset results will be incorporated (net return of 30.03%)
  - Liabilities and assets rolled forward to 6/30/2021
  - Incorporate expected changes to liabilities stemming from any assumption or policy changes adopted by the Board
    - Discount rate, inflation, real return
    - Resetting amortization bases, or amortizing the 2020-21 investment gain over a different time period
    - Contingency reserve

Callan

Appendix

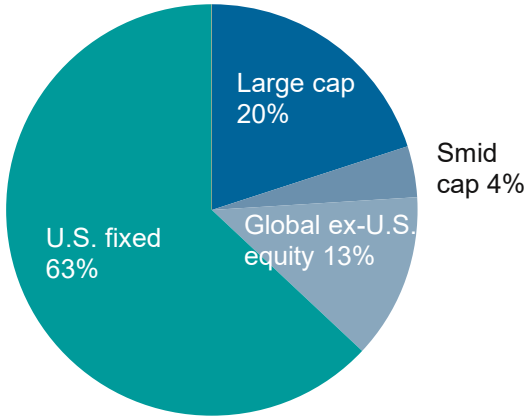
7% Expected Returns Over Past 30+ Years

Increasing Complexity



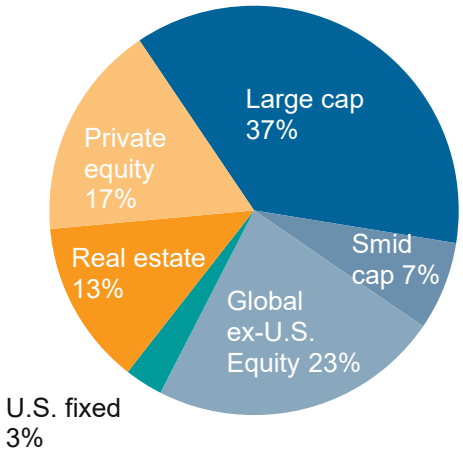
1991

Return: **7.0%**
Risk: **1.1%**



2006

Return: **7.0%**
Risk: **6.7%**



2021

Return: **7.0%**
Risk: **17.3%**

Increasing Risk

In 1991, our expectations for cash and broad U.S. fixed income were 6.95% and 8.95%, respectively

Return-seeking assets were not required to earn a 7% projected return

15 years later, an investor would have needed over a third of the portfolio in public equities to achieve a 7% projected return, with 6x the portfolio volatility of 1991

Today an investor is required to include 97% in return-seeking assets to earn a 7% projected return at almost 16x the volatility compared to 1991

Source: Callan LLC

2021–2030 Callan Capital Markets Assumptions

Asset Class	Index	Projected Return			Projected Risk	Projected Yield
		1-Year Arithmetic	10-Year Geometric*	Real	Standard Deviation	
Equities						
Broad U.S. Equity	Russell 3000	8.00%	6.60%	4.60%	17.95%	1.95%
Large Cap U.S. Equity	S&P 500	7.85%	6.50%	4.50%	17.70%	2.00%
Smid Cap U.S. Equity	Russell 2500	8.75%	6.70%	4.70%	21.30%	1.75%
Global ex-U.S. Equity	MSCI ACWI ex USA	8.70%	6.80%	4.80%	20.70%	2.80%
Developed ex-U.S. Equity	MSCI World ex USA	8.25%	6.50%	4.50%	19.90%	3.00%
Emerging Market Equity	MSCI Emerging Markets	9.80%	6.90%	4.90%	25.15%	2.35%
Fixed Income						
Short Duration Gov't/Credit	Bloomberg Barclays 1-3 Yr Gov / Credit	1.50%	1.50%	-0.50%	2.00%	1.55%
Core U.S. Fixed	Bloomberg Barclays Aggregate	1.80%	1.75%	-0.25%	3.75%	2.50%
Long Government	Bloomberg Barclays Long Government	1.35%	0.60%	-1.40%	12.50%	3.00%
Long Credit	Bloomberg Barclays Long Credit	2.95%	2.45%	0.45%	10.50%	4.65%
Long Government/Credit	Bloomberg Barclays Long Gov / Credit	2.30%	1.80%	-0.20%	10.35%	4.00%
TIPS	Bloomberg Barclays TIPS	1.80%	1.70%	-0.30%	5.05%	2.35%
High Yield	Bloomberg Barclays High Yield	4.85%	4.35%	2.35%	10.75%	6.70%
Global ex-U.S. Fixed	Bloomberg Barclays Global Agg xUSD	1.15%	0.75%	-1.25%	9.20%	1.80%
Emerging Market Sovereign Debt	EMBI Global Diversified	3.90%	3.50%	1.50%	9.50%	5.95%
Alternatives						
Core Real Estate	NCREIF ODCE	6.60%	5.75%	3.75%	14.10%	4.40%
Private Infrastructure	MSCI Global Infra / FTSE Dev Core 50/50	7.00%	6.00%	4.00%	15.45%	4.60%
Private Equity	Cambridge Private Equity	11.50%	8.00%	6.00%	27.80%	0.00%
Private Credit	n/a	7.15%	6.25%	4.25%	14.60%	6.25%
Hedge Funds	Callan Hedge FOF Database	4.25%	4.00%	2.00%	8.00%	0.00%
Commodities	Bloomberg Commodity	3.80%	2.25%	0.25%	18.00%	2.00%
Cash Equivalents	90-Day T-Bill	1.00%	1.00%	-1.00%	0.90%	1.00%
Inflation	CPI-U		2.00%		1.50%	

* Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).

2021–2030 Capital Markets Assumption Correlations

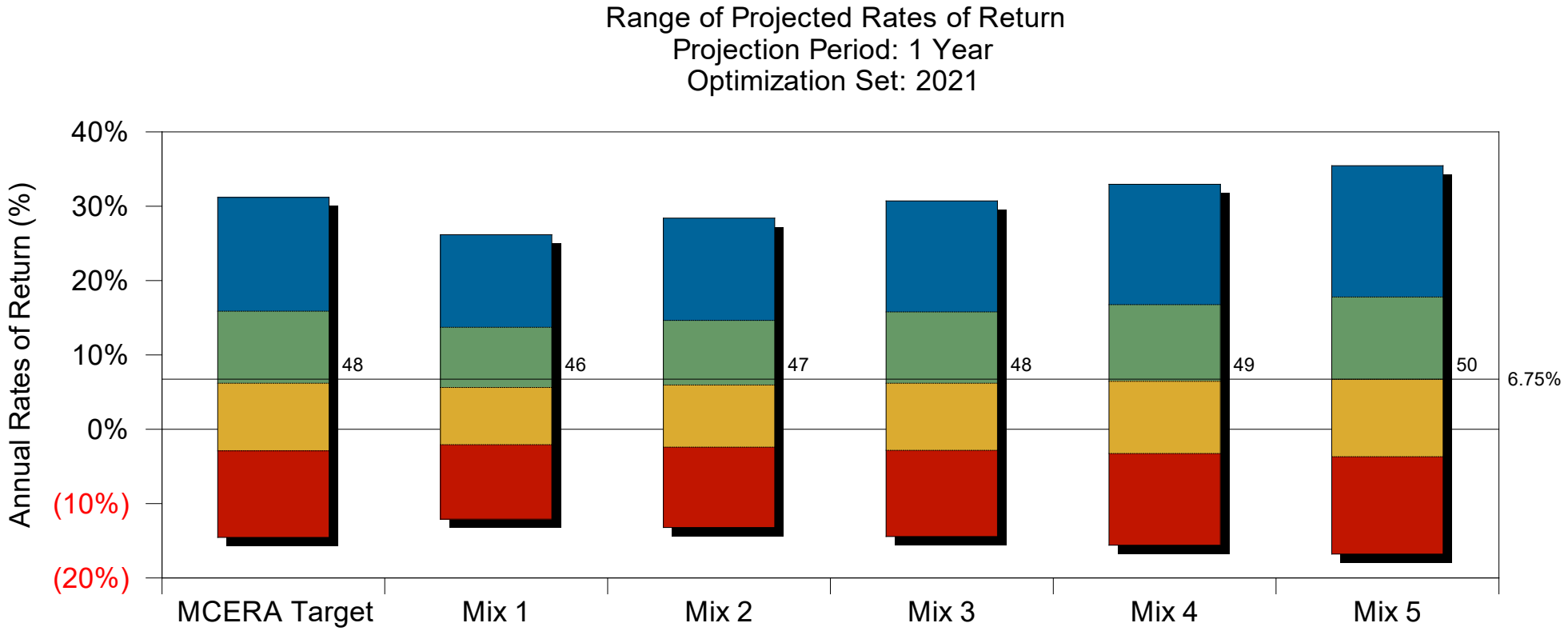
	Broad U.S. Equity	Large Cap	Smid Cap	Gl ex-U.S. Equity	Dev ex-U.S. Equity	Em Market Equity	Short Dur	Core U.S. Fixed	Long Gov	Long Credit	Long Gov / Credit	TIPS	High Yield	Global ex-U.S. Fixed	Em Market Debt	Core Real Estate	Private Infra	Private Equity	Private Credit	Hedge Funds	Comm	Cash Equiv	Inflation
Broad U.S. Eq	1.00																						
Large Cap	1.00	1.00																					
Smid Cap	0.93	0.90	1.00																				
Gl ex-U.S. Equity	0.82	0.81	0.80	1.00																			
Dev. ex-U.S. Eq	0.78	0.77	0.77	0.98	1.00																		
Em Market Eq	0.80	0.79	0.76	0.93	0.84	1.00																	
Short Duration	-0.06	-0.06	-0.08	-0.08	-0.06	-0.10	1.00																
Core U.S. Fixed	-0.10	-0.10	-0.12	-0.12	-0.11	-0.14	0.81	1.00															
Long Gov	-0.15	-0.15	-0.16	-0.15	-0.13	-0.16	0.67	0.84	1.00														
Long Credit	0.27	0.28	0.25	0.26	0.26	0.24	0.64	0.80	0.69	1.00													
Long Gov / Cr	0.09	0.09	0.07	0.09	0.09	0.07	0.71	0.88	0.90	0.94	1.00												
TIPS	-0.08	-0.08	-0.08	-0.09	-0.09	-0.10	0.56	0.65	0.53	0.52	0.57	1.00											
High Yield	0.72	0.71	0.68	0.71	0.69	0.69	-0.01	0.00	-0.08	0.40	0.20	0.06	1.00										
Gl ex-U.S. Fixed	0.01	0.01	0.00	0.06	0.05	0.08	0.48	0.50	0.42	0.49	0.50	0.40	0.12	1.00									
Em Market Debt	0.53	0.53	0.51	0.56	0.52	0.58	0.08	0.12	0.05	0.35	0.24	0.18	0.60	0.15	1.00								
Core Real Estate	0.71	0.71	0.66	0.67	0.66	0.63	-0.01	-0.04	-0.09	0.24	0.10	-0.02	0.53	-0.02	0.36	1.00							
Private Infra	0.72	0.72	0.67	0.69	0.68	0.65	0.00	0.01	-0.03	0.27	0.15	-0.02	0.50	0.03	0.35	0.76	1.00						
Private Equity	0.80	0.80	0.76	0.78	0.76	0.74	-0.10	-0.19	-0.21	0.15	-0.01	-0.14	0.59	0.06	0.43	0.60	0.62	1.00					
Private Credit	0.74	0.73	0.70	0.72	0.70	0.69	0.00	-0.06	-0.10	0.28	0.12	-0.09	0.63	0.06	0.48	0.56	0.52	0.68	1.00				
Hedge Funds	0.78	0.78	0.73	0.76	0.74	0.73	0.10	0.14	0.07	0.39	0.27	0.09	0.64	0.05	0.55	0.52	0.47	0.60	0.61	1.00			
Commodities	0.26	0.26	0.25	0.25	0.25	0.25	-0.10	-0.10	-0.10	0.01	-0.04	0.10	0.15	0.15	0.19	0.21	0.18	0.23	0.17	0.23	1.00		
Cash Equiv	-0.06	-0.06	-0.08	-0.10	-0.10	-0.10	0.30	0.15	0.08	-0.05	0.01	0.12	-0.11	0.00	-0.07	0.00	-0.07	0.00	-0.06	-0.04	-0.02	1.00	
Inflation	-0.01	-0.02	0.02	0.01	0.00	0.03	-0.21	-0.25	-0.23	-0.25	-0.26	0.08	0.05	-0.10	0.00	0.10	0.06	0.06	0.06	0.15	0.29	0.05	1.00

- Relationships between asset classes are as important as standard deviation
- To determine portfolio mixes, Callan employs mean-variance optimization
- Return, standard deviation, and correlation determine the composition of efficient asset mixes

Source: Callan LLC

Projected Rates of Return – One Year

Maximum Private Equity Allocation = 25% of Public Equity Exposure

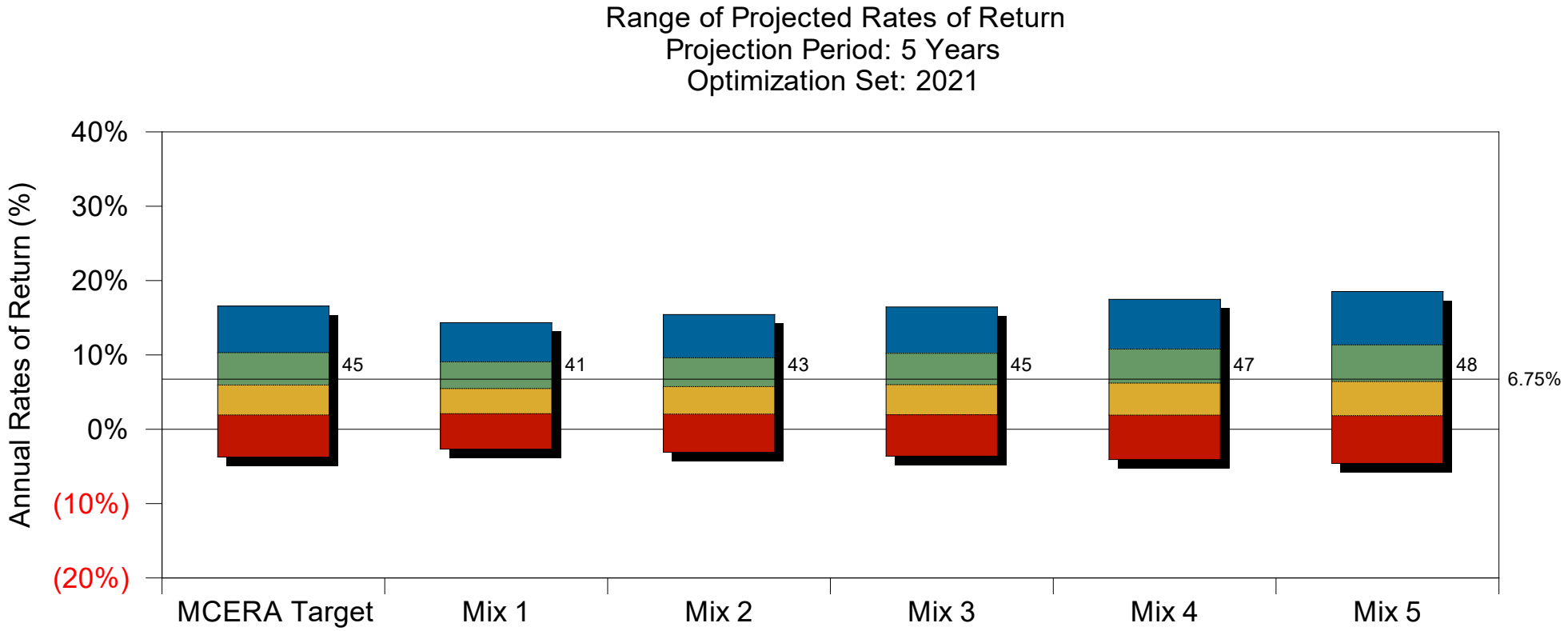


	MCERA Target	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
5th Percentile	31.2%	26.2%	28.4%	30.7%	33.0%	35.5%
25th Percentile	15.9%	13.7%	14.6%	15.8%	16.8%	17.8%
Median	6.2%	5.6%	6.0%	6.2%	6.5%	6.7%
75th Percentile	(2.9%)	(2.0%)	(2.4%)	(2.8%)	(3.3%)	(3.7%)
95th Percentile	(14.5%)	(12.1%)	(13.2%)	(14.4%)	(15.6%)	(16.8%)
Prob > 6.75%	48.4%	46.1%	47.1%	48.2%	49.3%	50.0%

Source: Callan LLC

Projected Rates of Return – Five Years

Maximum Private Equity Allocation = 25% of Public Equity Exposure



	MCERA Target	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
5th Percentile	16.6%	14.3%	15.4%	16.5%	17.5%	18.5%
25th Percentile	10.3%	9.1%	9.6%	10.2%	10.8%	11.4%
Median	6.0%	5.5%	5.8%	6.0%	6.2%	6.4%
75th Percentile	1.9%	2.1%	2.1%	2.0%	1.9%	1.8%
95th Percentile	(3.7%)	(2.7%)	(3.1%)	(3.6%)	(4.1%)	(4.6%)
Prob > 6.75%	45.0%	40.6%	42.8%	45.1%	46.9%	48.5%

Source: Callan LLC

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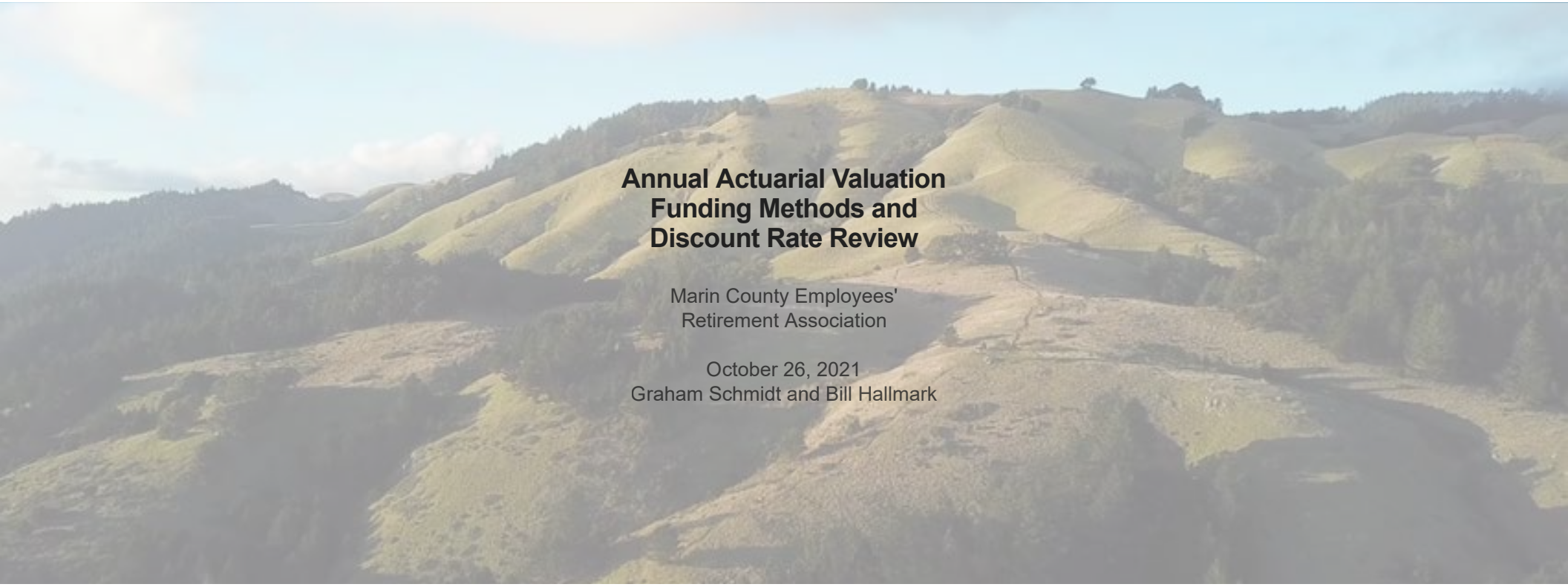
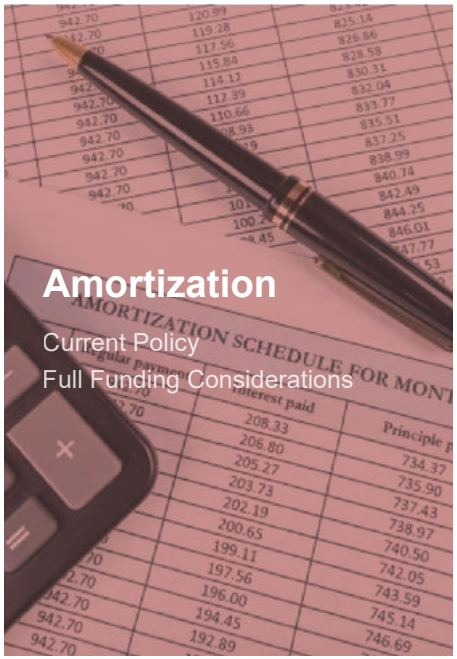


Annual Actuarial Valuation Funding Methods and Discount Rate Review

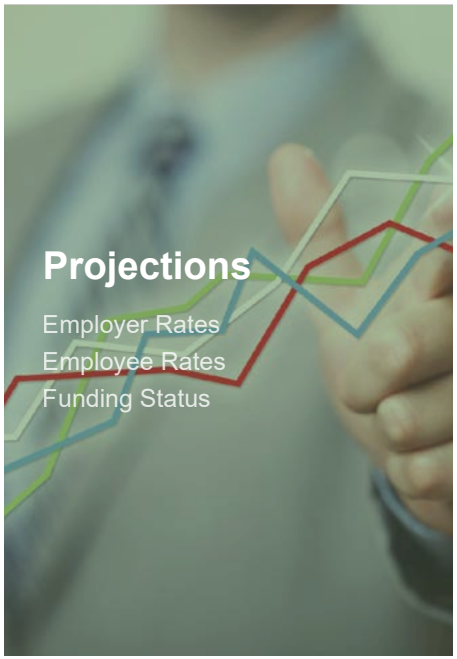
Marin County Employees' Retirement Association

October 26, 2021

Graham Schmidt and Bill Hallmark


Amortization
Current Policy
Full Funding Considerations


Discount Rate
Time Horizon
Capital Market Assumptions


Projections
Employer Rates
Employee Rates
Funding Status

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What is the current amortization policy?

What could change if the Plan reaches full funding?

The Actuarial Liability is the Funding Target - the amount of assets we should have as of the valuation date

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The Funding Target is compared to the Actuarial Value of Assets and the difference is the Unfunded Actuarial Liability (UAL)

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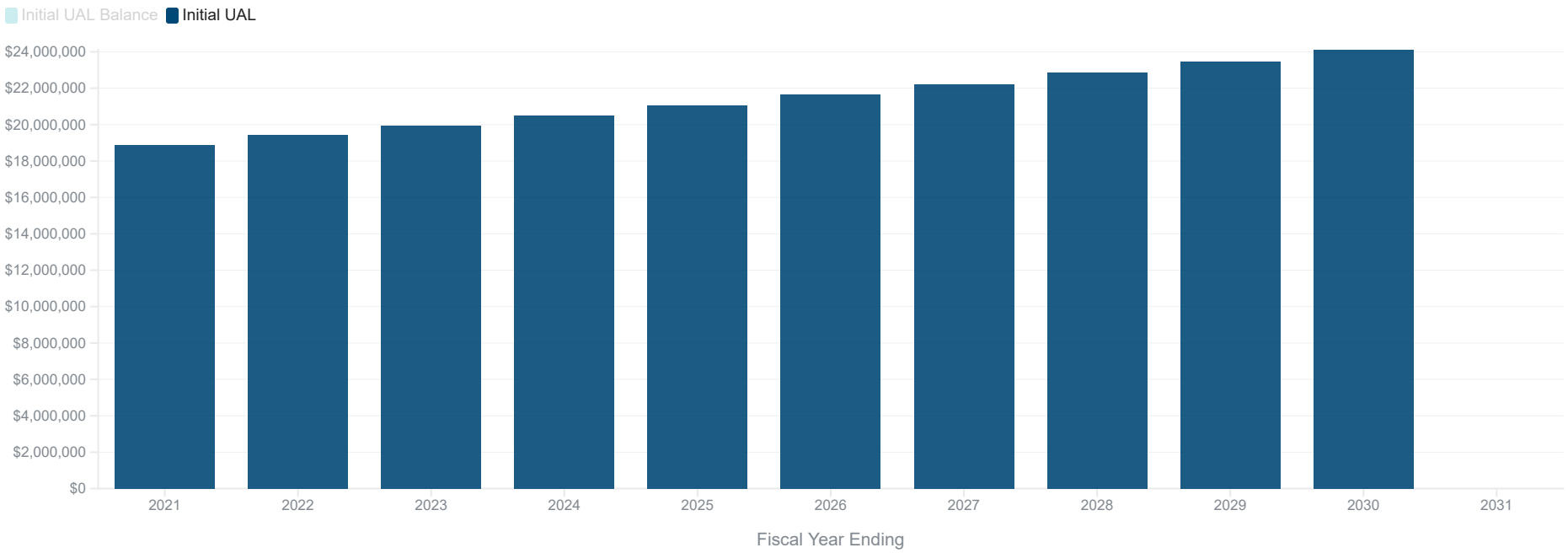
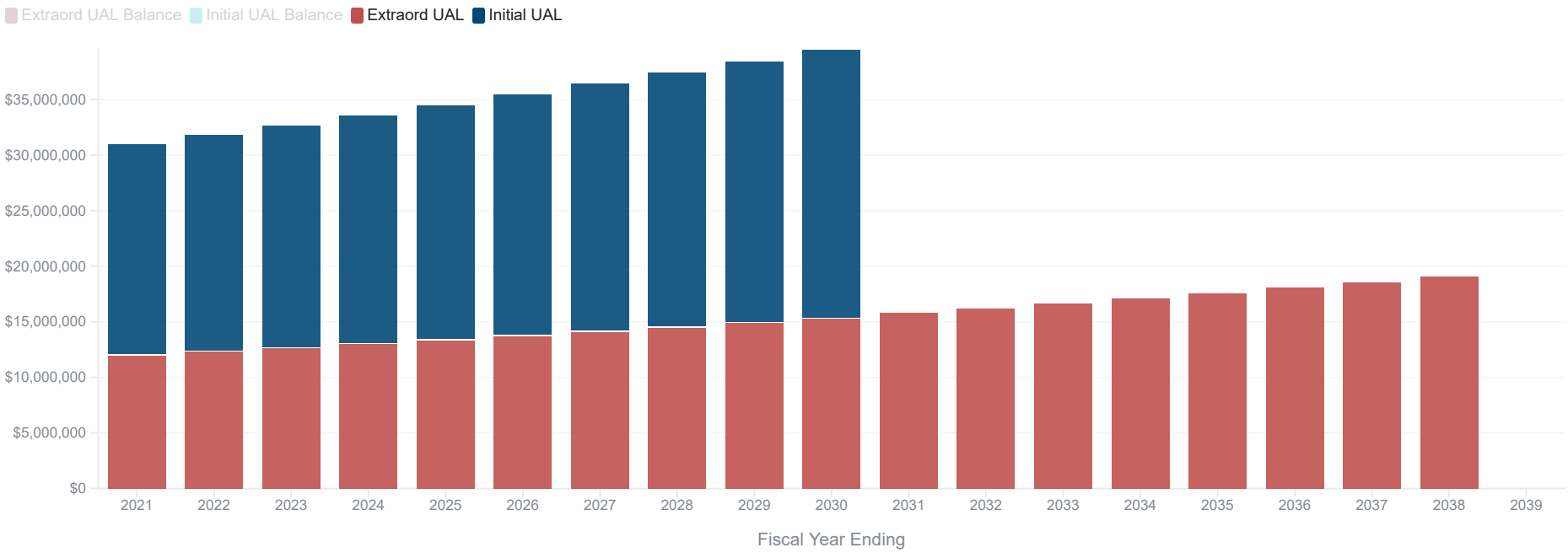
The objective is to return the plan assets to the funding target. Immediately returning to the funding target would require unaffordable and extremely volatile contributions from the sponsors, so we establish an amortization policy to balance stability and affordability for the sponsors with reaching the funding target within a reasonably short period of time.

To calculate the UAL amortization payment, we look to the Plan's funding policy. In 2014, the Board elected to amortize the existing unfunded over a 17 year closed period as a level percentage of payroll. Below we show the remaining payments for the County valuation group's portion of the 2013 UAL, which as of the most recent valuation (2020) had ten years remaining in the payment schedule.



There was also a set of payments attributable to the "extraordinary" portion of the 2008-2009 investment losses, which were amortized over a 30-year period (18 years remaining as of 2020)



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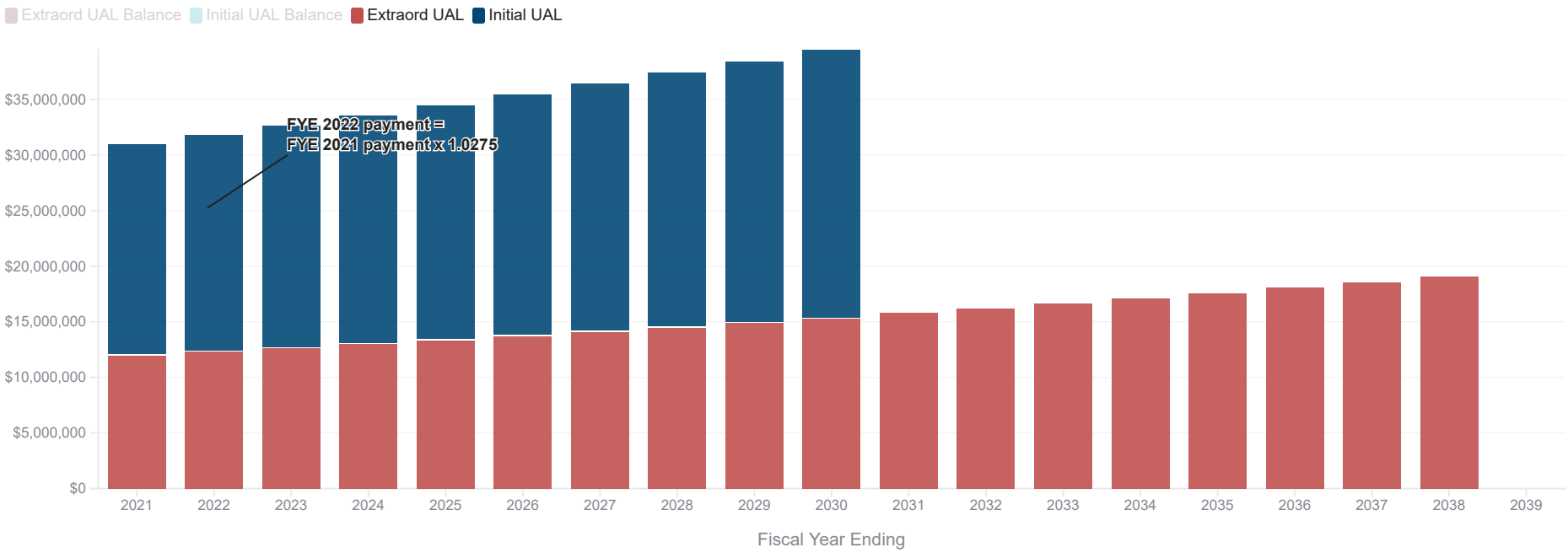
Under level percentage of payroll amortization, the payments are calculated to increase at the assumed payroll growth rate



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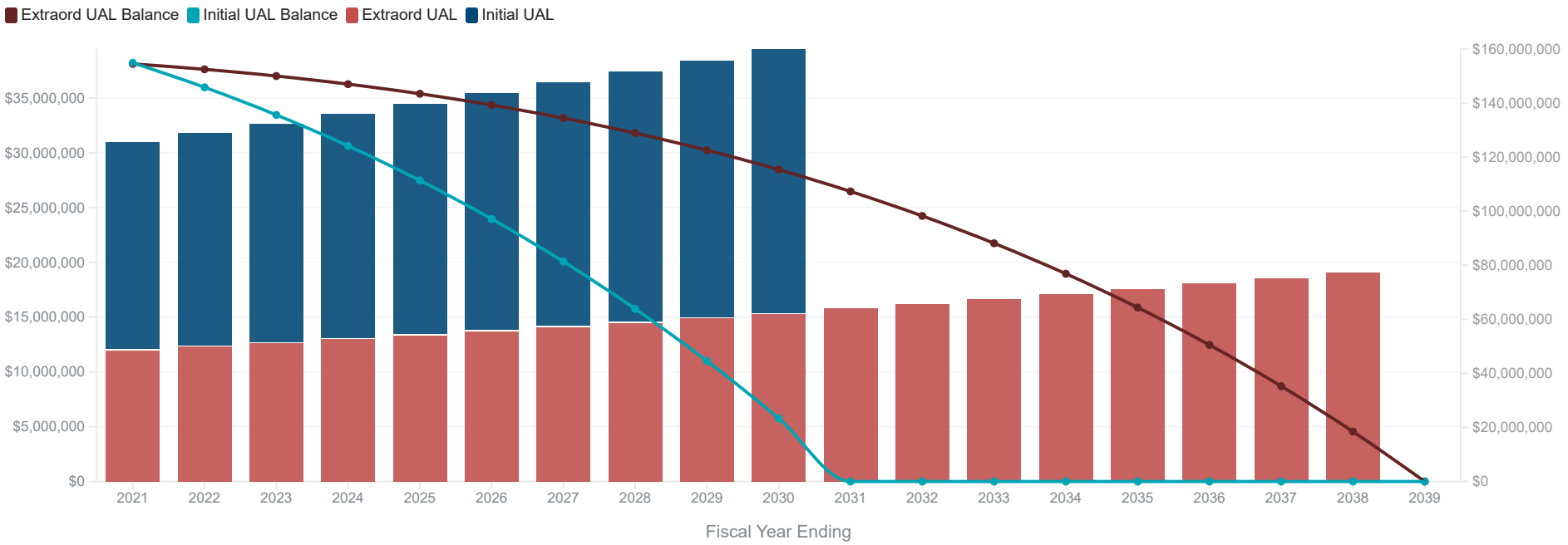
The lines (and associated scale on the right hand axis) shows the remaining balances for these **layers** of the unfunded liability for the County group



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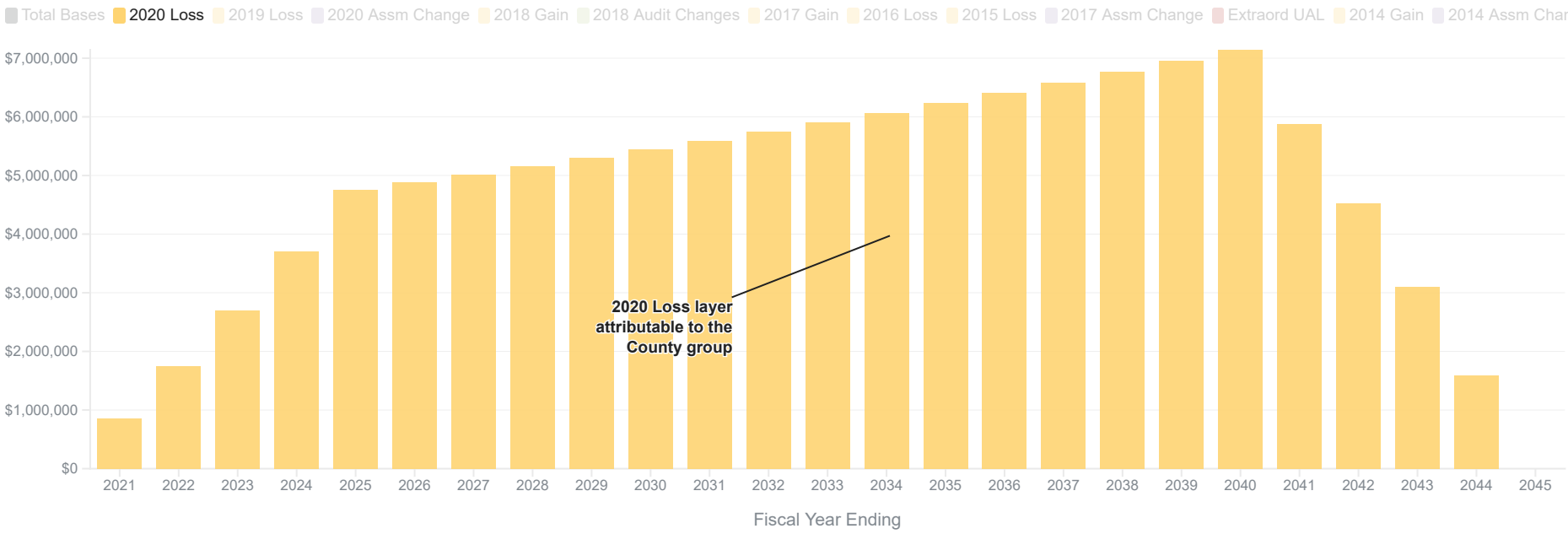
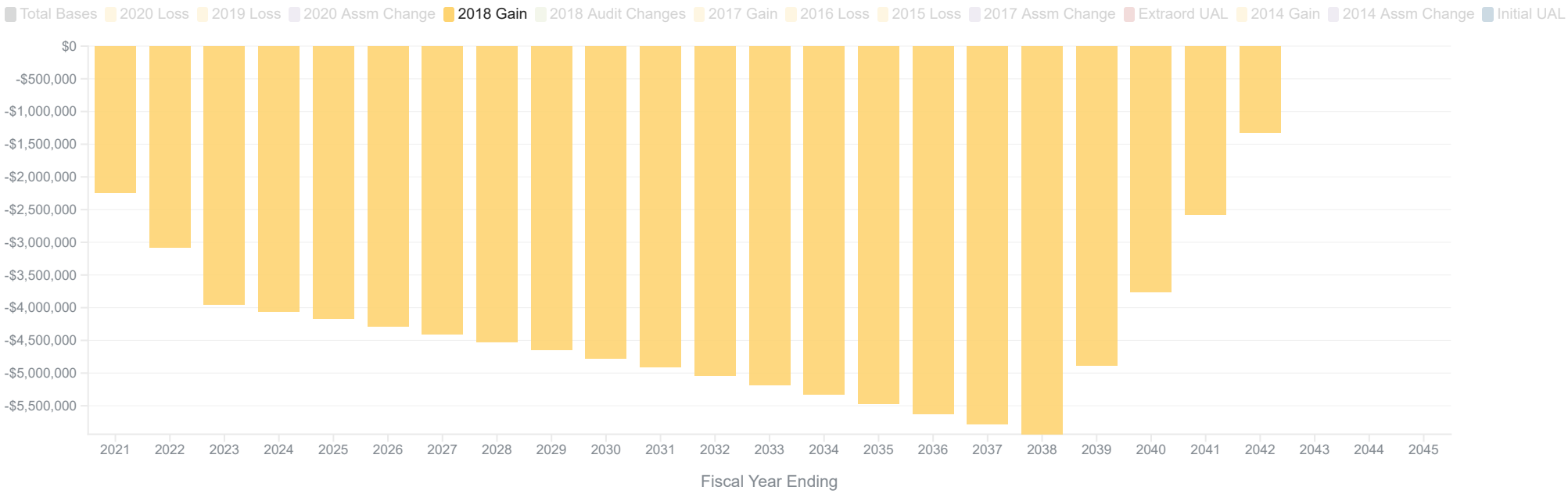
Beginning in 2014, new changes in the UAL are amortized over 24 year periods (22 years for assumption changes). Using an approach known as **direct rate smoothing**, the new payment schedules are phased-in over a five year period (three years for assumption changes), and then similarly phased-out at the end, with the middle payments continuing to increase at the payroll growth rates. This helps stabilize the employer contribution rates.



Similarly, unexpected reductions in the UAL - such as the one that resulted from the 2018 investment gains - reduce the UAL payment, and are also phased-in and out



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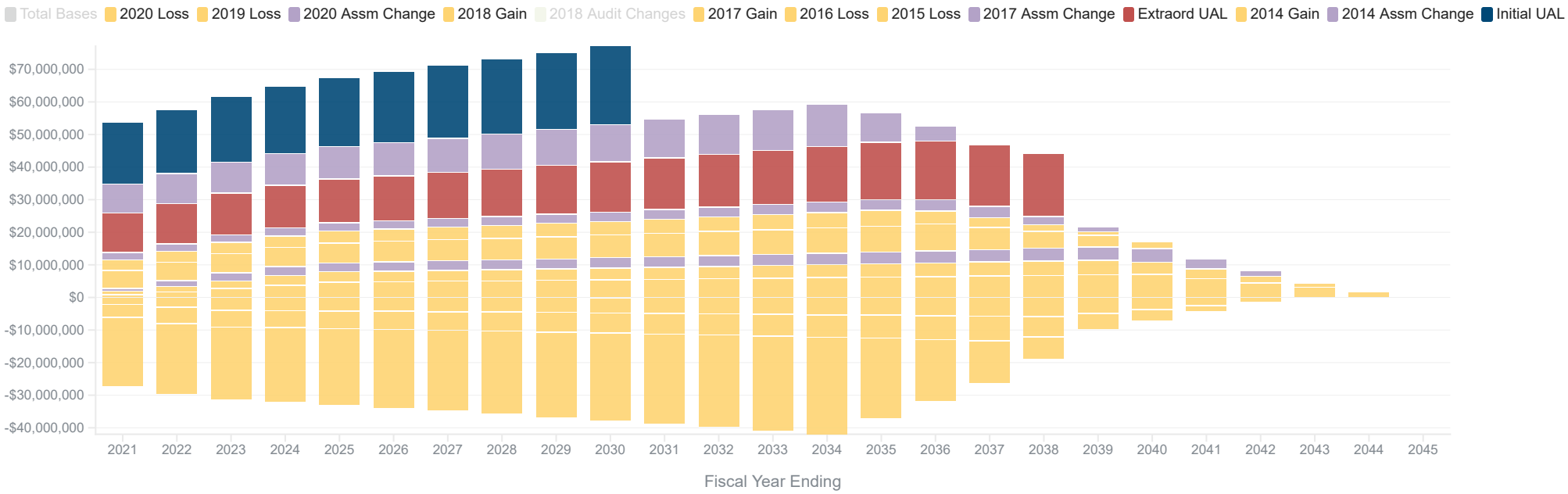
To get the total UAL payment, we add together all the bases



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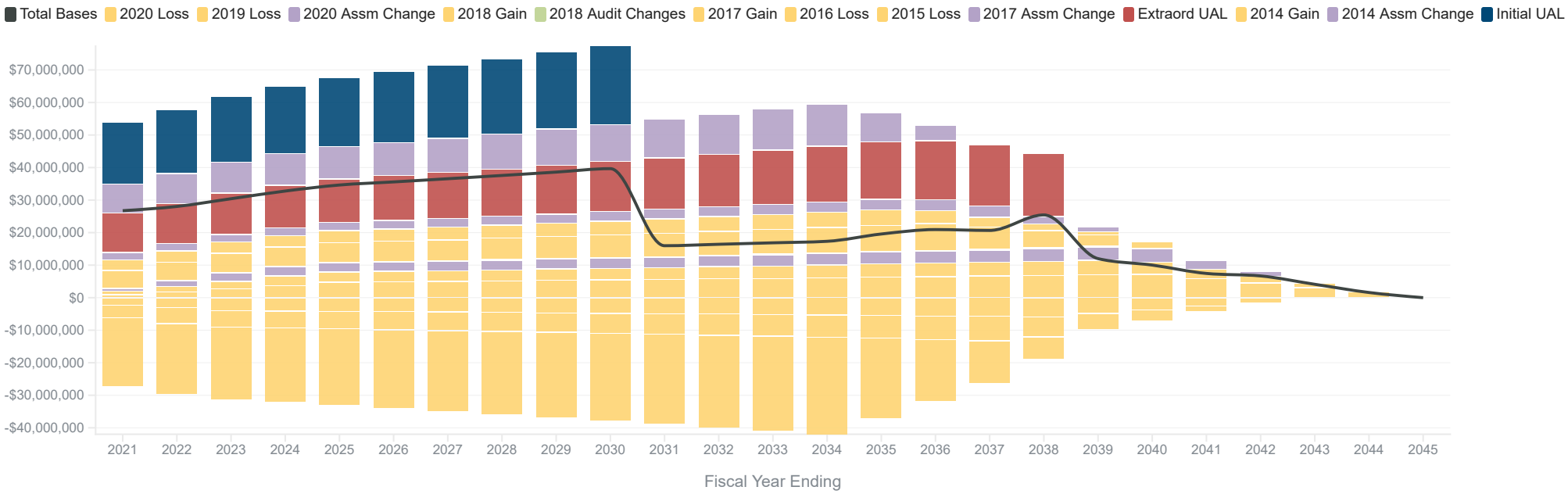
The net payment for the County group's existing bases under the current funding policy is shown in the line



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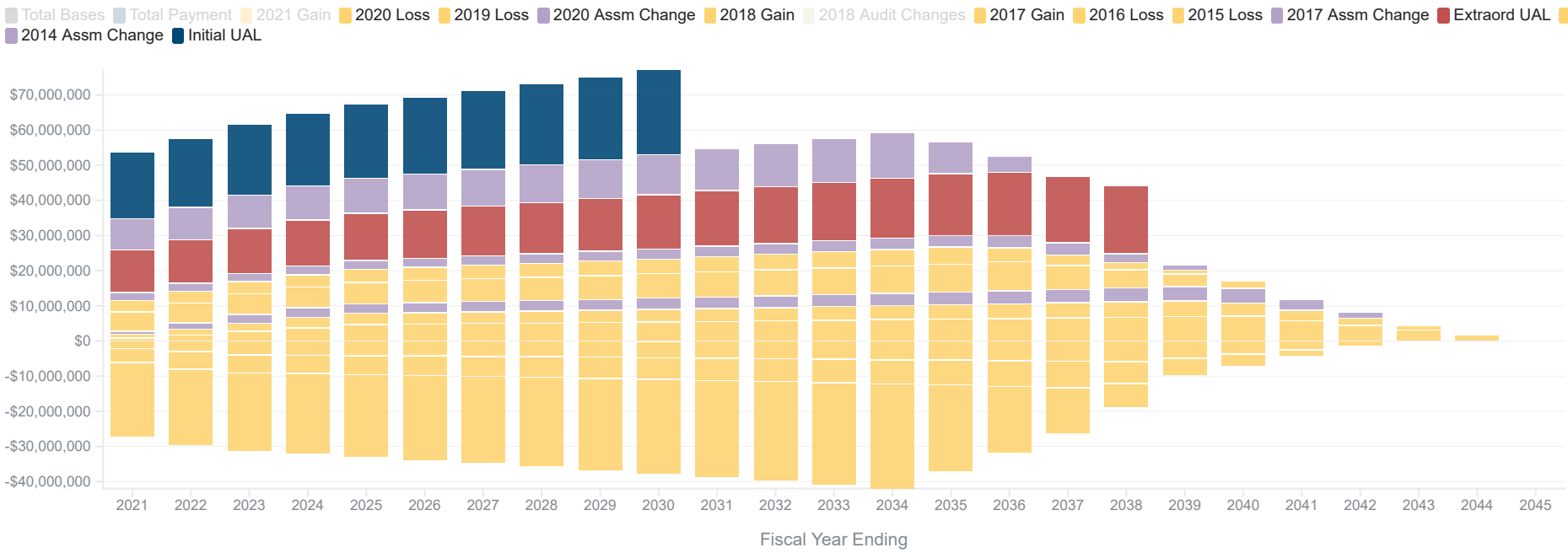
Minimum contributions

"Fresh Start"

The existing amortization bases for the County group shown below are based on the results of the actuarial valuation as of June 30, 2020



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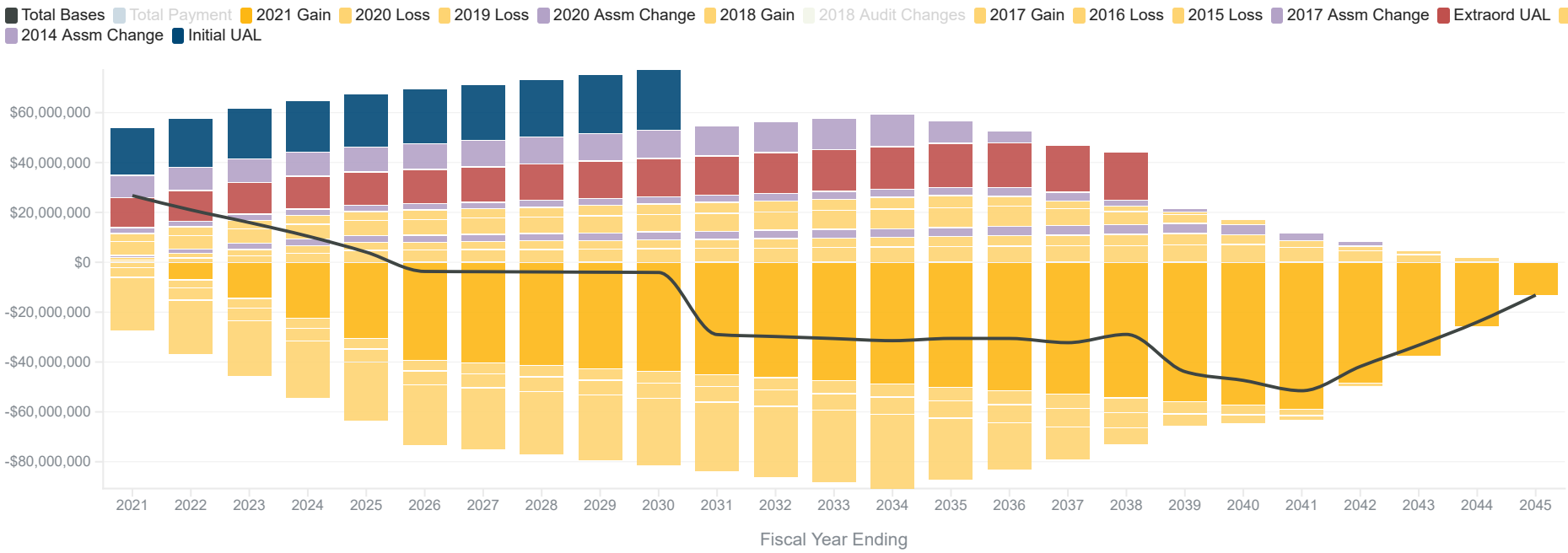
The preliminary returns for FY2020-21 are well above the assumed return (around 30%), which will create a significant new "gain" layer. Absent other changes, the addition of this gain layer will send the funded status for at least some employer groups - in particular the County group - above 100%.



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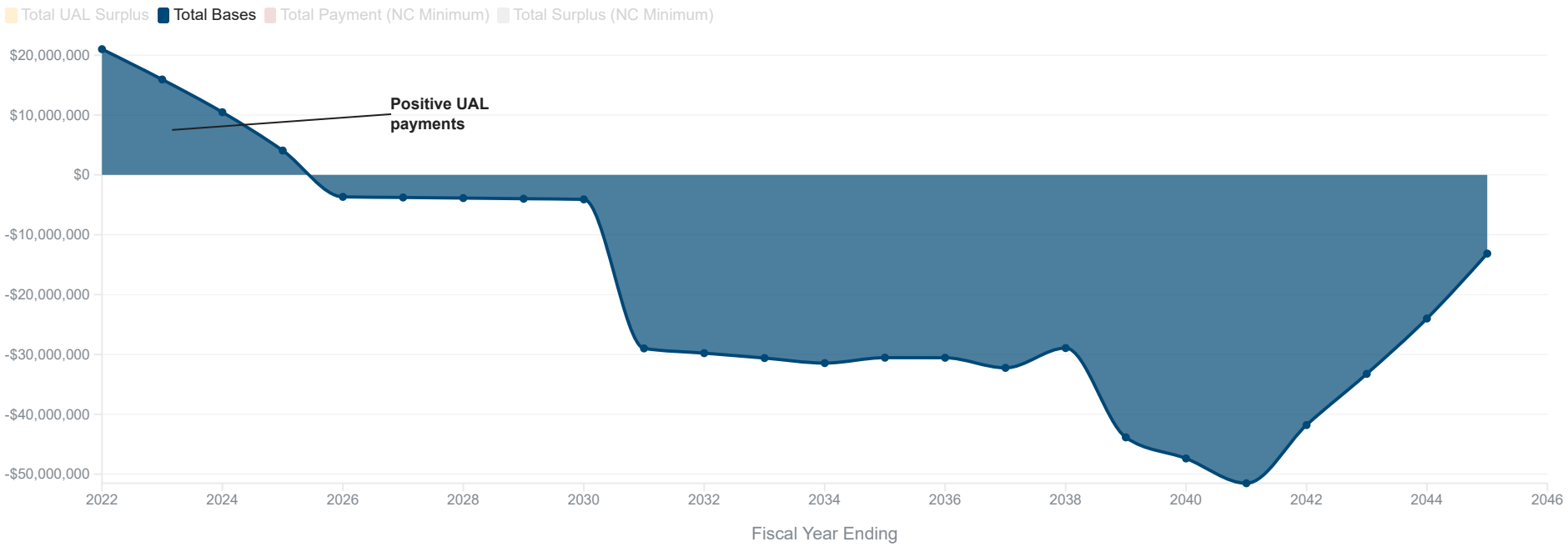
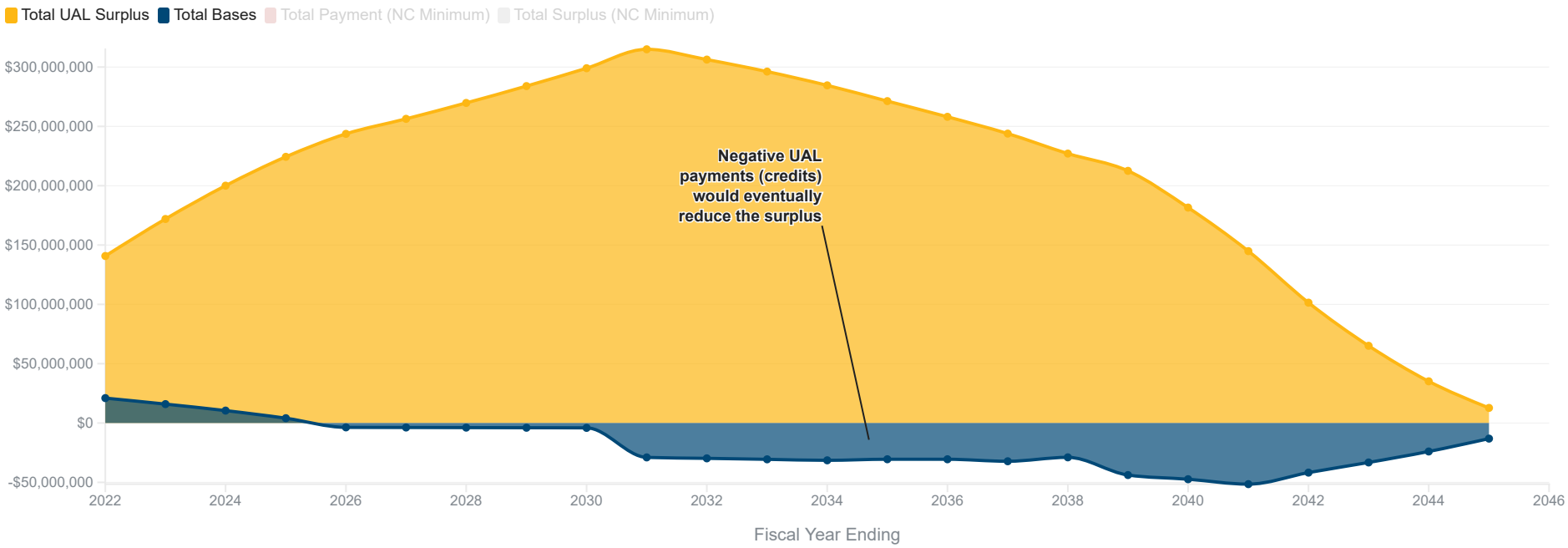
Even though the County group's UAL is expected to be fully funded, under the current amortization schedule there will be positive UAL payments for the next four years, as the 2021 gain layer is phased-in



CHEIRON

This is expected to result in an increasing UAL surplus, until the UAL payments go negative (reducing the employer contribution below the Normal Cost)



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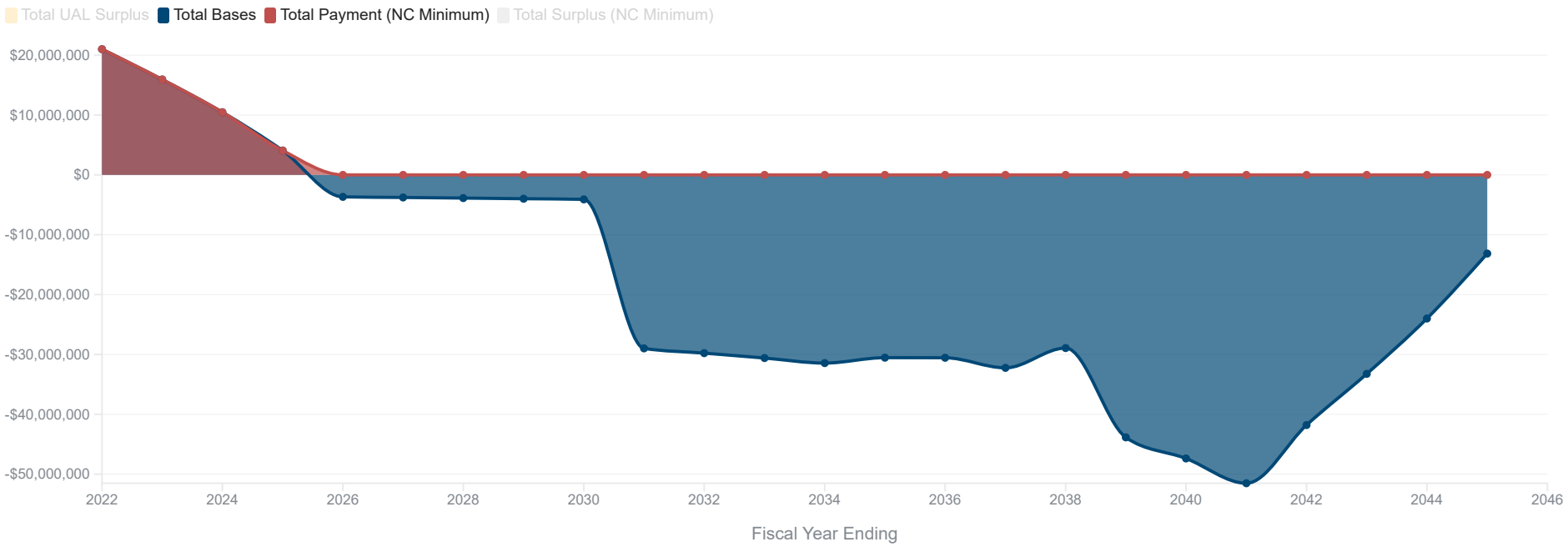
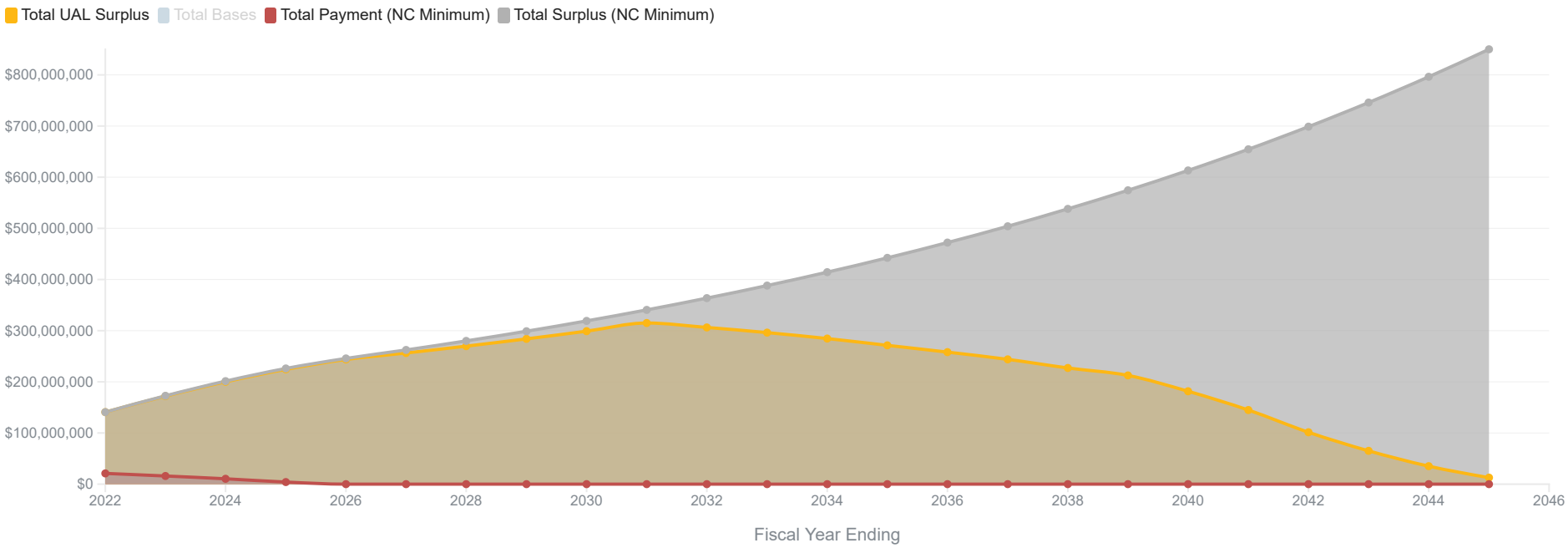
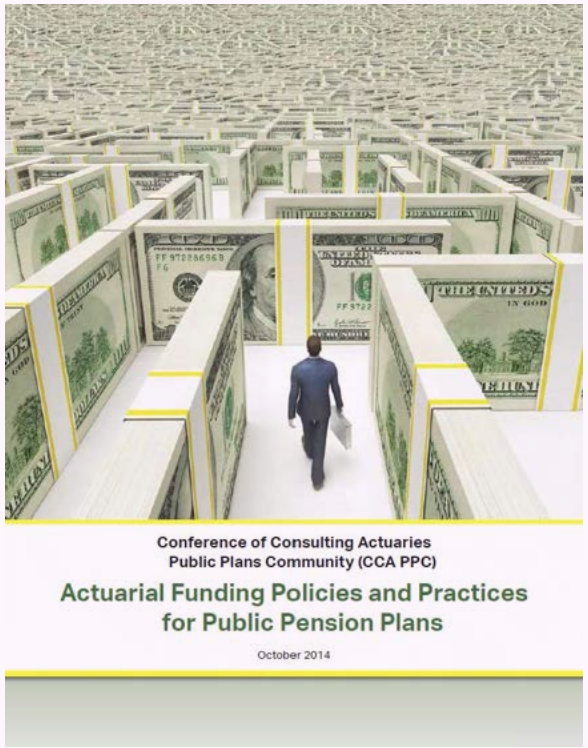
However, under existing state law (as implemented under PEPRA), the employers cannot contribute less than the Normal Cost unless the Plan reaches a 120% funded ratio (and other conditions are met), so the UAL payments are $0



This would result in a continually increasing surplus if all future assumptions are met (and assumptions are not changed)



Various organizations have published guidance on appropriate funding policies, including this document



(since no UAAL is calculated) which provides protection from some agency risk issues, consistent with policy objective #5.

c. Retirement boards desirous of the high level of tail volatility management and computational simplicity associated with rolling amortization of the entire Entry Age UAAL should consider adopting the Aggregate cost method.

   i. If a UAAL is measured (as under the Entry Age or Projected Unit Credit cost methods) then, as discussed above, the policy objectives indicate layered amortization with the possible exception of a single rolling amortization layer for gains and losses.

Practices

Based on the above discussion, and consistent with the policy objectives, amortization methods and parameters are categorized as follows:

Method Changes	
Early Retirement Incentives	5 years or less

- 30 year amortization of surplus (for plans with ongoing Normal Cost and/or plan expenses)
  - Eliminate all prior UAAL layers upon going into Surplus
- Combine gain/loss (and other) layers or restart amortization only to avoid tail volatility.
  - Combining layers should result in substantially the same current amortization payment.
  - Avoid using restart of amortization to achieve de facto rolling amortization.
  - Restart amortization layers when moving from Surplus to UAAL condition.
- Additional analysis, such as solvency projections, is likely to be appropriate for closed plans

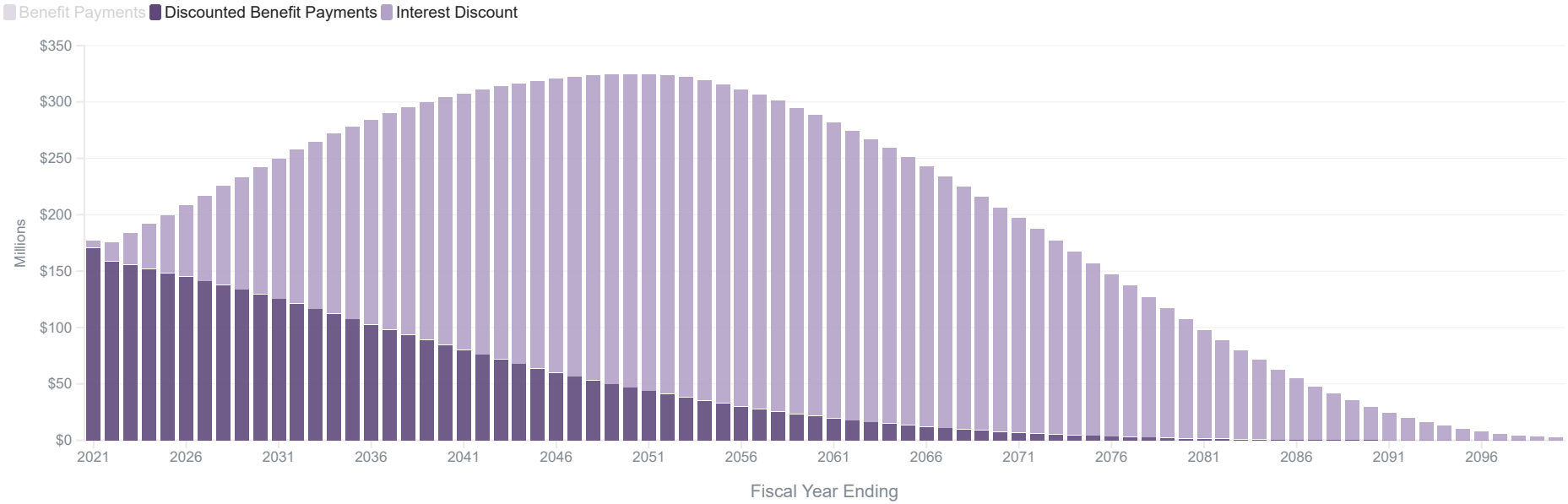
Next we review a few items related to the Plan's discount rate (equal to the assumed rate of return on assets)

Time Horizon

Capital Market Assumptions

The actuarial assumptions are intended to be ***long-term***. But what do we mean by long-term? For the actuarial valuation, these assumptions are used to project benefits for the next 80+ years.

Projected Benefit Payments



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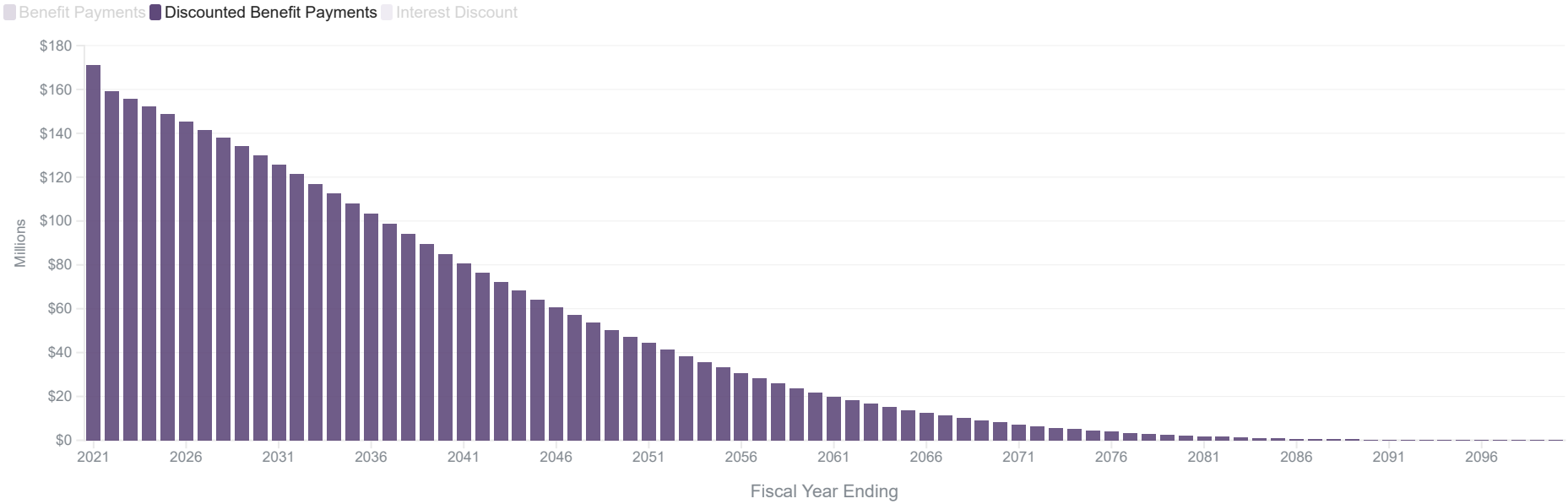
However, some benefits matter more than others, because of discounting

Projected Benefit Payments



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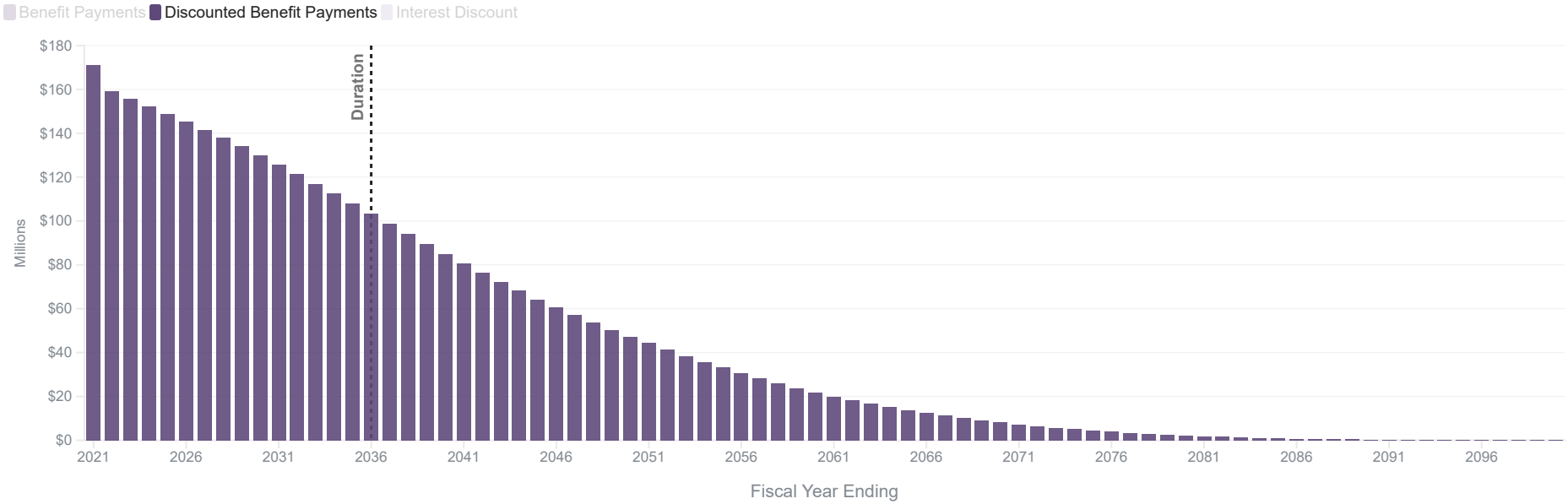
One measurement to keep in mind when defining "long-term" is the **duration** of the Plan's projected benefits, which is related to the weighted-average timing of discounted benefit payments

Projected Benefit Payments



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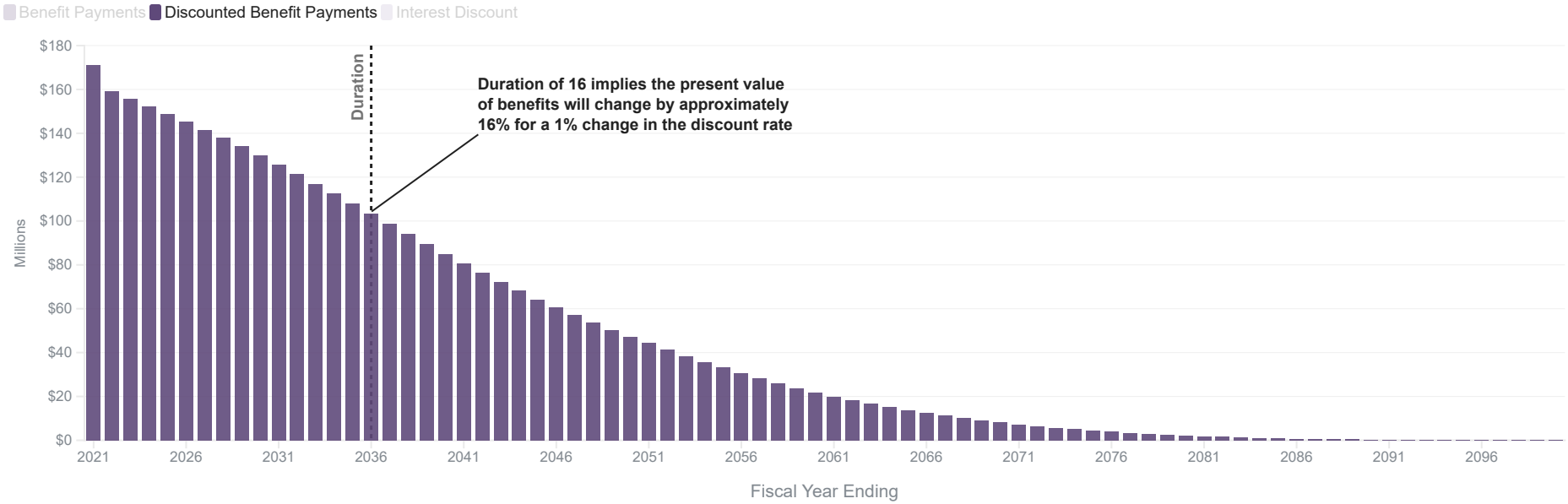
The duration also provides information on how sensitive the liabilities are to a change in the discount rate

Projected Benefit Payments



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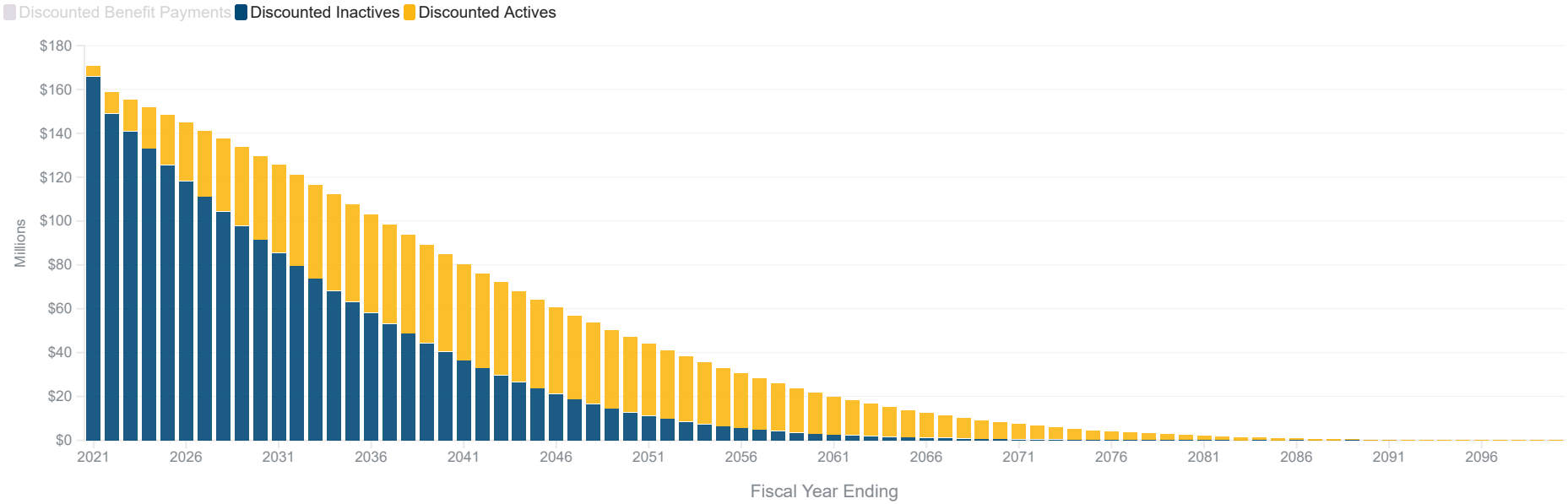
We can also split the benefit payments into those assumed to be made to the current active members versus those no longer working, or the inactives (i.e. the retirees, beneficiaries, disabled members and deferred vested members)

Projected Benefit Payments



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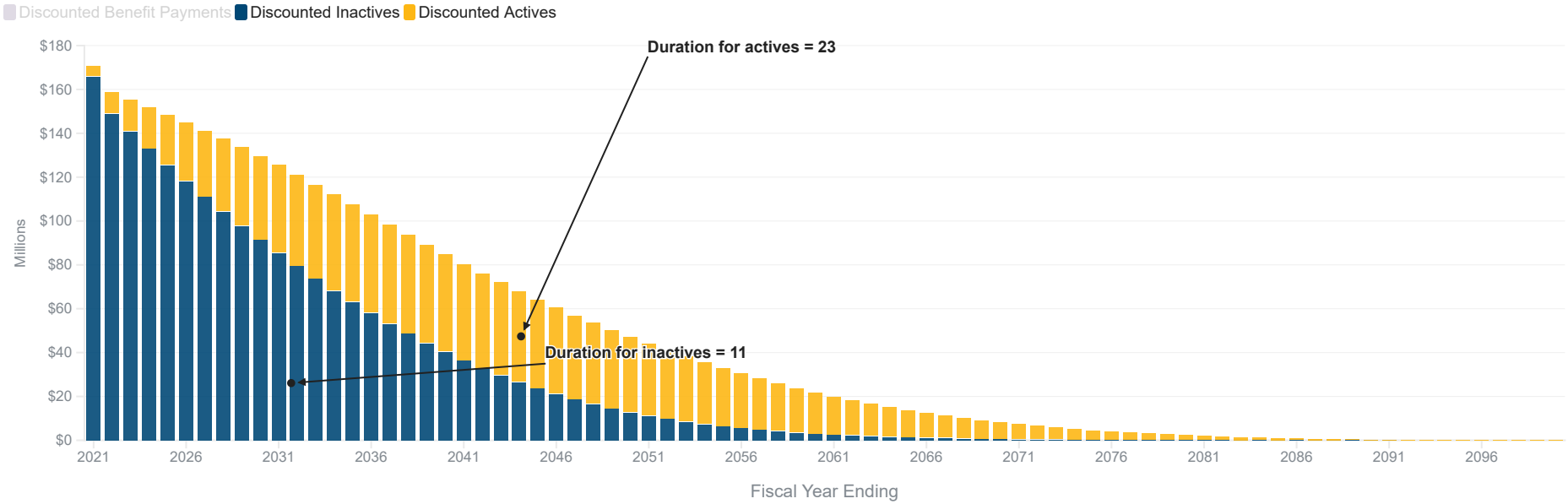
The duration - or average discounted time horizon - for each group is quite different: around **11 for the inactives** versus **23 for the current actives**

Projected Benefit Payments



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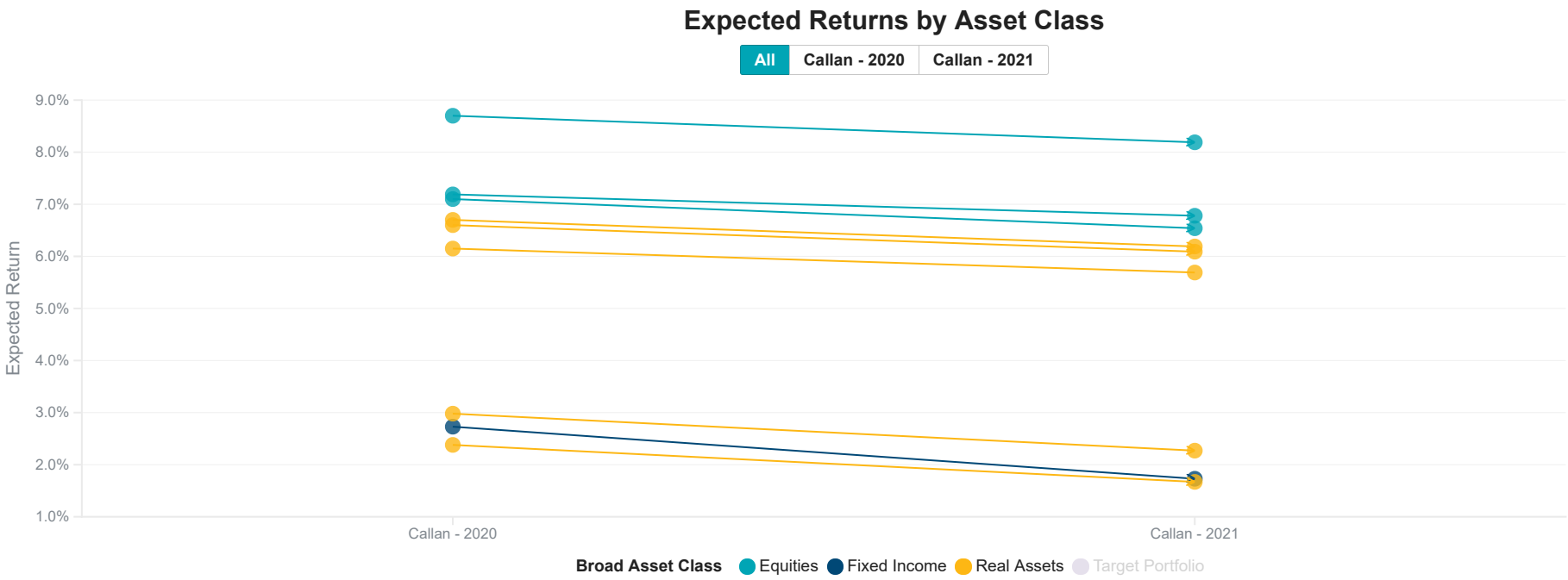
To develop the expected return on assets we start with the expected returns for each asset class. This exhibit shows the most recent expected nominal geometric (compound) returns from various asset sub-classes from Callan.

Expected Returns by Asset Class

All | Callan - 2020 | Callan - 2021

CHEIRON

We note that the expected returns for all asset classes have declined since the last experience study was performed in 2020



CHEIRON

Here we compare the Callan 2021 capital market assumptions to the results from a survey of investment consultants performed by Horizon Actuarial Services, under two different time horizons

Expected Returns by Asset Class

All | Callan - 2021 | Horizon 10-Year | Horizon 20+ Year

CHEIRON

The expected return for the MCERA portfolio is a weighted blend of the expected returns for each asset class based on the target allocation, adjusted for correlations

Expected Returns by Asset Class

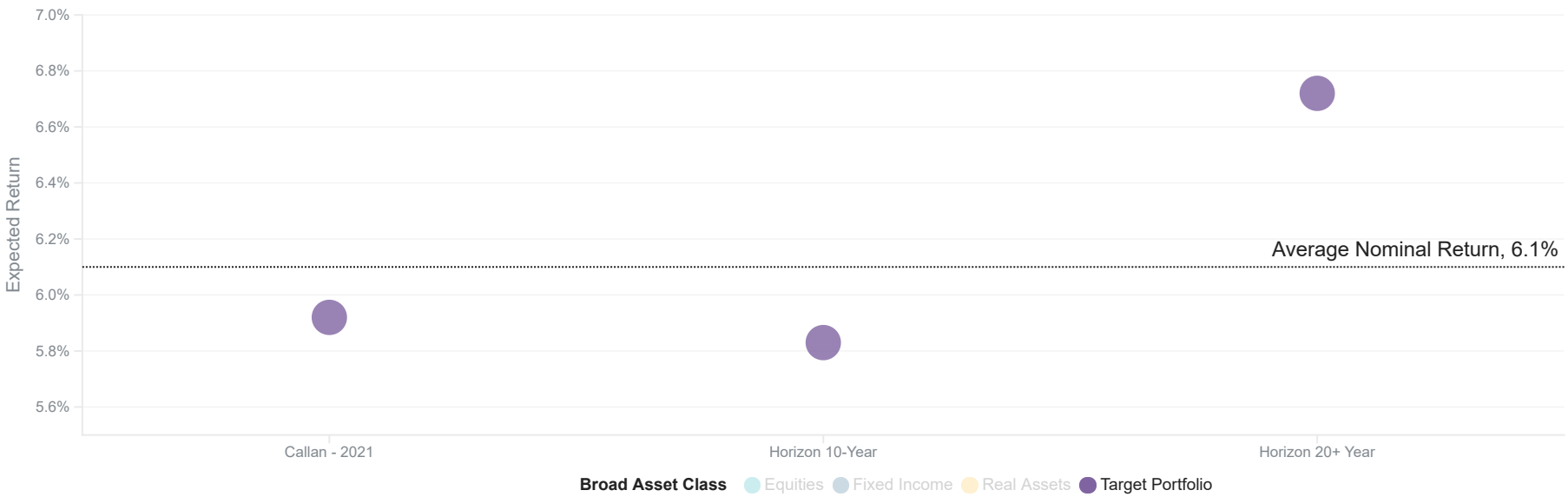
All | Callan - 2021 | Horizon 10-Year | Horizon 20+ Year

CHEIRON

Focusing on the overall portfolio returns, the average nominal return across all assumption sets is about 6.1%

Expected Returns by Asset Class

All | Callan - 2021 | Horizon 10-Year | Horizon 20+ Year

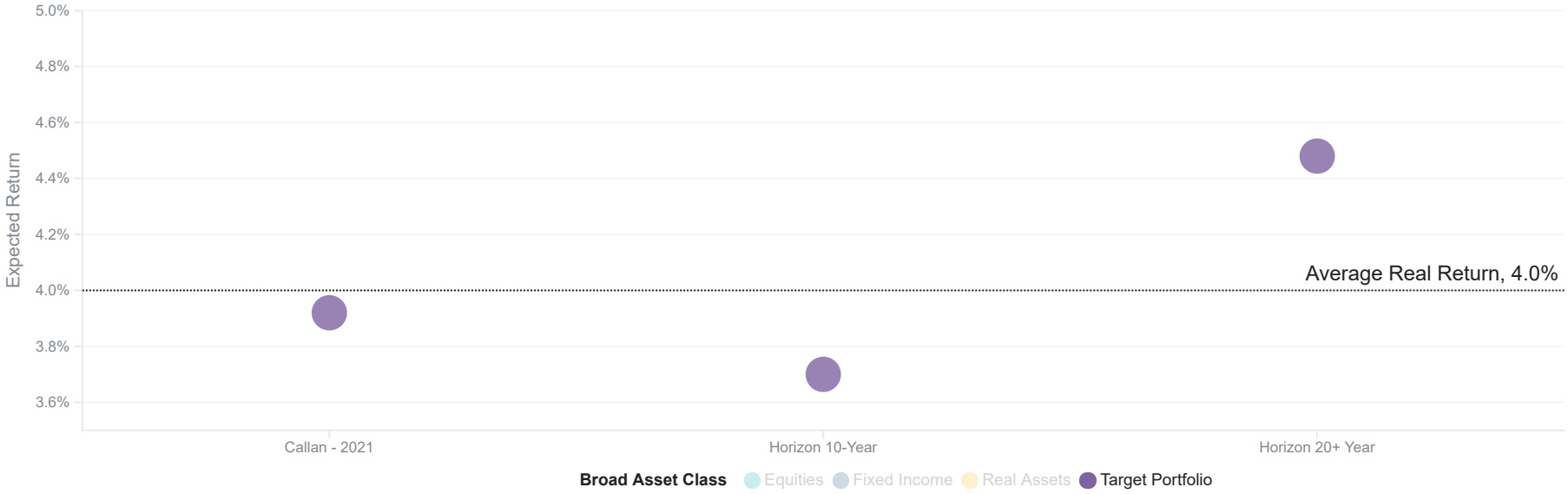


CHEIRON

If we back out the inflation assumption from each set of expectations - averaging 2.1% across all assumption sets - we get the expected **real return** (i.e. the return above inflation), which averages 4.0%

Expected Returns by Asset Class

All | Callan - 2021 | Horizon 10-Year | Horizon 20+ Year



CHEIRON

We note that the average of the medium-term real returns (10 years) is about 0.7% lower than the long-term forecast (20+ years). This has been a consistent pattern across investment consultant expectations for a number of years.

Expected Returns by Asset Class

All | Callan - 2021 | Horizon 10-Year | Horizon 20+ Year

CHEIRON

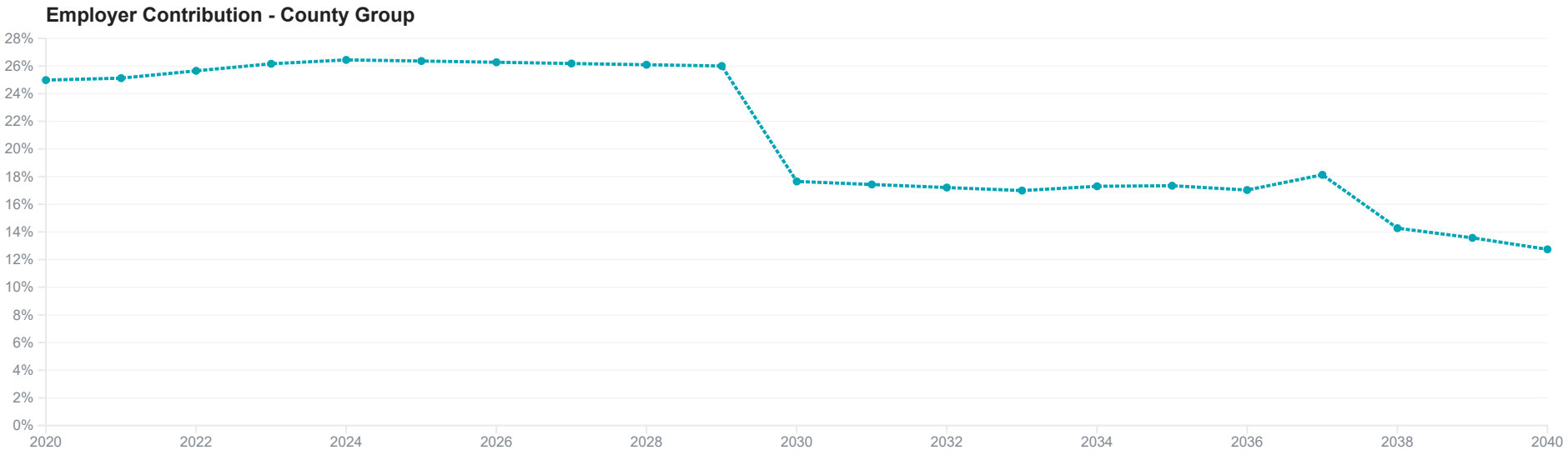
Which leads to a question: would it be appropriate to discount the inactive liabilities at a different (*i.e. lower*) discount rate than the active liabilities?

The following slides present projections of the impact from the FY2020-2021 investment return, as well as scenarios related to the issues discussed earlier (e.g. amortization policy and discount rates). The projections are based on the results of the 2020 valuation, except where noted. The projections for the County group are shown here, but the projections for other MCERA employer groups are available using our interactive projection software.

This graph shows the projected employer contribution rates based on the most recent valuation results and assumptions, including a 6.75% return for FY2020-21 and all future years, inflation at 2.50% and 2.75% payroll growth

Employer Contribution - County Group

2020 Baseline 30% Return Fresh-Start 6.50% Discount 6.25% Inactive Discount, 6.75% Active Discount

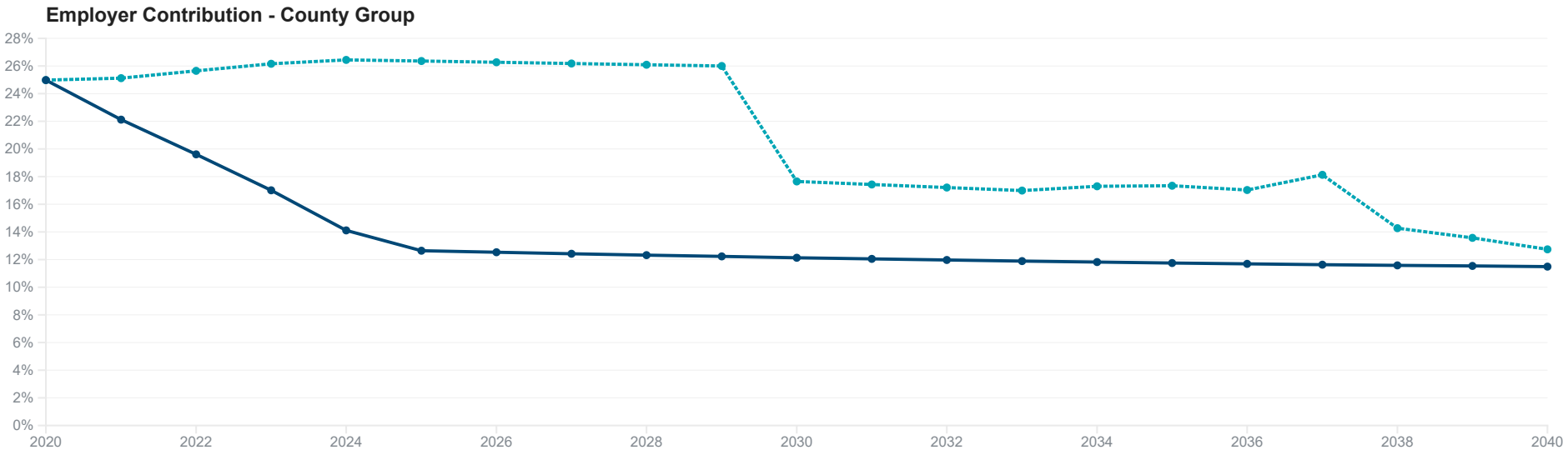


CHEIRON

Next we show the impact on the employer rate of a 30% return for FY2020-21 based on MCERA's current funding policy

Employer Contribution - County Group

2020 Baseline 30% Return Fresh-Start 6.50% Discount 6.25% Inactive Discount, 6.75% Active Discount

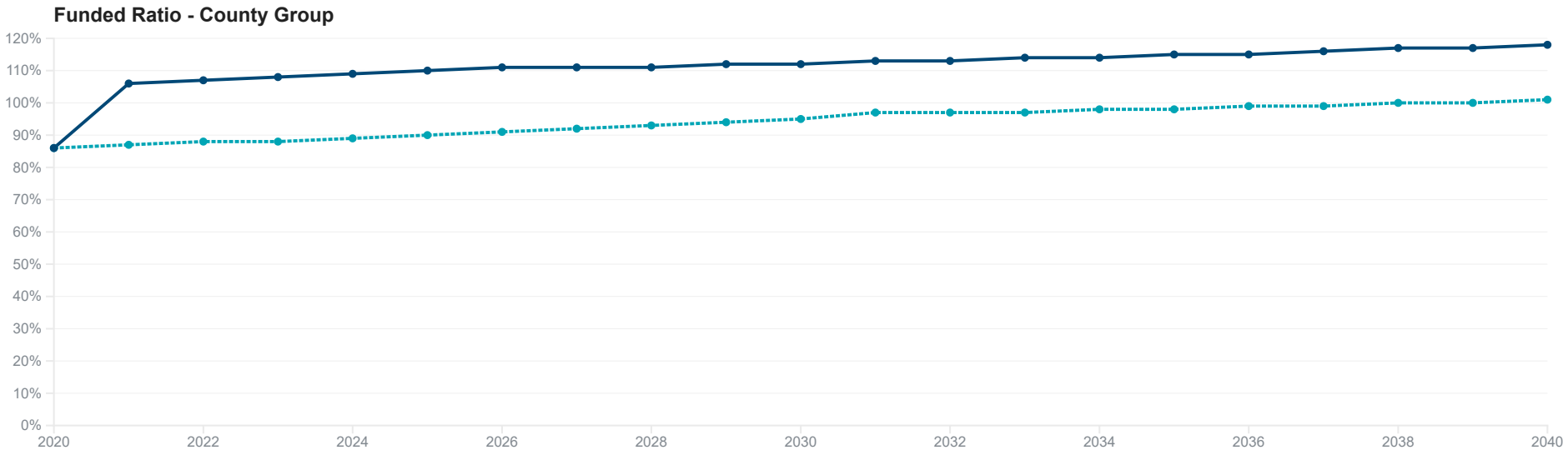


CHEIRON

We note the strong return is expected to result in a funded ratio well over 100% in 2021 for the County group, if no other changes are made to the assumptions and there are no significant unexpected liability changes

Funded Ratio - County Group

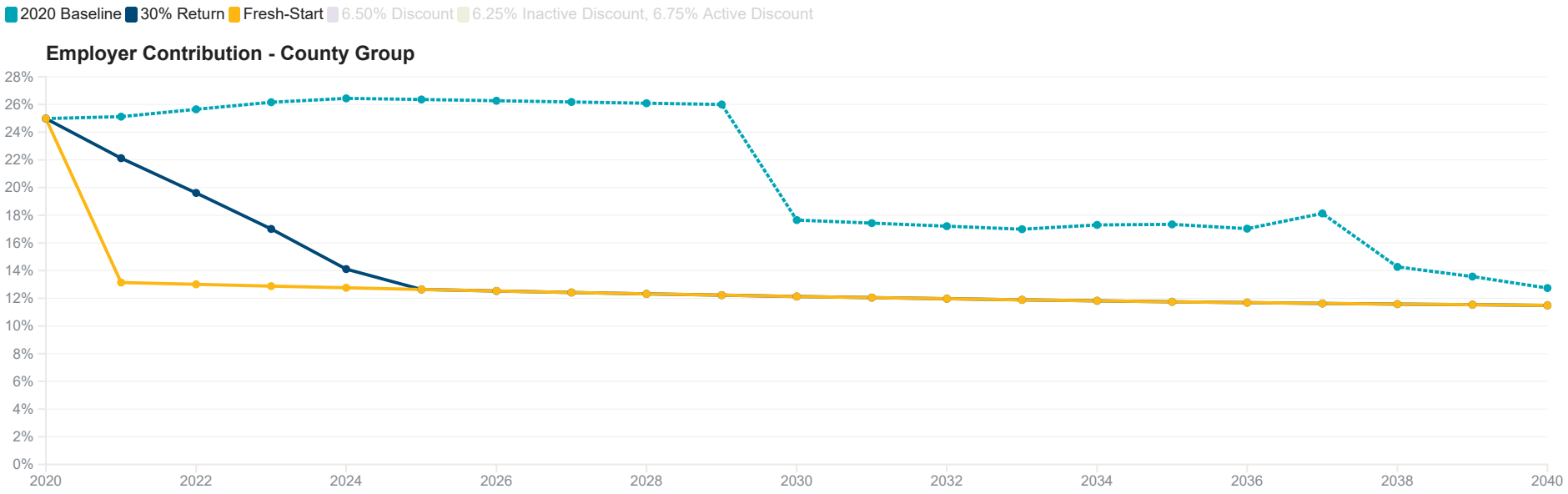
2020 Baseline 30% Return Fresh-Start 6.50% Discount 6.25% Inactive Discount, 6.75% Active Discount



CHEIRON

Returning to the employer contributions, we add in a scenario in which the existing amortization bases are reset (i.e. "fresh-started") once full funding is reached. As noted earlier, this would result in the UAL contributions dropping to $0 immediately, rather than phasing-out over four years.

Employer Contribution - County Group

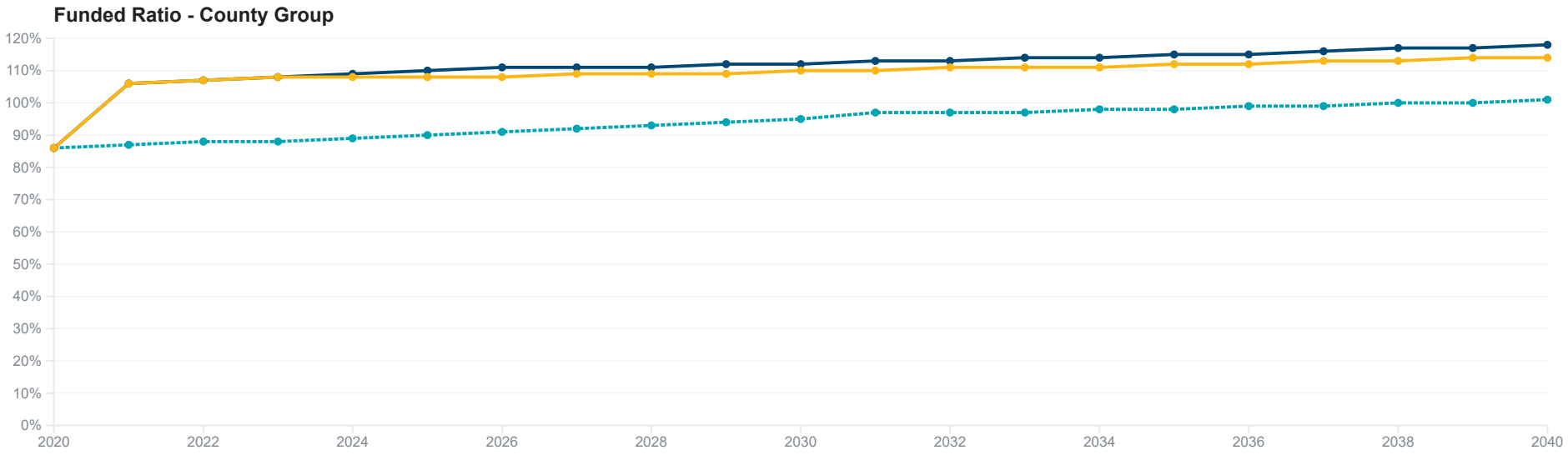


CHEIRON

Under this scenario, the emerging surplus is lower than it would be otherwise, because of the elimination of the UAL payments for the first few years, but the surplus still continues to grow because of the Normal Cost minimum contribution

Funded Ratio - County Group

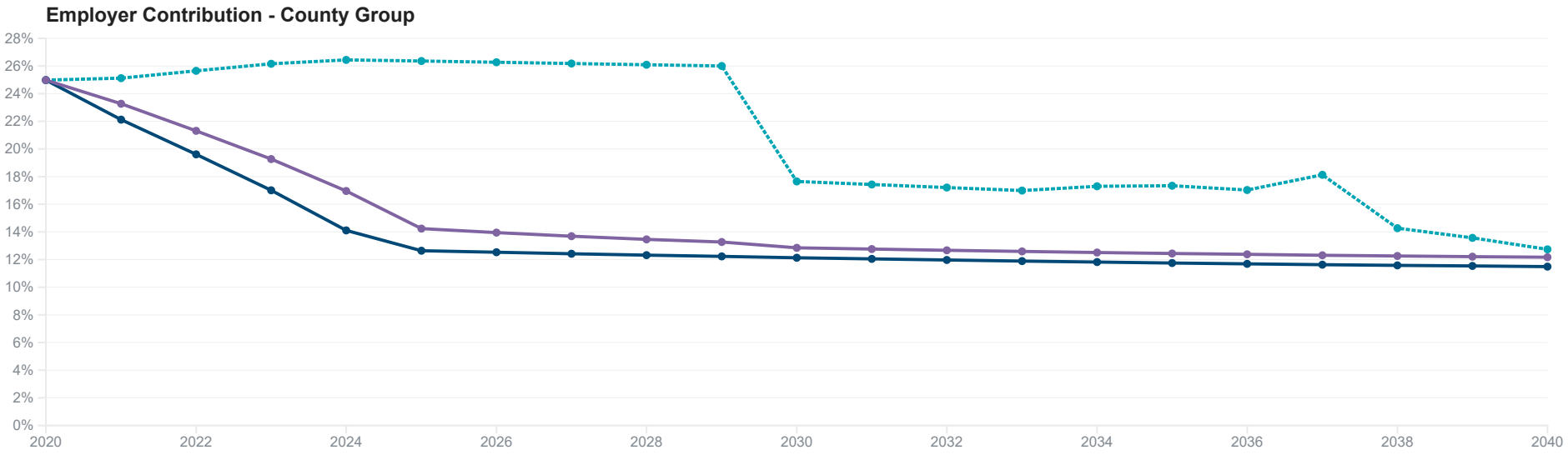
2020 Baseline 30% Return Fresh-Start 6.50% Discount 6.25% Inactive Discount, 6.75% Active Discount



Here we review the impact of reducing the discount rate by 0.25%, from 6.75% to 6.50%. We have assumed that the impact of the rate reduction would be phased-in over five years, rather than the traditional three years for assumption changes, to match the phase-in period for the investment gain. We note that projected employer contributions under the lower discount rate are still significantly below the level projected in 2020.

Employer Contribution - County Group

2020 Baseline | 30% Return | Fresh-Start | 6.50% Discount | 6.25% Inactive Discount, 6.75% Active Discount



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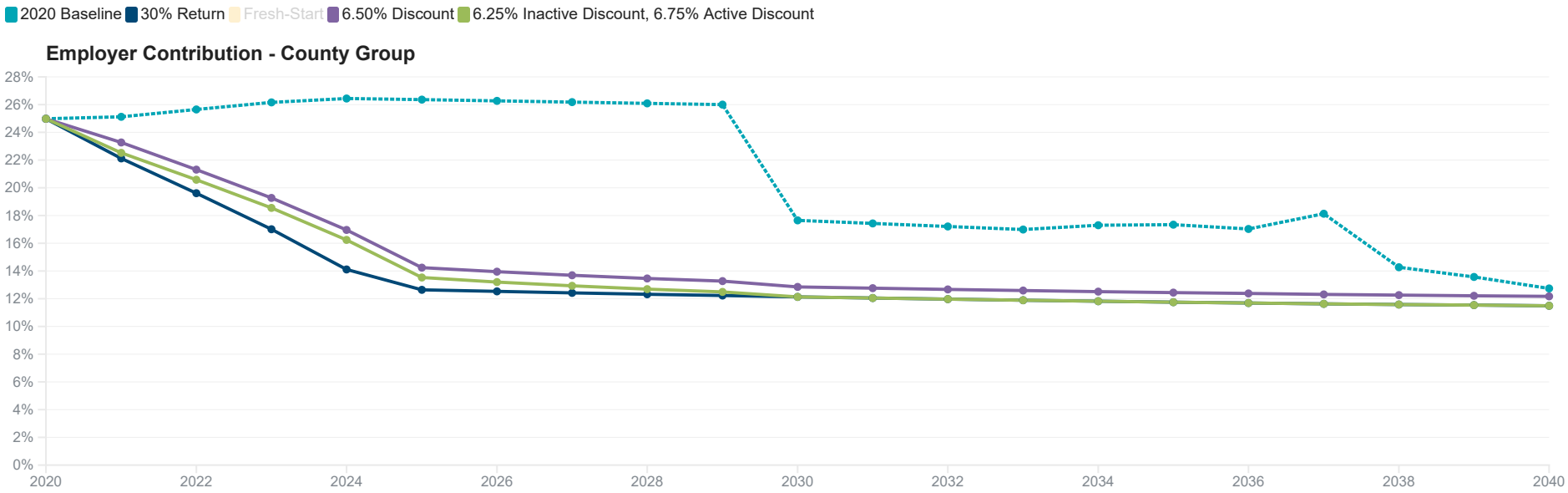
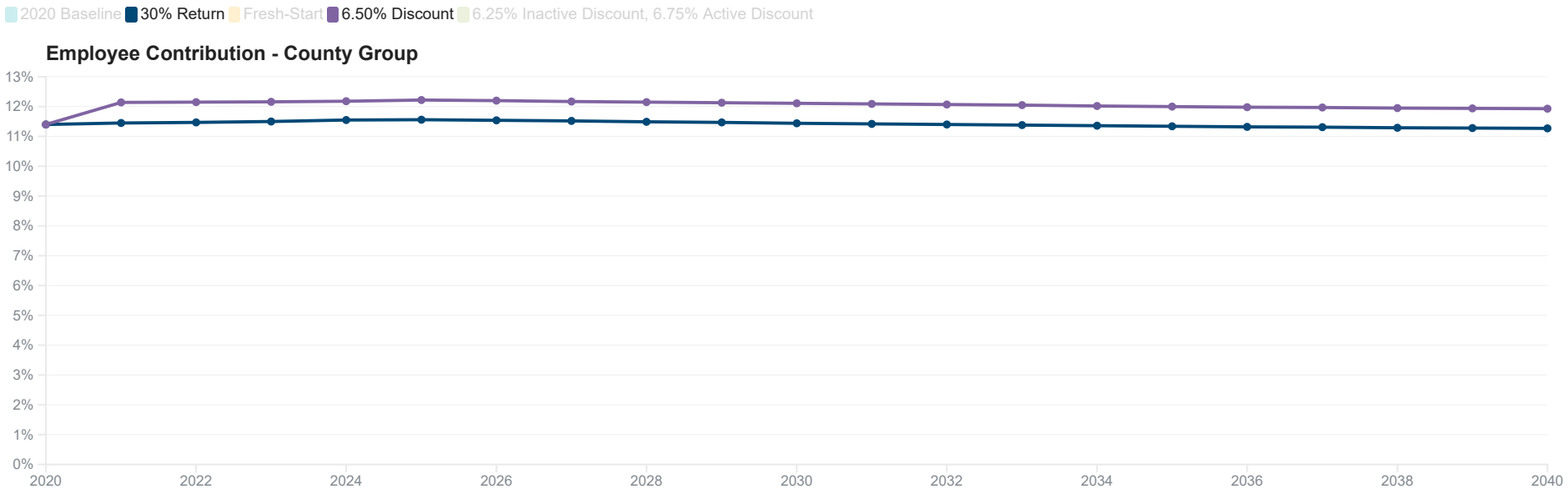
Alternatively, we reduce the discount rate on the inactive liabilities by 0.50% (to 6.25%), but leaving the discount rate used to value the active liabilities at 6.75%. Even though the "average" discount rate is roughly the same (around 6.50%), the employer contributions are slightly lower under this scenario, because although the impact on the UAL is similar, the Normal Cost rate only changes when the active discount rate changes.

Employer Contribution - County Group



This can be clearly seen by looking at the projected impact on the member rates. If the overall discount rate is reduced from 6.75% to 6.50%, the member rates will increase.

Employee Contribution - County Group



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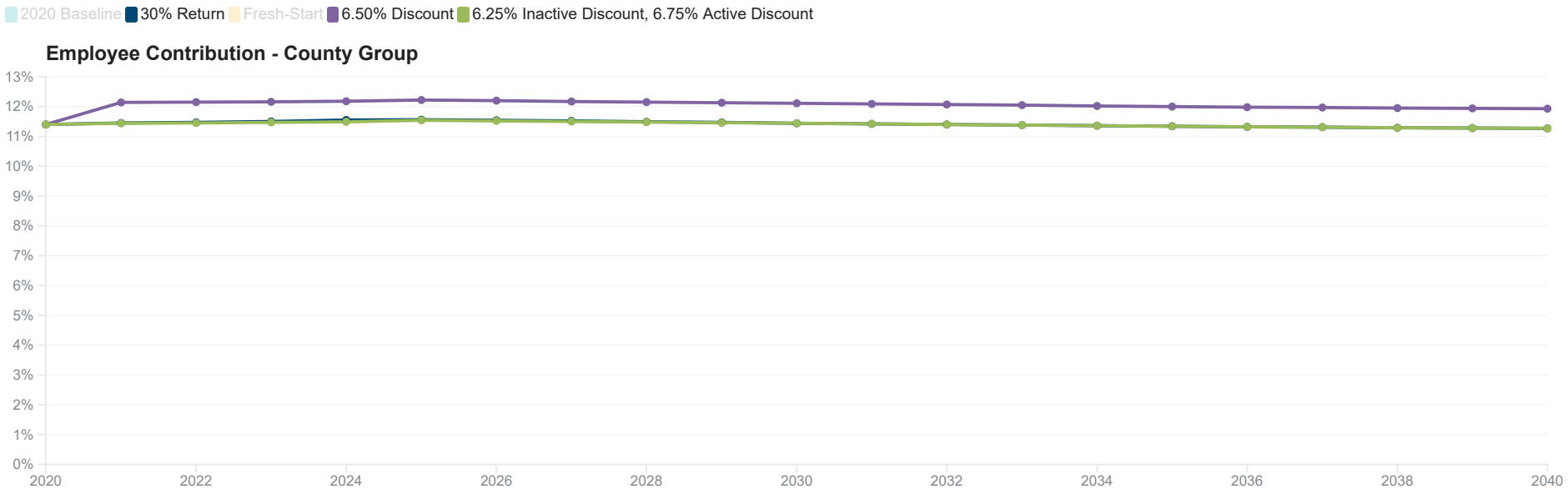
However, if only the inactive discount rate is reduced, the member rates remain the same as under the baseline projection

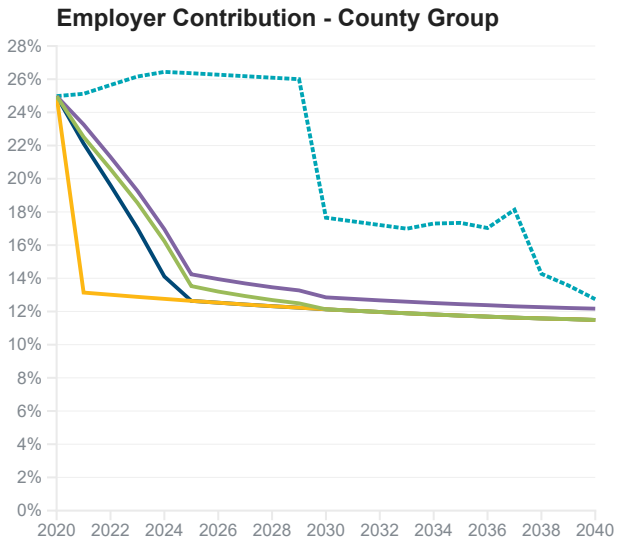
Employee Contribution - County Group

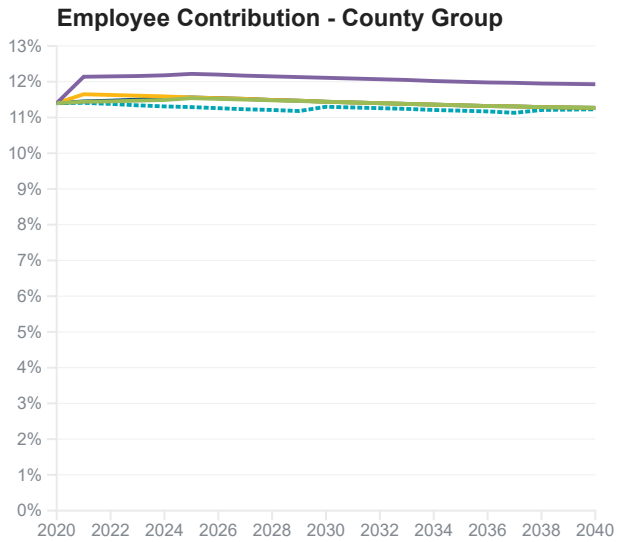


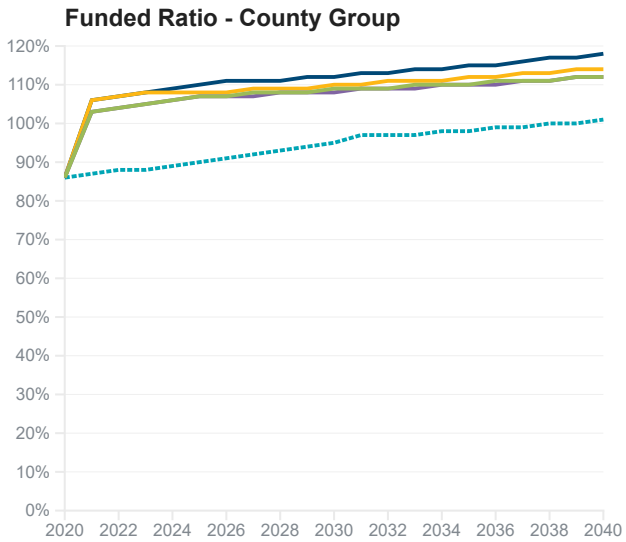
Here all three statistics are shown side-by-side. We note that even with a 0.25% reduction in the discount rate, the funded ratio for the County group is expected to exceed 100% for next valuation.

All

2020 Baseline | 30% Return | Fresh-Start | 6.50% Discount | 6.25% Inactive Discount, 6.75% Active Discount







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Certification

The purpose of this report is to present information relating to MCERA's funding policies, including preliminary projections of results. These results are still under peer review and subject to change.

In preparing our presentation, we relied on information (some oral and some written) supplied by MCERA. This information includes, but is not limited to, the Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. The data and actuarial assumptions used (unless modified within this communication) are described in our June 30, 2020 actuarial valuation report.

Future projections may differ significantly from the projections presented in this presentation due to such factors as the following: plan experience different from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

Cheiron utilizes ProVal actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have a basic understanding of ProVal and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this valuation.

Projections in this presentation were developed using R-scan, a proprietary tool used to illustrate the impact of changes in assumptions, methods, plan provisions, or actual experience (particularly investment experience) on the future financial status of the Plan. R-scan uses standard roll-forward techniques that implicitly assume a stable active population. Because R-scan does not automatically capture how changes in one variable affect all other variables, some scenarios may not be consistent.

To the best of our knowledge, this presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This presentation was prepared for the MCERA Retirement Board for the purposes described herein. Other users of this presentation are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

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Marin County Employees Retirement Association

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China Perspectives: Opportunities and Risks

26 October 2021

WELLINGTON MANAGEMENT®

China perspectives
Opportunities and risks

Opportunities

- Size and scale of economy
- Depth and breadth of domestic equity market
- Strategic growth trajectory
- Diversification in portfolio construction
- Access to innovative sectors and local brands

Risks

- Geopolitics and globalization rewired
- Strategic competition: US/China
- Government motivations and common prosperity
- Regulation
- Debt and demographics

As of September 2021 | Views are as of the date indicated, are based on available information, and are subject to change without notice. Individual portfolio management teams may hold different views and may make different investment decisions for different clients. This material is not intended to constitute investment advice or an offer to sell, or the solicitation of an offer to purchase shares or other securities | Source: Wellington Management

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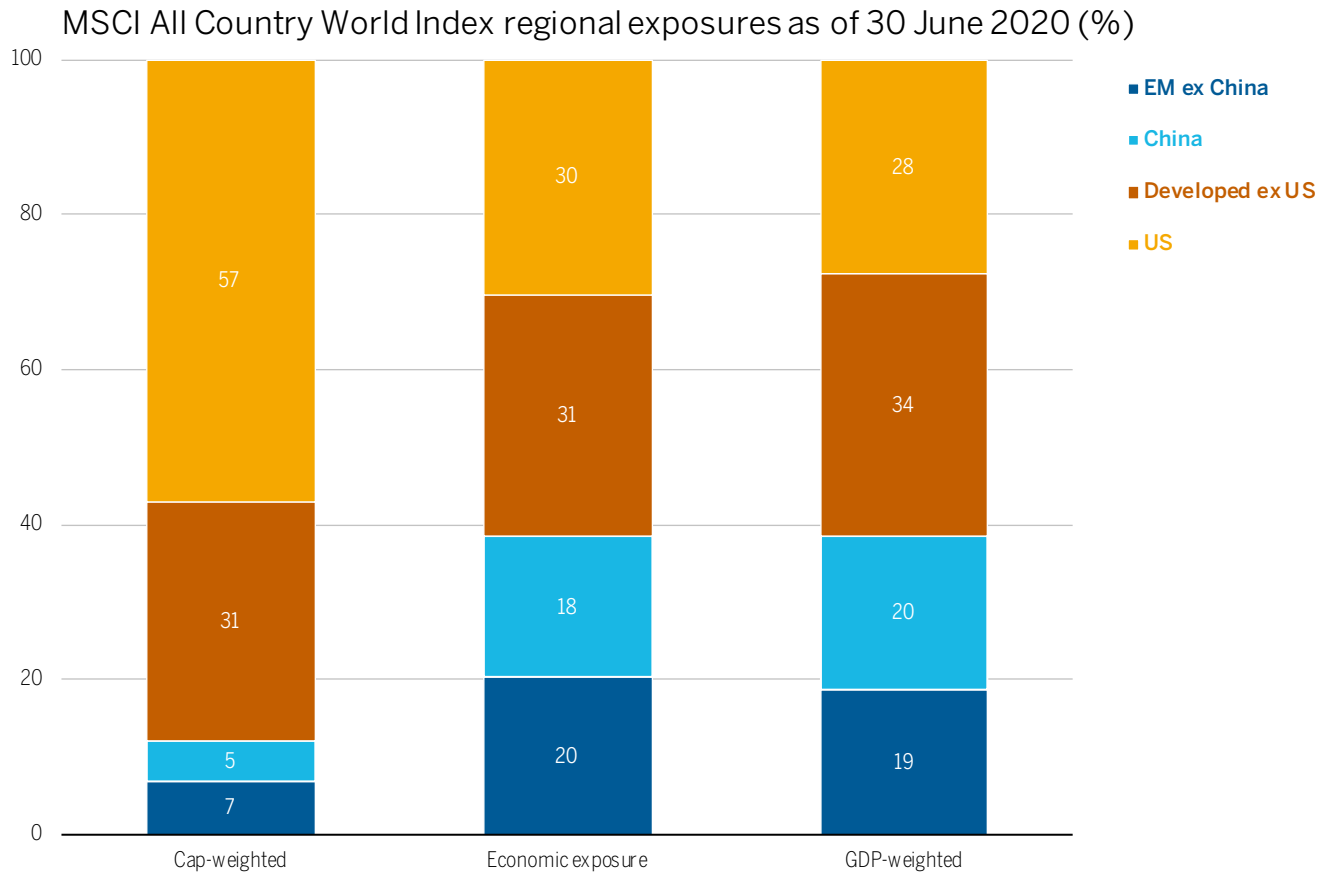
China increasingly driving the global economy

Underrepresented yet growing share in global equity markets



Source: MSCI | Sums may not total due to rounding |

PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

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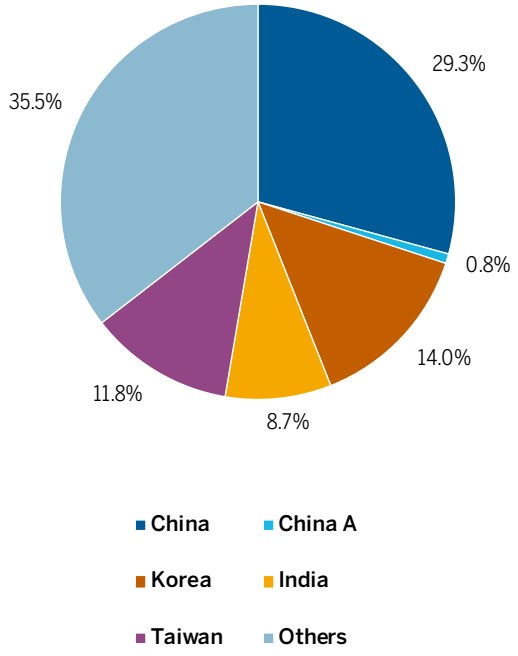
Investing in China

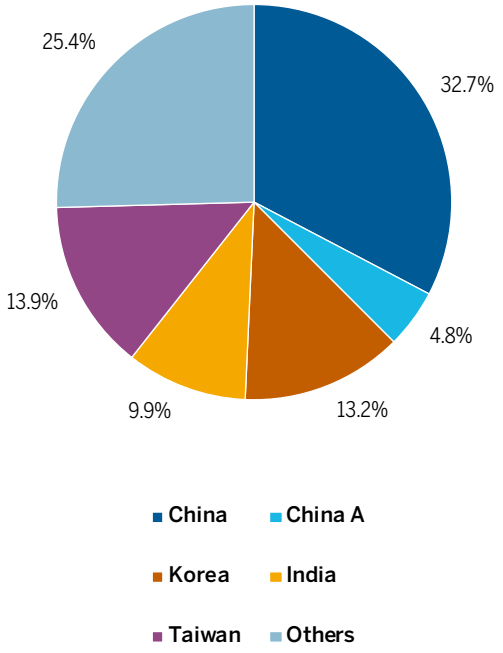
Regional exposure of MSCI EM Index

MSCI Emerging Markets Index

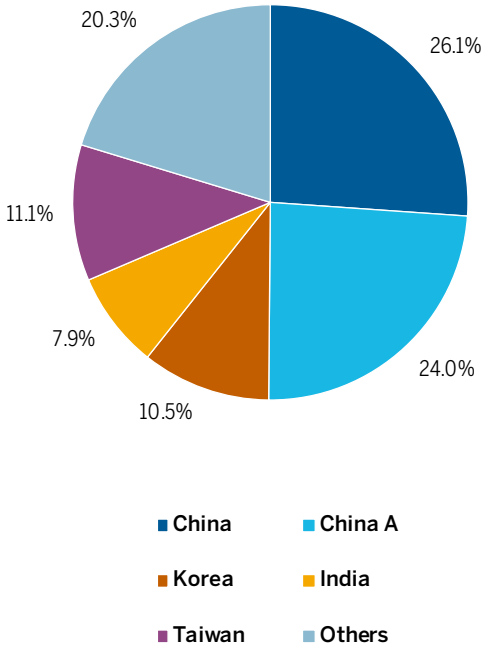
31 October 2018



30 June 2021 (20% Inclusion)



Potential future full A-share inclusion



MSCI Emerging Markets Index weights assuming large and mid-cap-A-shares are fully included in the index, projected based on current index constituents as of 30 June 2021. Index weights are representative of the geographic location of the components (and estimated components) of the index. | Sources: MSCI, Wellington Management | Other refers to all other constituent countries in the Indexes referenced in the header.

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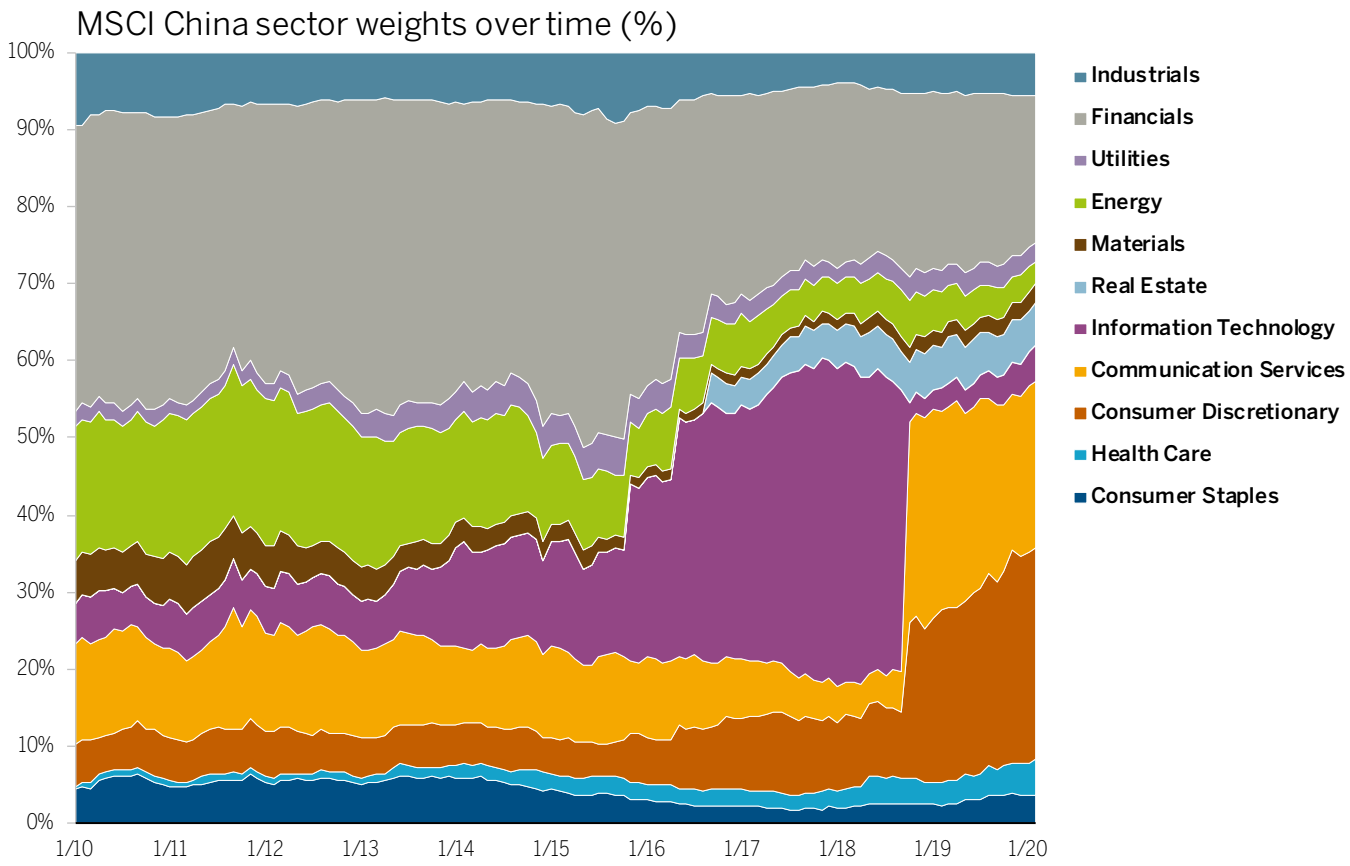
Investing in China

Sector exposure is broadening, reflecting shift in economic exposure



Sources: MSCI, FactSet | Real estate was spun out of the financials sector on 31 August 2016; the reclassification of technology, media, e-commerce, and telecommunication services companies was effected in 4Q18 under the Global Industry Classification Standard. The first tranche of A-share inclusion began on 31 May 2018. | Chart data: 31 January 2010 to 29 February 2020

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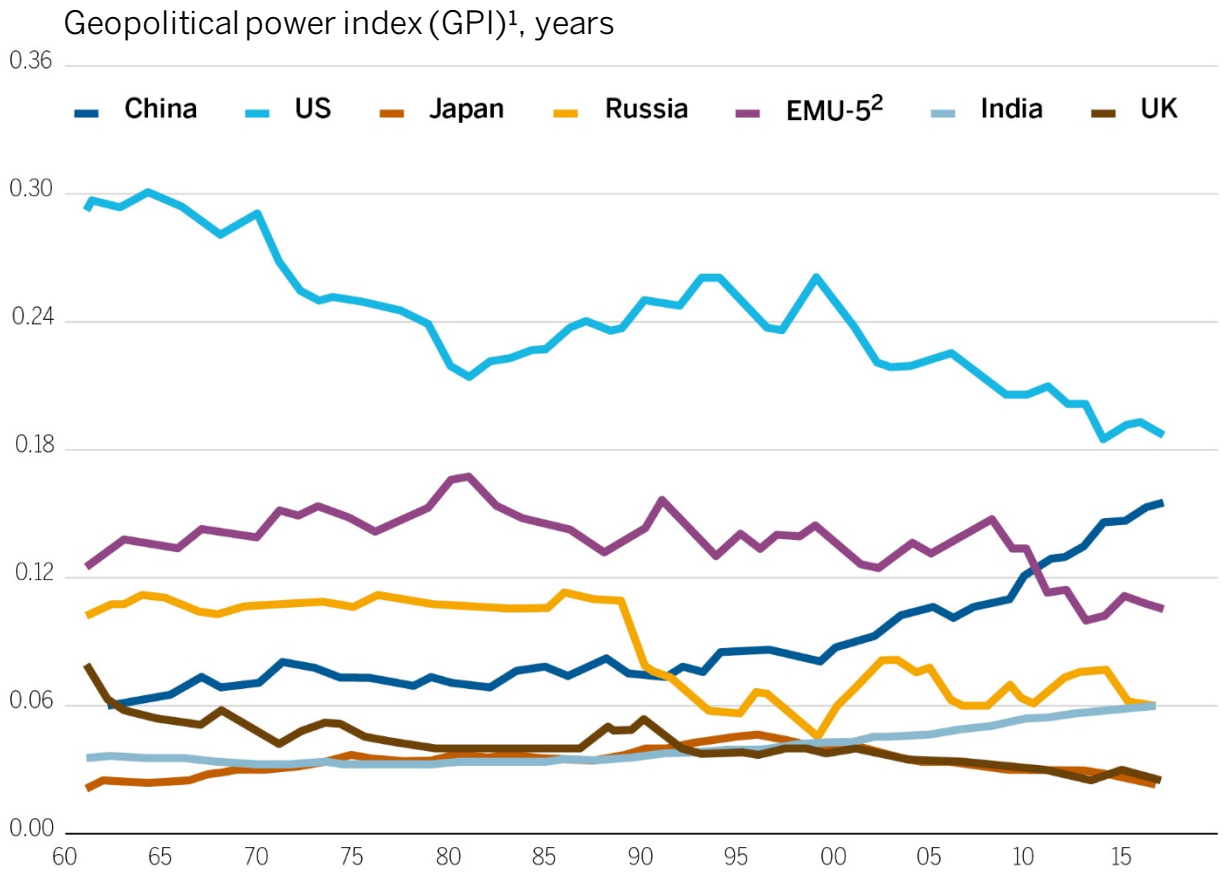
Structural impacts

Reduced power for the US globally



[1]Measured as a country's raw power based on its population, the size of its economy and imports, military expenditure, arms exports, and primary energy consumption | [2]Includes France, Germany, Italy, Spain, and the Netherlands | Source: BCA Research | Chart data: 1960 – 2017

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Structural impacts

Greater geopolitical influence for China

Key point: China now outranks US in total embassies & consulate-general offices globally

Source: Lowry Institute Global Diplomacy Index | As of December 2019

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Geopolitical question of our time

Can US and China escape Thucydides's Trap?

Thucydides: **"It was the rise of Athens and the fear that this inspired in Sparta that made war inevitable"**

The US-China relationship is in flux on a structural level

Key dynamic: **tight economic integration vs strategic rivalry**

South China Sea, TPP, AIIB, integrated supply chains, technology transfers, cyber issues, political trade frictions

Key point: US and China face structural challenges that go beyond personalities

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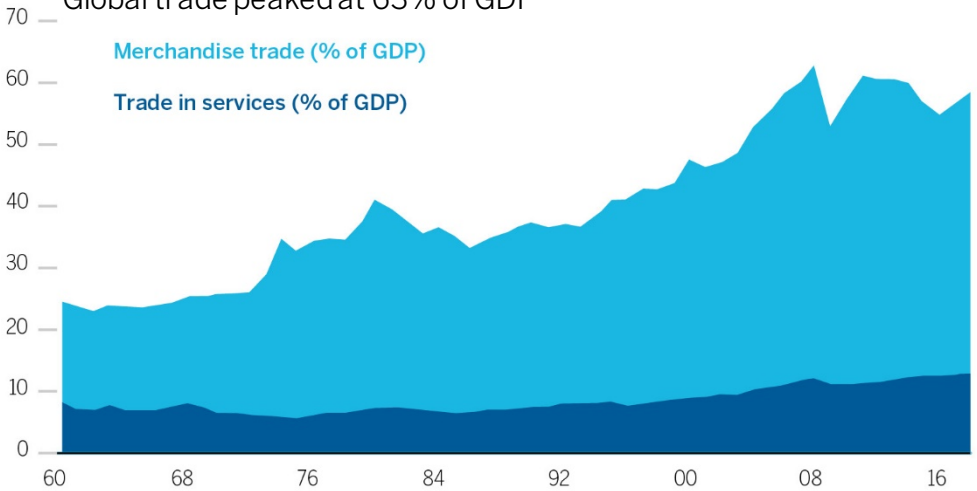
Impact of de-globalization on emerging markets

The trade intensity of industrial output has fallen steadily since 2010

Global trade peaked at 63% of GDP



Sources: Refinitiv, Credit Suisse research, https://www.weforum.org/agenda/2019/07/the-dawn-of-the-asian-century/ | Date: 2019

Global trade growth peaked prior to the Global Financial Crisis in 2008, and has not recovered

Trade Tensions are forcing companies to rethink global supply chains

Greater economic self-sufficiency enjoys broad based support

National champions and regional alliances are gaining tractions

Our view of EM national champions
- Semiconductors
- Biotech
- Ecommerce
- Digital infrastructure
- Electrical vehicles
- Battery tech

Regional alliances
- One belt one road
- TPP (Trans Pacific Partnership)
- RCEP (Regional Comprehensive Economic Partnership)

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Investing in China

China exposure can offer potential return diversification benefits

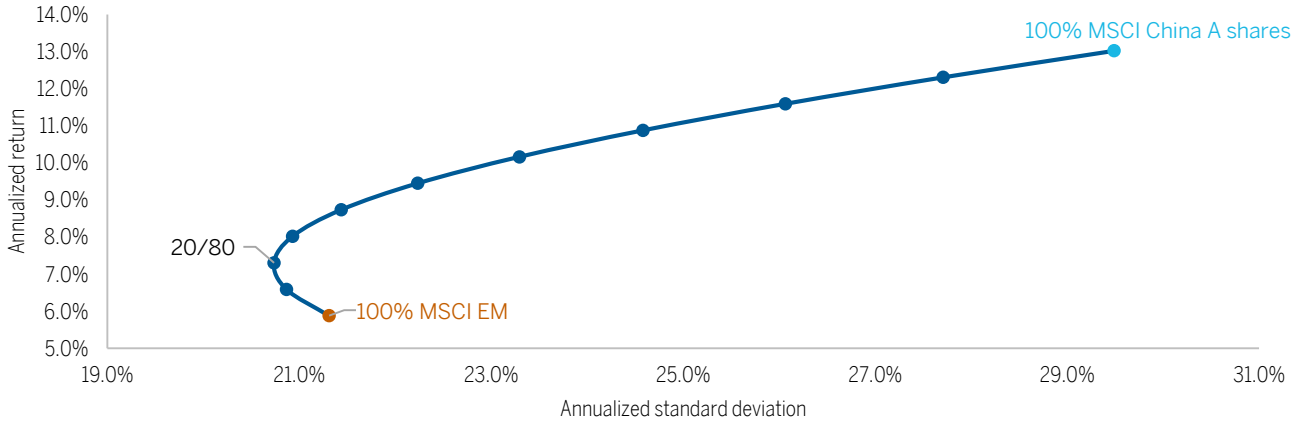
10 years ended 30 June 2021 – Monthly return correlations in USD terms[1]

	MSCI China All Shares Index	MSCI Emerging Markets Index	MSCI Frontier Markets Index	S&P 500 Index	MSCI World Index
MSCI China All Shares Index	1.00	--	--	--	--
MSCI Emerging Markets Index	0.79	1.00	--	--	--
MSCI Frontiers Markets Index	0.45	0.64	1.00	--	--
S&P 500 Index	0.56	0.75	0.62	1.00	--
MSCI World Index	0.61	0.82	0.67	0.97	1.00

The low correlation of MSCI China All Shares Index with other regional equity indices indicates potential diversification benefits

Select China Equity is not constrained by a benchmark, but the MSCI China All Shares Index serves as a reference index for Chinese equities

Efficient Frontier - MSCI China A Shares vs MSCI EM[2]



[1]Not representative of any Wellington Management account or strategy. Based on the returns of the stated MSCI Index returns over the period from 30 June 2011 to 30 June 2021, monthly index return correlations in USD terms. | Sources: MSCI, S&P Dow Jones Indices, Wellington Management | [2]Chart data: May 2005 – June 2021 | Source: Factset | The performance presented is hypothetical and is not representative of an actual account. Hypothetical performance is developed with the benefit of hindsight (i.e., actual knowledge of market condition, result of similar strategies) and thus has many inherent limitations. Actual performance may differ substantially from the hypothetical performance presented. **PAST AND HYPOTHETICAL RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS AND AN INVESTMENT CAN LOSE VALUE.**| Correlation data is based on hypothetical index returns that do not reflect the impact of fees and expenses associated with actual investing, which may alter, perhaps significantly, the results presented. Diversification does not ensure a profit or guarantee against loss. For use in one-on-one presentations only.

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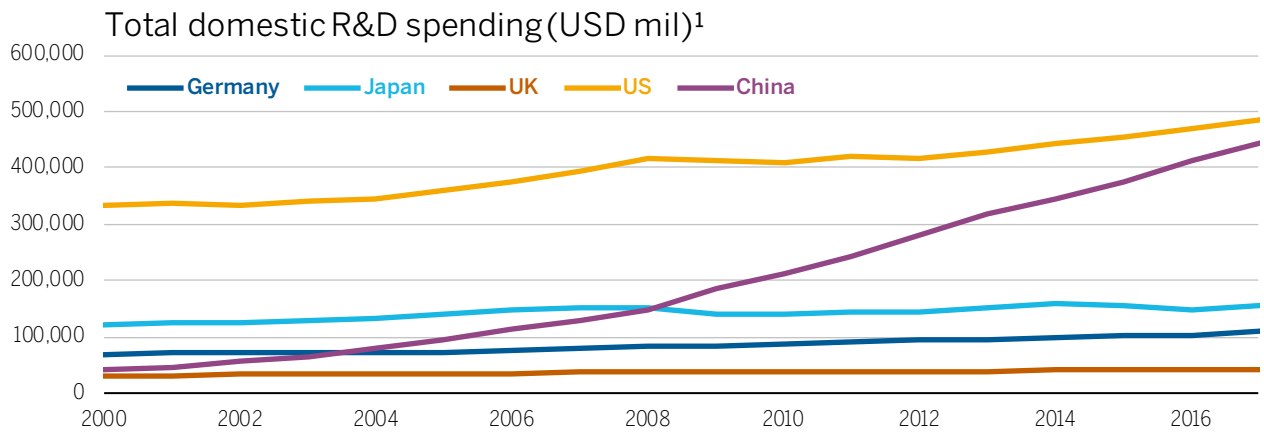
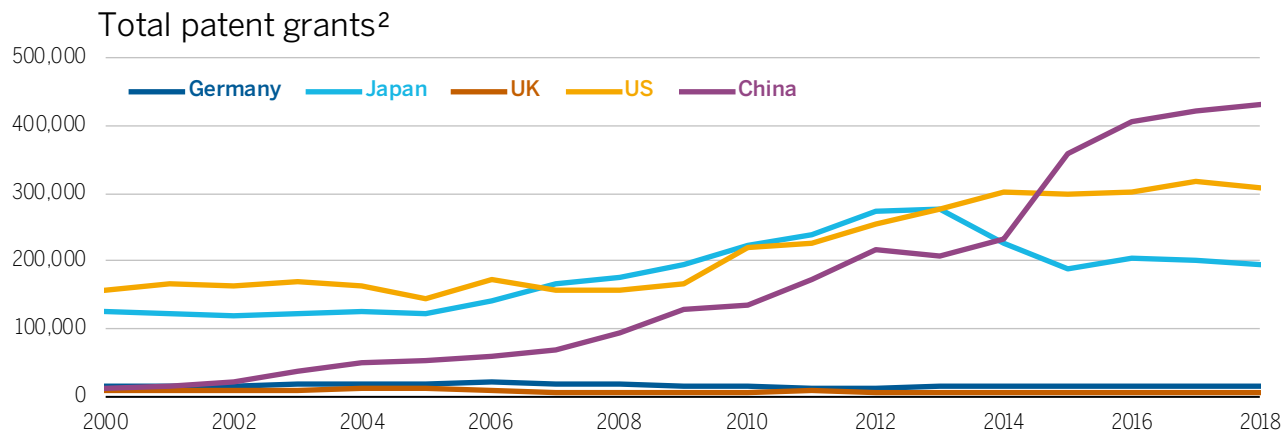
Investing in China

We believe China's economic transformation is not fully appreciated amongst investors





Sources: OECD, World Intellectual Property Organization, Wellington Management. Sources have not updated slide data since dates shown, however the information is not considered materially different at the date of this presentation. | For illustrative purposes only. | [1]Chart data: 2000 – 2017 | [2]Chart data: 2000 – 2018

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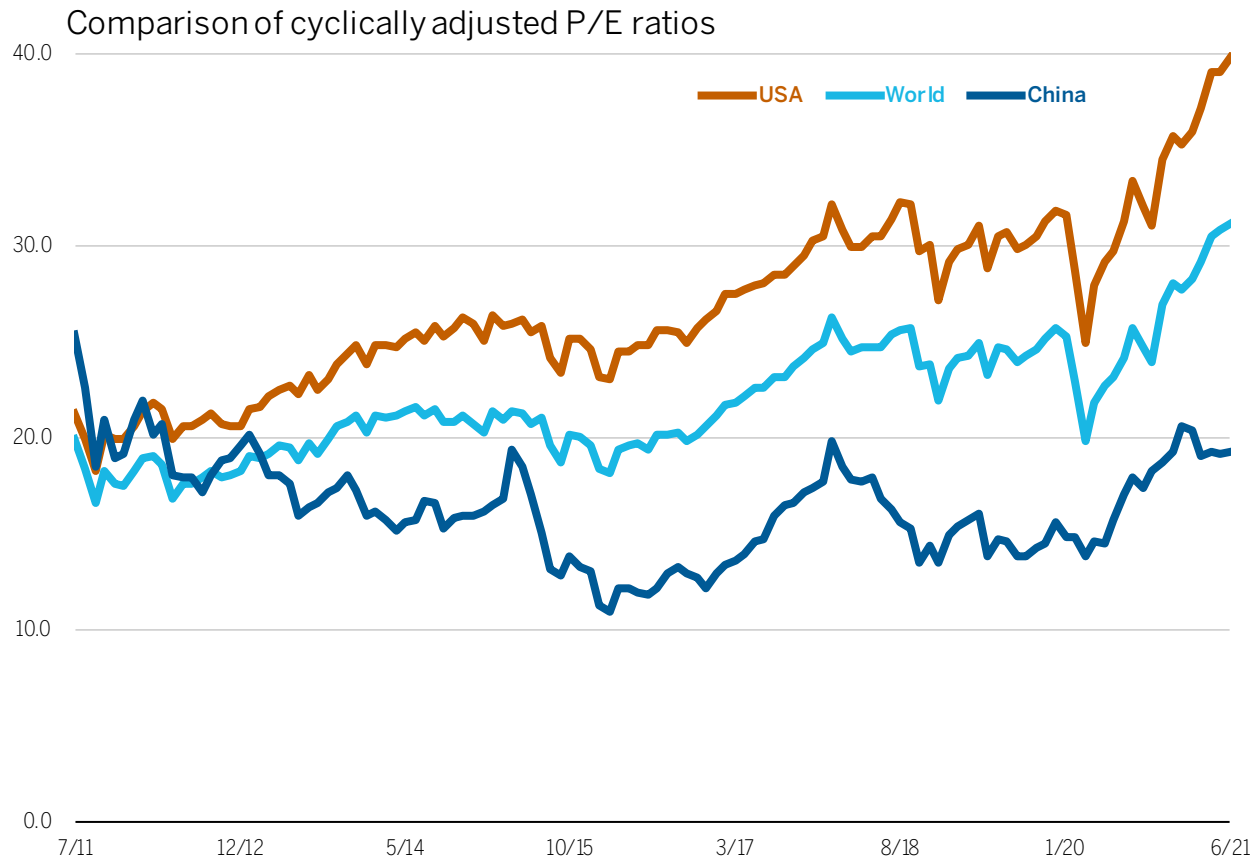
Investing in China

China is attractively valued relative to other markets



Sources: MSCI, FactSet, Jefferies| Trailing 10-year cyclically adjusted P/E ratios | Chart data: 31 July 2011 – 30 June 2021

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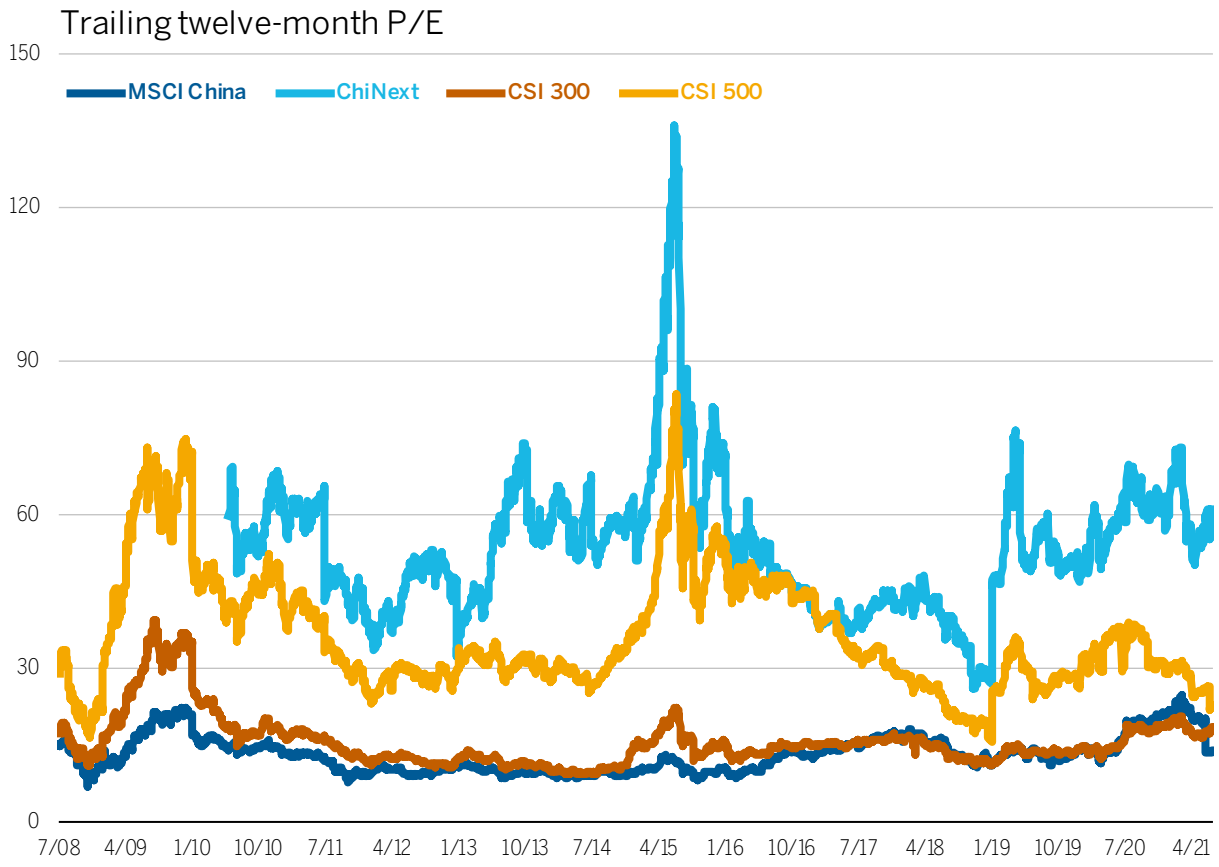
Investing in China

China A-shares: Important to pick your spots – Valuation vary materially by market cap



Sources: WIND, Wellington Management | CSI 300 Index: The CSI 300 index replicates the performance of the 300 largest capitalisation stocks traded in the Shanghai or Shenzhen stock exchanges. CSI 500 Index: The CSI 500 index replicates the performance of 500 mid and small capitalization stocks traded in the Shanghai or Shenzhen stock exchanges. The index excludes stocks included in the CSI 300 Index or which rank in the top 300 stocks in Shanghai or Shenzhen stock markets. ChiNext Price Index: ChiNext is a NASDAQ-style board of the Shenzhen Stock Exchange. ChiNext aims to attract innovative and fast-growing enterprises, especially high-tech firms. | The MSCI China Index captures large- and mid-cap representation across China H-shares, B-shares, red chips and P chips. It contains internationally listed Chinese companies only and does not include domestic A-shares. | **PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.** | Chart data: 1 July 2008 – 30 June 2021

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China Equity

Current themes and areas of focus

Long-term themes

Drives secular change

Leading to industry shifts

Change in demographics

- Continued urbanization
- Aging population
- Higher income growth

- Altering patterns of consumption
- Health care spending
- Development of service sectors

Transition of industries

- Slower growth environment
- Increasing affordability of technology
- Rising online businesses

- Focus on efficiency
- New, positive, network effects
- Creation of national markets

Reform and restructuring

- Reform of state-owned enterprises
- Innovation of financial system
- Market-driven pricing mechanisms

- Potential recognition of undervalued assets
- Improving capital allocation efficiency
- Greater earnings visibility

For illustrative purposes only. Not representative of an actual investment. The characteristics presented are sought during the portfolio management process. Actual experience may not reflect all of these characteristics, or may be outside of stated ranges.

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Assessing ESG risk within China

Our framework to assess materiality and impact on fundamentals

Our belief

- ESG is a component of broader fundamental research
- ESG factors create both investment opportunities and risk
- Importance of ESG considerations within investment theses can vary widely

Examples of ESG considerations in company analysis

Governance
Zero tolerance for poor corporate governance or low management quality

- Ownership and corporate structure
- Management team track record
- Treatment of minority shareholders
- Incentive structure
- Capital allocation
- Business ethics

Environment risks
How sensitive are fundamentals to environmental factors

- Environmental impact and exposure
- Mitigation strategies
- Regulatory and industry trend

Social risks
Assess broader societal and stakeholder impact

- Human capital and labour standards
- Product quality and safety
- Supply chain management

We seek high-quality companies

Assess management decisions

Proprietary ESG rating → Input from ESG Analyst → Regular portfolio ESG review → Potential future engagement with company

For illustrative purposes only. Not representative of an actual investment. The characteristics presented are sought during the portfolio management process. Actual experience may not reflect all of these characteristics, or may be outside of stated ranges. The portfolio does not promote any specific environmental, social and governance (ESG) characteristics or have a sustainable investment objective. While the evaluation of Sustainability Risks through the analysis of ESG factors is part of the investment process, it may not necessarily result in the exclusion of a security.

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Investing in China

Considering the risks

China is a more volatile market, especially A shares[1]

Debt levels have increased in recent years, in particular in the corporate sector, although the majority of the debt is domestically denominated

Growth is on a structurally slowing trend, as the economy matures

While we believe the regulatory environment is improving, there have been a number of regulatory interventions – and some missteps – in recent years

Internal and external political risks are worth considering. There are positives and negatives to single-party centralized control; geopolitics and specifically trade policy has potential impacts in some sectors, and has intensified shifts and reforms across a number of industries, exposing both potential beneficiaries as well as potential laggards

[1]Over the 10 years ended August 2020 the annualized volatility of the MSCI China A Index was 24.5%, compared to 17.9% for MSCI Emerging Markets and 13.8% for MSCI World.

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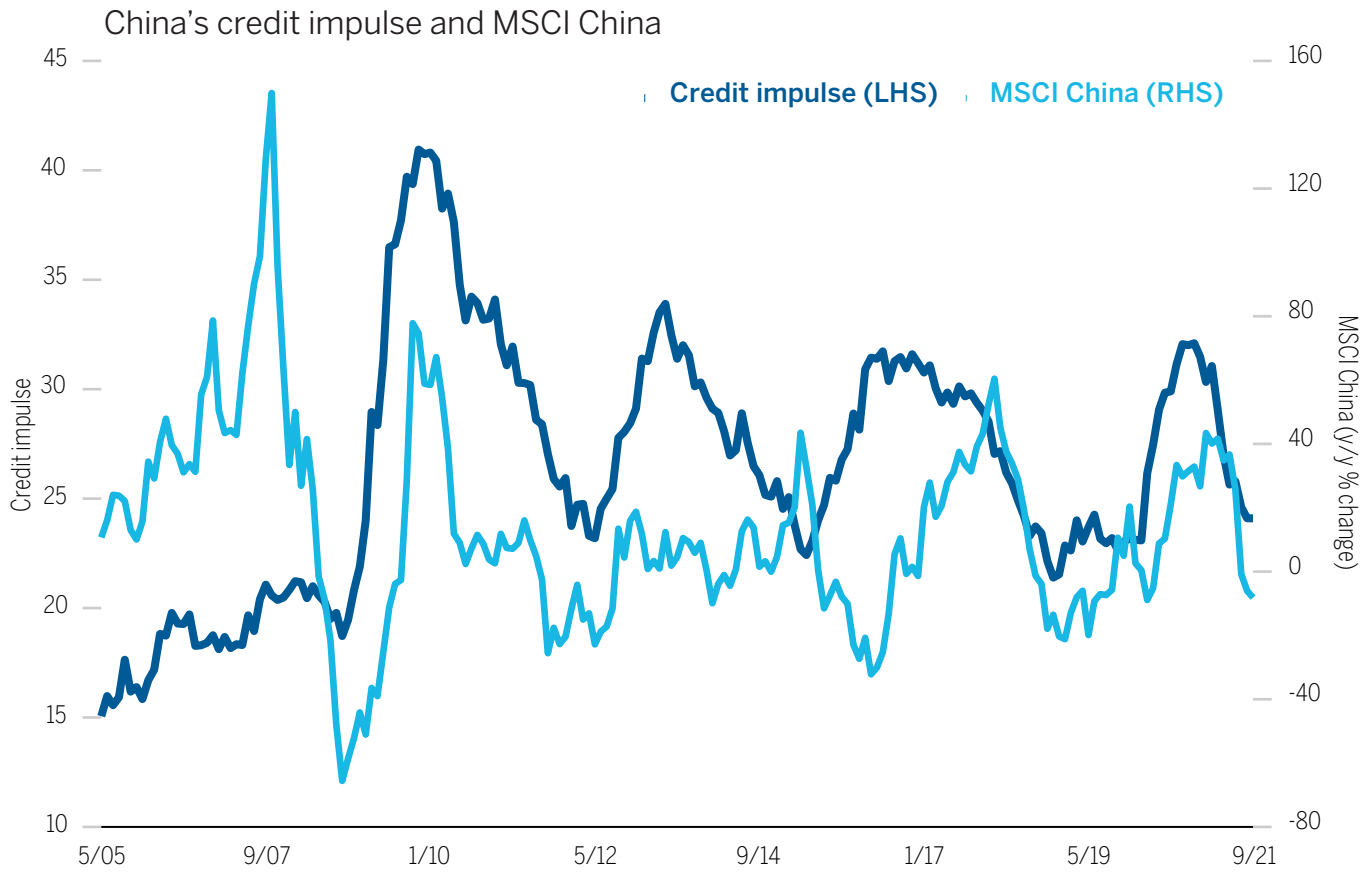
Credit clampdown is slowing China



Credit impulse: the change in new credit issued (the flow of credit) as a percentage of GDP. | Source: Bloomberg | Chart data: May 2005 – September 2021

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WHERE ARE OUR RETIREES?

Data Analysis as of 6/30/2021

Sydney Fowler-Pata, Department Analyst
Jeff Wickman, Retirement Administrator

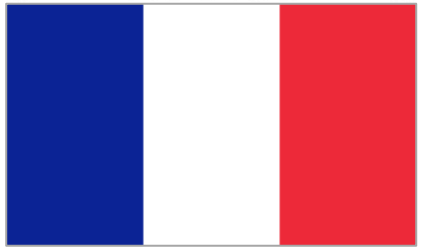
Board of Retirement
Strategic Workshop 10/27/2021

RETIREE LOCATIONS AROUND THE WORLD

UNITED STATES

VIRGIN ISLANDS

FRANCE



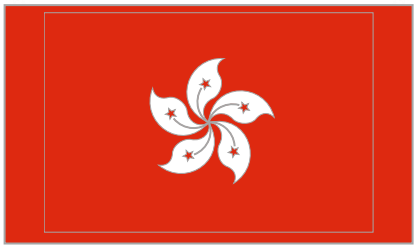
SCOTLAND

SPAIN

ENGLAND

PHILIPPINES

HONG KONG



ISRAEL

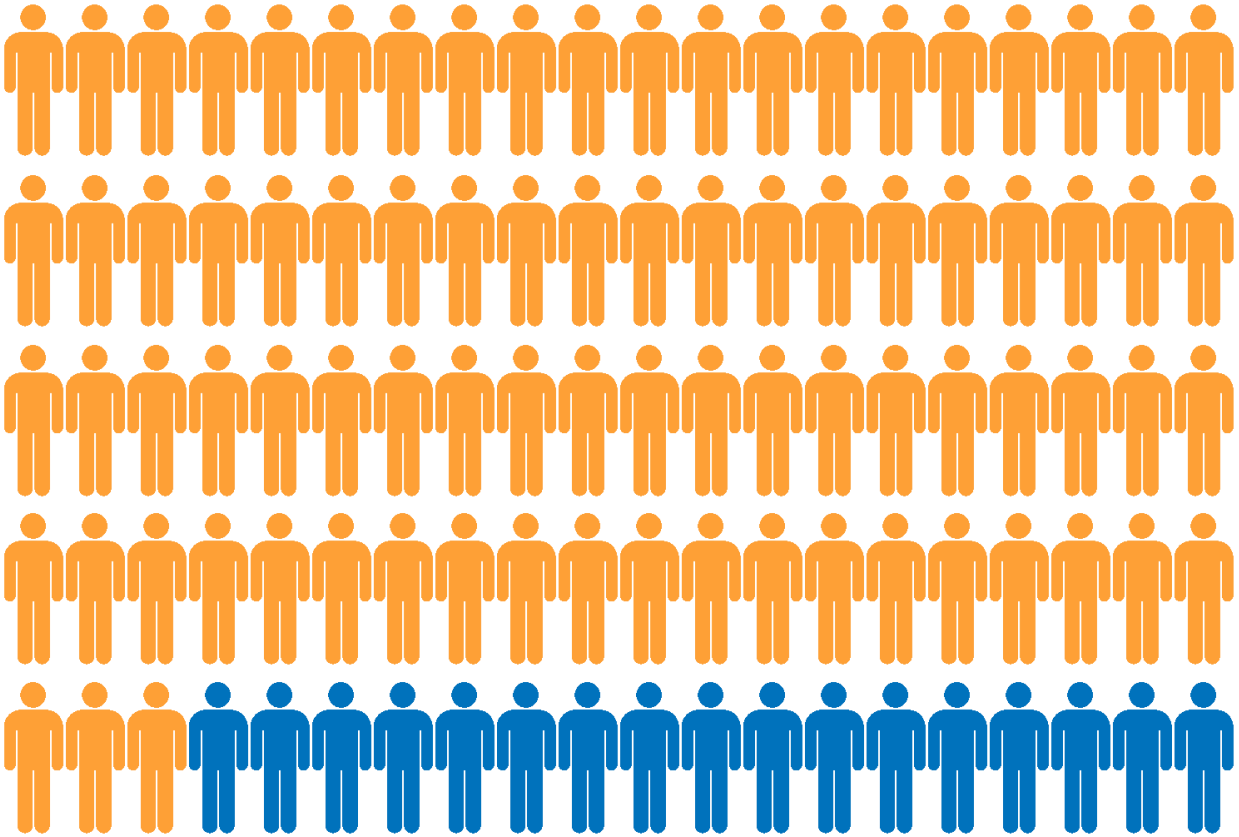
CANADA

SOUTH KOREA

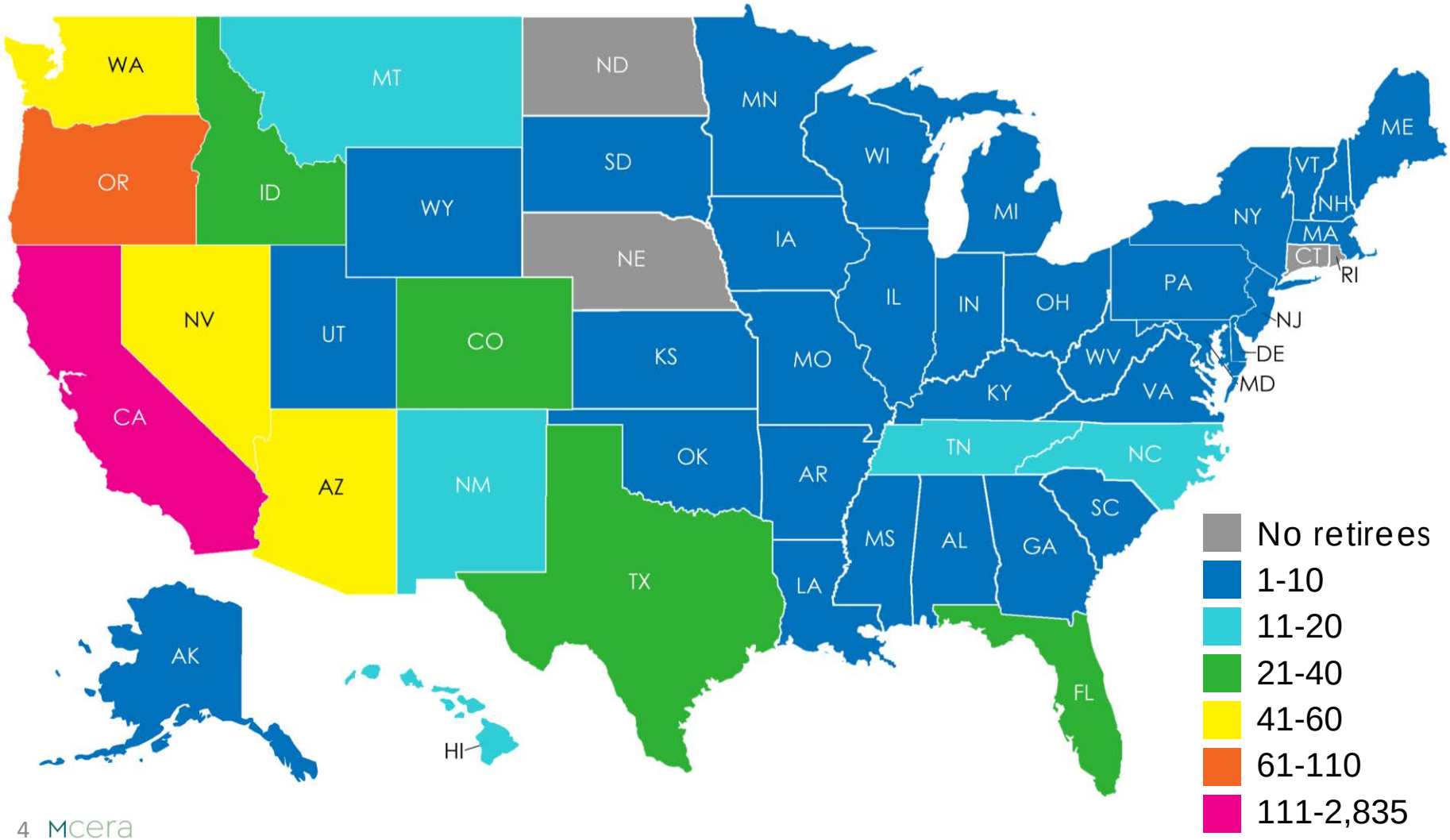
AUSTRALIA

TOTAL RETIREES: 3,422

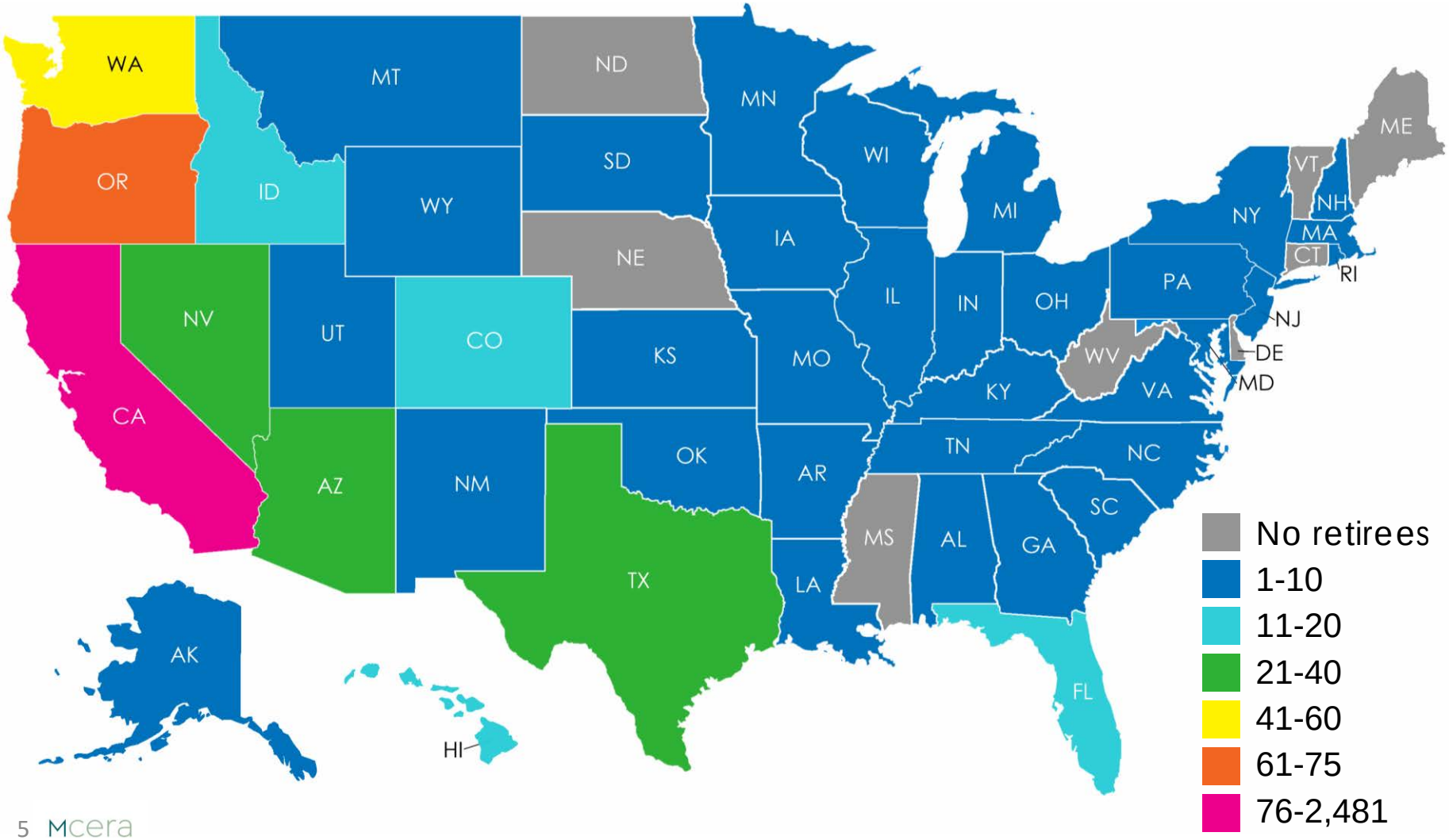
2,835 in California (83%)



LOCATION DISTRIBUTION ACROSS THE USA 2021



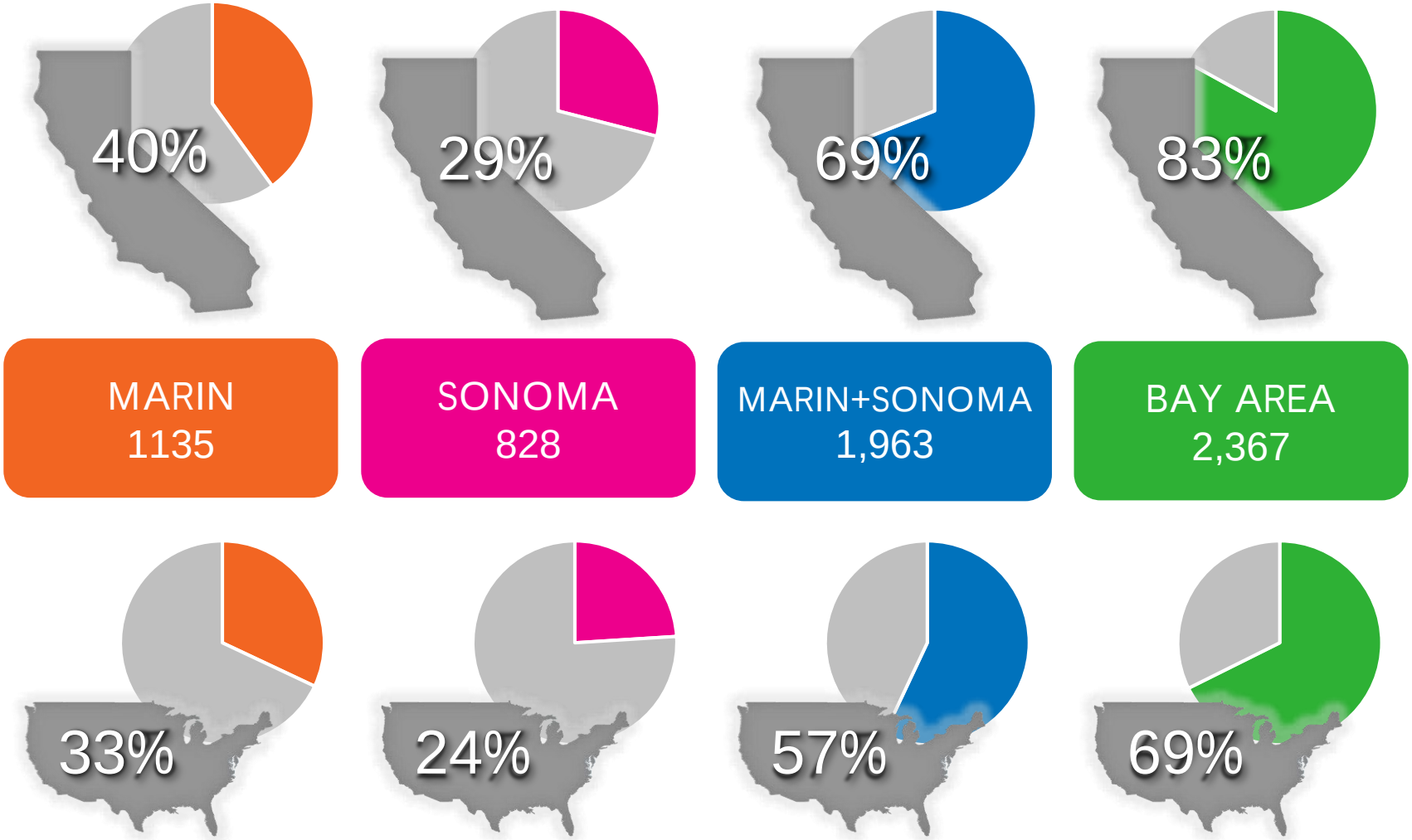
LOCATION DISTRIBUTION ACROSS THE USA 2015



LOCATION DISTRIBUTION ACROSS CALIFORNIA

- No retirees
- 1-10
- 11-20
- 21-40
- 41-60
- 61-100
- 101-1,000
- Over 1,000

RELATIVE PERCENTAGES OF BAY AREA RETIREES



KEY STATISTICS

3,422	Total retirees
2,835	Retirees in CA (83% of total)
109	Retirees in Oregon (second most populous state)
1,135	Retirees in Marin (33% of total, 40% of CA)
1,963	Retirees in Marin & Sonoma (57% of total, 69% of CA)
2,367	Retirees in 9 Bay Area counties (69% of total, 83% of CA)
12	Total countries/territories
46	States in the USA with retirees (out of 50)
51	Counties in CA with retirees (out of 58)

Marin County Employees' Retirement Association

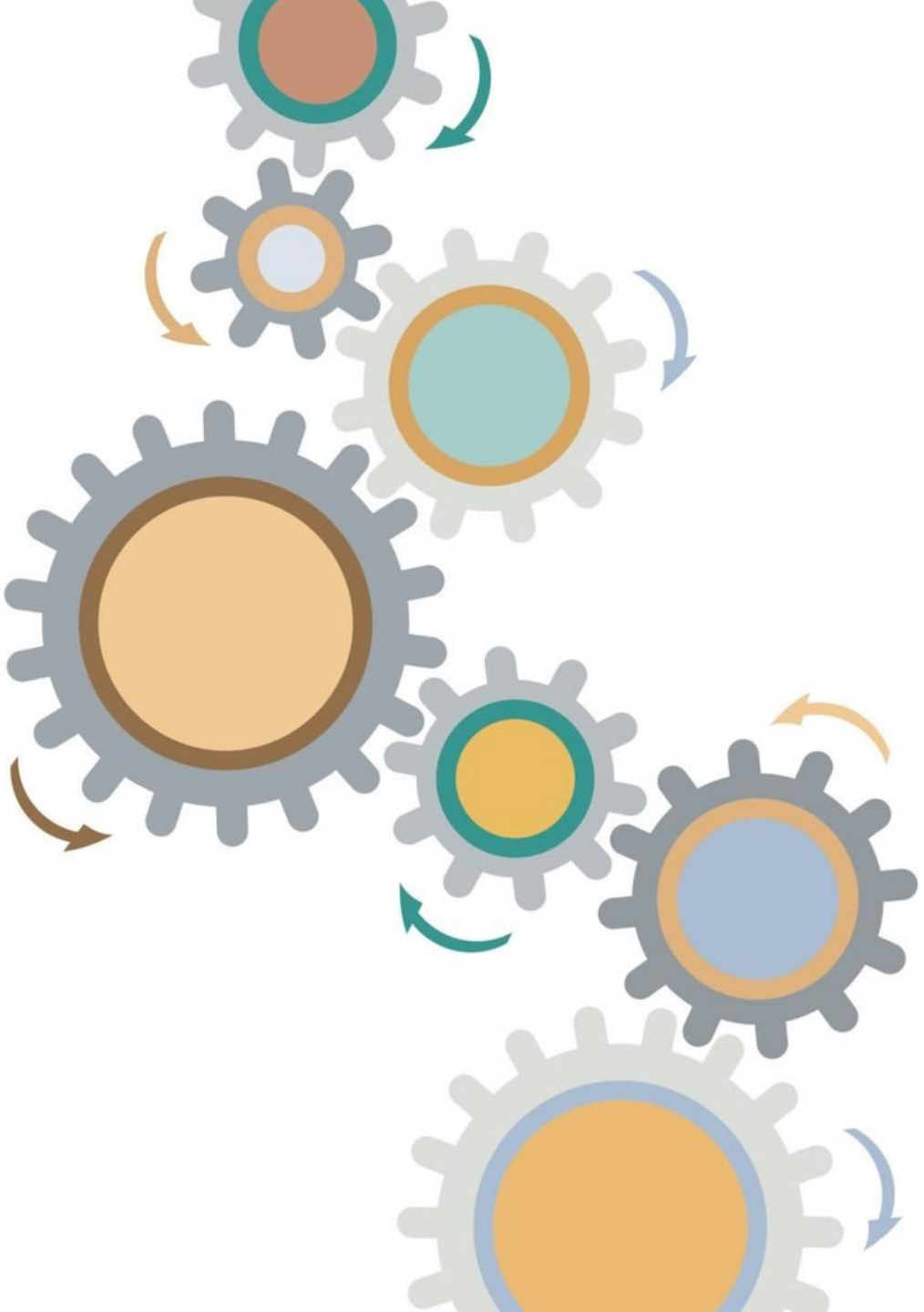
MCERA Annual Business Processes

Board of Retirement Strategic Workshop
October 27, 2021

Michelle Hardesty, Assistant Retirement Administrator
Sydney Fowler-Pata, Department Analyst

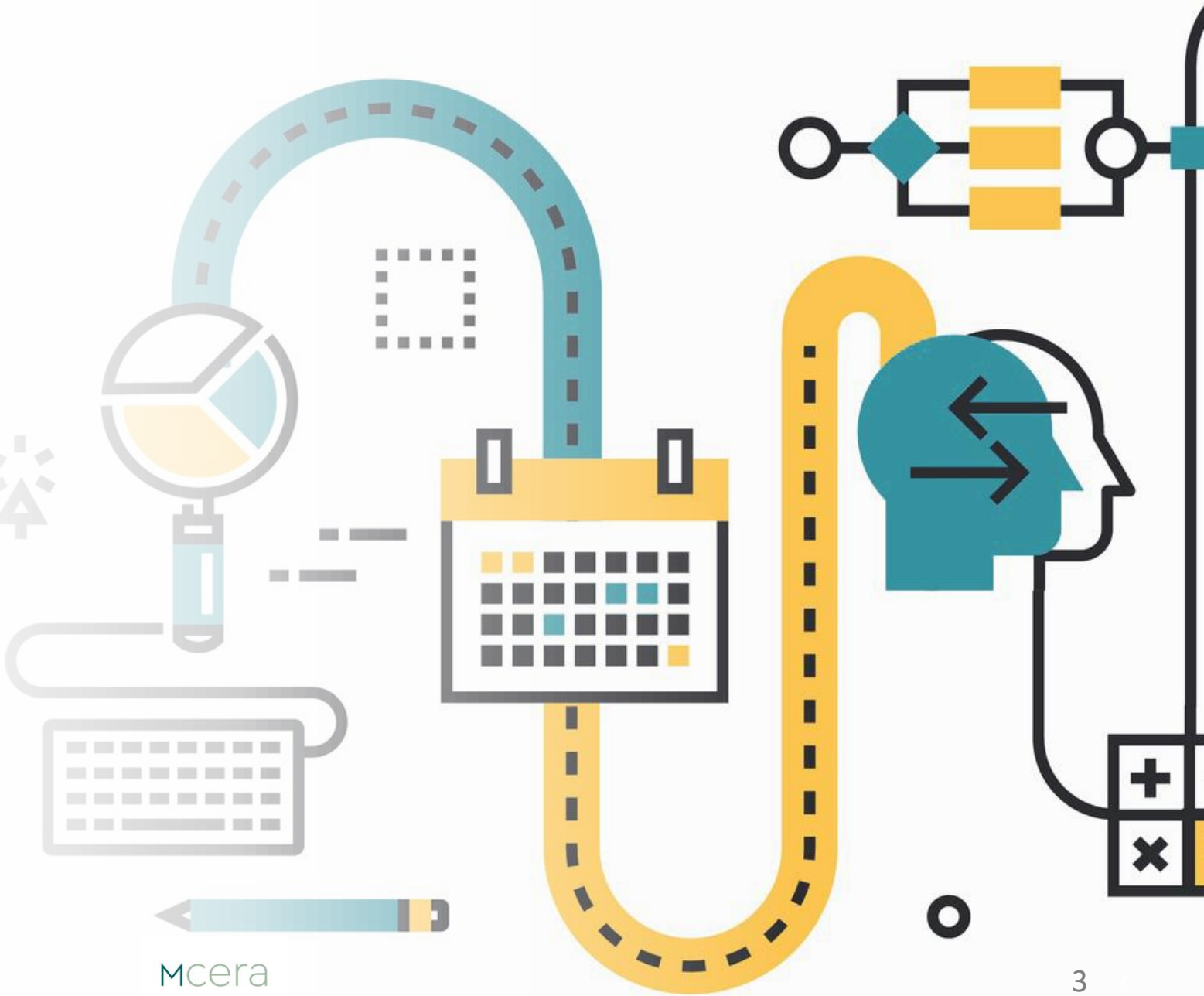
Agenda

- Background
- Annual Processes by Month
- Steps for Completion

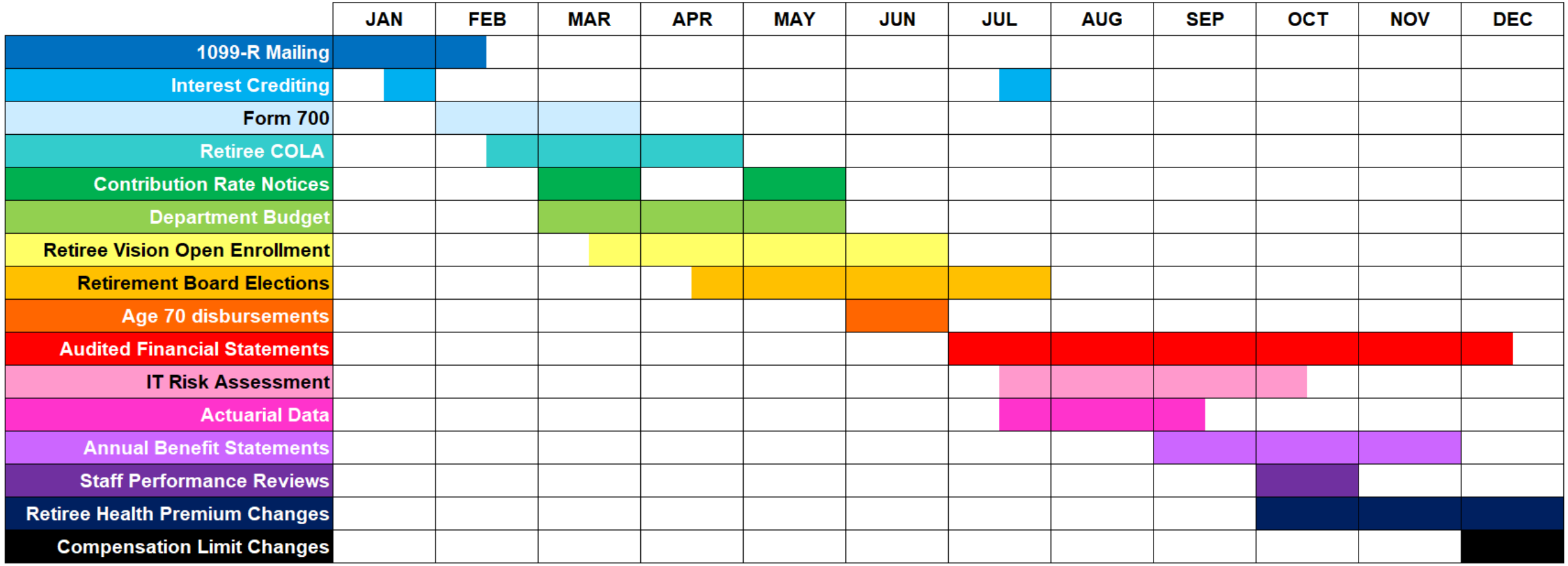


Background

- The ongoing/daily processes performed by each internal MCERA division (Accounting, Administration, Benefits) are essential to the Plan's function.
- In addition to these, a number of processes recur annually that must be conducted alongside the daily work.
- Annual processes have set time frames and, generally, change very little from year to year.



Annual Processes by Month



Steps for Completion

Planning
Identify staff, identify needs, identify resources, set schedule.

Execution
Gather relevant information/ data, review information/data for accuracy, test the process, implement.

Communication
External (employers and members), internal (staff), print media, website updates.

Follow Up
Documentation, lessons learned, revisions for the following year.